ENVIRONMENTAL ASSESSMENT

Adobe Town - Salt Wells Creek Herd Management Area Complex Population Management Plan and Environmental Assessment

EA# WY040-EA07-37

PREPARED BY:

U.S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RAWLINS AND ROCK SPRINGS FIELD OFFICES

2006

Introduction

Background Information

This Environmental Assessment (EA) has been prepared to analyze the environmental effects of potential population control methods (including fertility control treatment) in order to achieve and maintain the established Appropriate Management Levels (AMLs) for the Adobe Town - Salt Wells Creek Herd Management Complex (ATSW Complex) and prevent further deterioration of the range as a result of the current overpopulation of wild horses.

This EA contains the site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA ensures compliance with the National Environmental Policy Act (NEPA); it analyzes information to determine whether to prepare an Environmental Impact Statement (EIS) or issue a "Finding of No Significant Impact" (FONSI). A FONSI documents why implementation of the selected action will not result in environmental impacts that significantly affect the quality of the human environment.

The ATSW Complex is located in southwest Wyoming within Carbon and Sweetwater Counties. The Complex totals 2,574,258 acres of public, State and private lands and includes the two BLM herd management areas (HMAs) listed in Table 1.

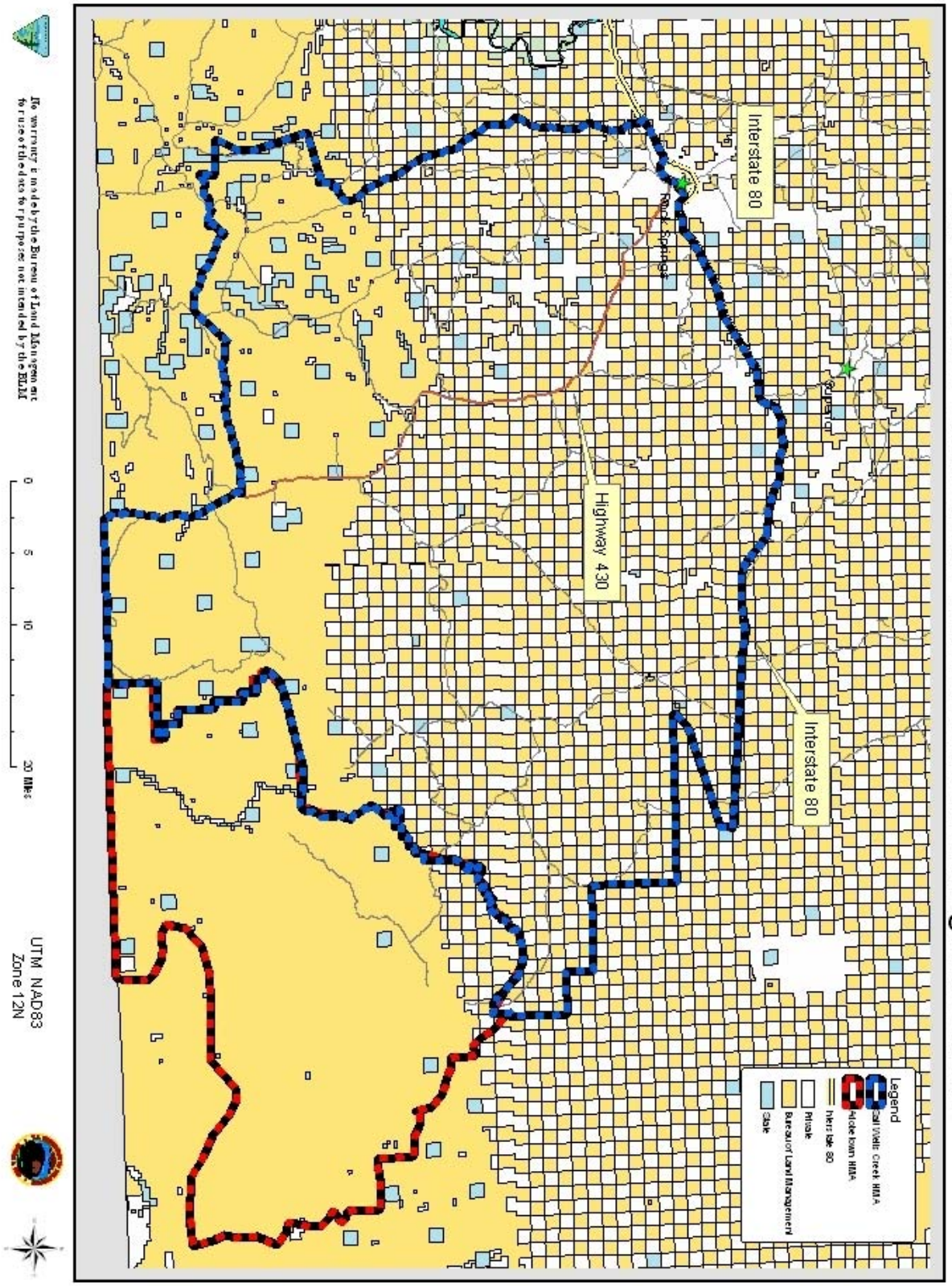
Table 1. HMAs within the Adobe Town - Salt Wells Complex

Area	Public Acres	Other Acres
Adobe Town HMA	417,916	30,000
Salt Wells Creek HMA	690,400	480,308
I-80 South* (RFO)	359,000	195,000
RSFO Outside HMAs**	279,808	121,724
Total Acres (BLM)	1,747,208	827,050

** All lands south of Interstate 80 and west of Wyoming Hwy 789 with the exception of the Adobe Town HMA. The horses are not uniformly distributed throughout this entire area.*

***This represents only part of that area and includes all lands south of Interstate 80 and west of Flaming Gorge Reservoir with the exception of the Salt Wells Creek HMA. The horses are not uniformly distributed throughout this entire area.*

Historically, the Adobe Town and Salt Wells Creek HMAs have been managed separately by the Rawlins and Rock Springs Field Offices (RFO and RSFO). In 2003, the two field offices began managing the two HMAs as a management complex as there are no physical or geographical boundaries to restrict movement of wild horses between the two HMAs. Refer to Figure 1 for a map of the affected area.


Salt Wells and Adobe Town Wild Horse Herd Management Areas
Interstate 80
Rock Springs
Rawlins
Highway 430
Interstate 80
Legend
Salt Wells Creek HMA
Adobe town HMA
Interstate 80
Private
Bureau of Land Management
State
No warranty is made by the Bureau of Land Management for use of the data for purposes not intended by the BLM
0
5
10
20 Miles
UTM NAD83
Zone 12N

The Appropriate Management Level (AML) for the jointly-managed ATSW Complex is 1,008 wild horses with an identified management range of 861 to 1,165. The AMLs were set through various BLM planning decisions (refer to EA, pages 18 for more information). As discussed in those decisions, the AML for the ATSW Complex represents the maximum number which can graze without damage to the range.

Wild horses were last removed from the ATSW Complex in August and September 2005 when 1,520 were captured and 1,197 were removed. At the time, the post-gather population was estimated at 861 horses. Aerial census and distribution flights completed in April 2006 along with the 2006 annual foal crop results in a current estimated population of 2,210 wild horses, 2.56 times the AML for wild horses. The WY BLM has partnered with the U.S. Geological Survey (USGS)-Biological Resources Division (BRD) to research and develop improved population estimating protocols based on aerial surveys which have resulted in the significant increase in population size identified in this document. An additional aerial census and distribution flight is scheduled for December 2006 to better identify horse distribution and numbers prior to the proposed gather operation.

In addition to population census and distribution flights, resource monitoring data indicates the current overpopulation of wild horses is resulting in moderate to heavy utilization of key forage and browse species within the ATSW Complex. The horses within the ATSW Complex are currently in good physical condition with some of the older animals and lactating mares in poorer condition.

Analysis of the above information indicates that excess wild horses are present and require immediate removal. As a result, any decision of the authorized officer will be implemented effective upon issuance under authority provided in 43 Code of Federal Regulations (CFR) 4770.3 (a) and (c).

Purpose and Need

Need for Action

Vegetation and population monitoring in relation to use by wild horses in the ATSW Complex has determined that current wild horse population levels are exceeding the range's capacity to sustain wild horse use over the long-term. Resource damage is occurring and is likely to continue to occur without immediate action. The proposed population control is needed to remove the excess animals in order to achieve a thriving natural ecological balance between wild horse populations, wildlife, vegetation, and water resources and to protect the range from further deterioration associated with overpopulation of wild horses as authorized under Section 3 (b) (2) of the 1971 Wild Free-Roaming Horses Act (1971 Act) and Section 302 (b) of the Federal Land Policy and Management Act of 1976.

The proposed action and alternatives are also needed to assure that wild horses are managed at the minimum feasible level of management and in consultation with State wildlife agency as required Section 3(a) of the 1971 Act. Applying fertility control protocol as a part of the proposed action would slow reproduction rates of mares returned to the ATSW Complex

following the gather, allowing vegetation resources time to recover. It would also decrease gather frequency and disturbance to individual animals and the herd and provide for a more stable herd structure.

Conformance with Existing Land Use Plans

The proposed action and other action alternatives are in conformance with both the Great Divide Resource Management Plan (RMP) approved November 1990 and the Green River RMP approved on August 8, 1997. 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 AML or HMA boundaries within the area covered by this EA.

The Green River RMP objectives for management of wild horses are to: 1) protect, maintain, and control viable, healthy herds of wild horses while retaining their free-roaming nature; 2) provide adequate habitat for free-roaming wild horses through management consistent with principles of multiple use and environmental protection; and 3) provide opportunity for the public to view wild horses. Gathering and removal of excess wild horses from the Salt Wells Creek HMA is in conformance with the Green River RMP. Wild horse numbers that were agreed to with private land owners and wild horse advocacy groups were addressed in developing the RMP. Wild horse HMAs were established or confirmed through the Green River RMP planning process.

Conformance with Rangeland Health Standards and Guidelines

The proposed action and other action alternatives are in conformance with the Wyoming's Rangeland Health Standards and Guidelines for Livestock Grazing Management. The proposed action will assist in maintaining the health of the public lands within the HMAs. A copy of Wyoming's Standards for Healthy Rangelands is available upon request from either the RFO or RSFO.

Relationship to Statutes, Regulations or Other Plans

Public lands are managed under the Federal Land Policy and Management Act of 1976 (FLPMA). The FLPMA emphasizes that the public lands are to be managed to protect the quality of scenic, ecological, environmental, and archeological values; to preserve and protect public lands in their natural condition; to provide feed and habitat for wildlife and livestock; and to provide for outdoor recreation. The FLPMA also stresses harmonious and coordinated management of the resources without permanent impairment of the environment.

The proposed action and action alternatives are in conformance with Section 302 (b) of FLPMA. They are also in conformance with the regulations found at Title 43 CFR 4700 as follows:

- 43 CFR 4700.0-6 (a): *Wild horses shall be managed as self-sustaining populations of healthy animals and in balance with other uses and the productive capacity of their habitat.*
- 43 CFR 4700.0-6 (e): *Healthy excess wild horses for which an adoption demand by qualified individuals exists shall be made available at adoption centers for private maintenance and care.*
- 43 CFR 4710.4: *Management of wild horses shall be at the minimum level necessary to attain the objectives identified in approved land use plans.*
- 43 CFR 4720.1: *Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exist, the authorized officer shall remove the animals immediately.*

No federal, state, or local law or requirement imposed for the protection of the environment will be threatened or violated under the proposed action or any action alternatives described in detail in this EA.

Decision to Be Made

The authorized officers will select the population control method(s) to be implemented to achieve and maintain the established Appropriate Management Levels (AMLs) for the Adobe Town - Salt Wells Complex and to prevent the further deterioration of the range resulting from overpopulation of wild horses.

Proposed Action and Alternatives

This section of the EA describes the proposed action and alternatives, including any that were considered but eliminated from detailed analysis. Alternatives analyzed in detail include the following:

- Alternative A : Proposed Action - Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol
- Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol
- Alternative C: No Action Alternative (Defer Population Control)

The proposed action and other action alternatives were developed to meet the purpose and need (i.e. achieve and maintain AML and prevent further range deterioration). Although Alternative C (Defer Population Control) does not comply with the 1971 Wild Free-Roaming Horses Act (as amended), nor meet the purpose and need for action, it is included as a basis for comparison with the action alternatives.

Actions Common to Alternatives A & B

The following actions are common to Alternatives A and B:

- All capture and handling activities would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix I. Multiple capture sites (traps) would be used to capture wild horses within the ATSW Complex. Whenever possible, capture sites would be located in previously disturbed areas. Capture techniques would be the helicopter-drive trapping method and/or helicopter-roping from horseback. Bait trapping may also be utilized on a limited basis, as needed.
- An Animal and Plant Inspection Service (APHIS) veterinarian will be on-site, as needed, to examine animals and make recommendations to BLM for care and treatment of wild horses in accordance with Washington Office Instruction Memorandum (IM) 2006-23. On-site inspection by an APHIS veterinarian is required for any animals to be transported across State borders without testing for Equine Infectious Anemia (EIA) prior to transport. (A copy of this I.M. can be reviewed upon request at either the RFO or RSFO.)
- Selection of animals for removal and/or release would also be guided by BLM's *Gather Policy and Selective Removal Criteria for Wild Horses* (Washington Office IM 2005-206). (A copy of this I.M. can be reviewed upon request at either the RFO or RSFO.)

Descriptions of Alternatives Considered In Detail

Alternative A: Proposed Action – Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

The Proposed Action is to gather approximately 85% of the current estimated wild horse population within the ATSW Complex, or about 1,880 wild horses in January 2007. Of the animals gathered, approximately 1,349 excess wild horses would be removed and shipped to BLM holding facilities in either Rock Springs, WY or Canon City, CO where they will be prepared for adoption and/or sale to qualified individuals or long term holding. The estimated population remaining on the range following the gather would be about 861 wild horses.

Of the 531 wild horses returned to the ATSW Complex post-gather, 50-60% would be studs (266-319), with the remainder mares (213-266). All the mares released would be subject to fertility control experimentation research protocol with a two-year treatment of Porcine Zona Pellucida (PZP). Fertility control would be conducted in accordance with Standard Operating Procedures as described in Appendix II.

Alternative B: Remove Excess Animals (Lower Limit of AML range) Without Fertility Control

The Proposed Action is to gather about 75% of the current estimated wild horse population within the ATSW Complex, or about 1,658 wild horses in January 2007. Of the animals gathered, approximately 1,349 excess wild horses would be removed and shipped to BLM holding facilities in either Rock Springs, WY or Canon City, CO where they will be prepared for adoption and/or sale to qualified individuals or long term holding. The estimated population remaining on the range following the gather would be about 861 wild horses.

Unlike the Proposed Action, mares returned following the gather to the ATSW Complex would not be subject to fertility control experimentation research. All other capture and handling activities would be the same as described for the Proposed Action.

Alternative C: No Action Alternative (Defer Population Control)

Under the No Action Alternative, a gather to remove excess wild horses within the ATSW Complex would not take place in January 2007. There would be no active management to control the size of the wild horse populations at this time. However, existing management including monitoring would continue.

The Wild Free-Roaming Horses Act requires the Bureau to prevent the range from deterioration associated with overpopulation of wild horses, and to preserve and maintain a thriving natural ecological balance and multiple use relationship in that area. The No Action Alternative would not comply with the 1971 Act or with applicable federal regulations and Bureau policy; nor would it comply with Wyoming's Rangeland Health Standards and Guidelines for Livestock Grazing Management. It is included as a baseline for comparison with the action alternatives, as required under NEPA.

Alternatives Considered but Eliminated from Detailed Analysis

Change the Current Established AMLs

AMLs for the ATSW Complex were established based on in-depth analysis of monitoring data (refer to EA, page 18). This is consistent with the Interior Board of Land Appeals ruling which states: *"We note that the Secretary, in his June 1981 letter, indicates that an appropriate determination of the number of wild horses to be permitted on the public range, consistent with Section 3(b) of the Act, requires relying on an intensive monitoring program involving studies of grazing utilization, trend in range condition, actual use and climatic factors…"* (109 IBLA 120). By removing wild horse numbers in excess of the AML, the BLM will have an opportunity to complete additional monitoring over the next five to ten year period and to make adjustments in the AML number (either up or down), if needed, based on resource monitoring results. Changing AMLs prior to completing the necessary monitoring, in-depth analysis, and compliance with NEPA is contrary to law, regulation and policy. Therefore, this alternative was not considered in detail.

Closure of HMAs to Livestock Grazing

This alternative was not analyzed in detail because the 1971 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 1971 Act complied with and wishes to have healthy horses on healthy habitats within the area.

Description of the Affected Environment and Environmental Consequences

This section of the environmental assessment briefly discusses the relevant components of the human environment which would be either affected or potentially affected by the proposed action and alternatives (refer to Table 3 below). Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred. 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 action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Table 3: Critical Elements and Other Resources Checklist

CRITICAL ELEMENTS	Present	Affected	OTHER RESOURCES	Present	Affected
ACECs	**YES**	**NO**	Fire Management	**YES**	**NO**
Air Quality	**YES**	**NO**	Forestry and Woodland	**YES**	**NO**
Cultural	**YES**	**NO**	Land Use Authorizations	**YES**	**NO**
Environmental Justice	**NO**	**NO**	Livestock Management	**YES**	**MAY**
Floodplains	**NO**	**NO**	Minerals	**YES**	**NO**
Waste (Hazardous or Solid)	**NO**	**NO**	Paleontology	**YES**	**NO**
Noxious Weeds	**YES**	**MAY**	Rangeland Vegetation Resources	**YES**	**YES**
Native American Religious Concerns	**YES**	**NO**	Recreation	**YES**	**MAY**
Migratory Birds	**YES**	**NO**	Socioeconomics	**YES**	**NO**
Prime or Unique Farmlands	**NO**	**NO**	Soils	**YES**	**NO**
Riparian-Wetland Zones	**YES**	**NO**	Visual Resources	**YES**	**NO**
T&E Species	**YES**	**MAY**	Wild Horses	**YES**	**YES**
Water Quality	**NO**	**NO**	Wildlife	**YES**	**MAY**
Wild and Scenic Rivers	**NO**	**NO**	Wilderness and Wilderness Study Area	**YES**	**MAY**

General Description of the Affected Environment

The area covered by this analysis is within the jurisdiction of the Rawlins and the Rock Springs Field Offices, Wyoming BLM. It is bordered on the south by the Colorado state line, on the east by Wyoming Highway 789, on the north by Interstate Highway 80, and on the west by the Flaming Gorge Reservoir. As shown in Table 1, over two and one half million acres of public, State, and private lands are included in this analysis. Potential areas to be affected by wild horse management decisions equal 45% of all public lands within the RFO and 57% within the RSFO. Map 1 portrays the analysis area. The majority of the private land holdings in the Salt Wells

Creek HMA are in a checker board land pattern with every other section alternating between public and private.

Elevation ranges from 6,470 feet along Sand Creek Wash, to over 8,000 feet on Black's Butte. Summers are hot, and winters can range from mild to bitterly cold. Annual precipitation ranges from less than 7 to more than 12 inches per year. About half of the precipitation falls during the growing season from April through June, with the remainder coming in high intensity summer thunderstorms. Much of the precipitation from summer thunderstorms runs off in numerous drainages. Some of this water is captured in reservoirs or pits, and is the primary source of water for wild horses, livestock, and wildlife.

Elements of the Human Environment Present or Potentially Affected

The following critical or other elements of the human environment are present and may have potential to be affected by the proposed action or the alternatives:

Wildlife, Threatened and Endangered Species, Special Status Species and Migratory Birds

Affected Environment

The mosaic of plant communities and topographic features that are found throughout the ATSW Complex supports a wide variety of wildlife species that use the various habitats for resting, courtship, foraging, travel, supplies of food and water, thermal protection, escape cover and reproduction.

Species specific surveys were not conducted for common wildlife within the ATSW Complex. A variety of wildlife species occur or have the potential to occur in the project area including mule deer, pronghorn antelope, elk, moose, coyote, red fox, bobcat, desert cottontail, Wyoming ground-squirrel, horned lark, raven, magpie, and common nighthawk. Mule deer, elk and antelope utilize the project area year-round and approximately 2-20% of the project area is identified a crucial winter range for these species. For a complete list of species found within the RFO and RSFO's jurisdiction, which includes the ATSW Complex, see the Rawlins RMP/FEIS dated October 2006 and the Green River RMP dated May 2005.

Threatened, Endangered, Proposed and Candidate Species

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

The status of all potentially affected federally designated species with regard to the project is summarized below. The Colorado River and North Platte River Specie, Preble's Meadow Jumping Mouse, Western Boreal and Wyoming Toads are not located, or habitats are not found, within the project area. There will be no effect on these species as a result of implementing this project.

Bald Eagle - Threatened
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 - Endangered
Potential ferret habitat exists in the project area. Surveys conducted in relation to other development activities in the Salt Wells Creek HMA have not recorded black-footed ferret. Trap sites and staging areas associated with this project will not be placed in prairie dog towns

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

Gray Wolf – Experimental population
The Gray Wolf is an experimental population throughout the project area. One known location of a lone wolf was reported by WGFD personnel in 2002 north of the gather area. This wolf has not been seen since and is believed to have been a young animal, most likely dispersing and looking for a new home range. There have also been sightings of wolves in the Red Desert and near Granger.

The BLM has determined that the proposed action is not likely to jeopardize the continued existence of the species. The Rocky Mountain population of Gray Wolf is listed as a "Non-essential Experimental Population". This species will not be given further consideration in this analysis.

Canada Lynx - Threatened
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.

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 4 greater sage-grouse leks and/or associated nesting habitat within or adjacent to the Adobe Town HMA, and approximately 30 greater sage-grouse leks and/or associated nesting habitat within or adjacent to the Salt Wells Creek HMA.

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

Environmental Consequences

Impacts of Alternative A: Proposed Action - Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

Trap sites would be constructed and operated under the direction and guidance of a wildlife biologist to avoid potential wildlife. Wildlife adjacent to trap sites would be temporarily displaced during capture operations by increased activity of trap setup, helicopters and vehicle traffic. Reduction of wild horse numbers would result in reduced competition between wild horses and wildlife as soon as the gather is completed. In addition, it would reduce competition between wild horses and wildlife for available forage and water resources. Disturbance associated with wild horses along stream bank riparian habitat and adjacent upland habitat would be reduced.

Impacts of Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol

Under Alternative B, impacts associated with capture and removal operations are expected to be similar to the proposed action. The effects of just removing the excess animals would be of a shorter duration due to increased recruitment rates without the implementation of the fertility control protocol as in the Proposed Action.

Impacts of Alternative C: No Action Alternative (Defer Population Control)

Wildlife would not be temporarily displaced or disturbed under the No Action Alternative. However, there would be continued competition with wild horses for limited water and forage resources. This competition would increase as wild horse numbers continued to increase annually. Wild horses are aggressive around water sources and some wildlife species may not be able to compete successfully. The continued competition for limited resources may lead to increased stress or dislocation of native wildlife species. Additionally, increased competition between wild horses and wildlife species for the new growth important for plants to make and store carbohydrates and for promoting long-term vegetation recovery, could result impact vegetation recovery and encourage non-native or invasive plants to become established. This could result in deteriorated habitat conditions for native wildlife over the longer term.

Vegetation and Soils

Affected Environment

There are a variety of vegetation types in the RFO and RSFO 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 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, sandhill muhly, Canby and little bluegrass, and threadleaf sedge are the predominant grasses and grass-like species. Wyoming 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.

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 eastern 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 western 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 RFO and RSFO.

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.

Environmental Consequences

Impacts of Alternative A: Proposed Action - Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

The removal of excess wild horses from inside the project area and associated non-HMA areas 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.

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.

Ute ladies'-tresses occurs in riparian areas. The gather operations 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.

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.

Impacts of Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol

Under Alternative B, the impacts associated with capture and removal operations are expected to be similar to the proposed action.

Impacts of Alternative C: No Action Alternative (Defer Population Control)

Under Alternative C, wild horse population control 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 HMA. Eventually, long-term rangeland health would be jeopardized. In the absence of healthy rangelands, animal health would eventually be impacted, leading to increasing numbers of wild horses in poor body condition and at risk of starvation or death without human intervention.

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.

This alternative would allow wild horse populations to increase within the Adobe Town and Salt Wells Creek HMAs and nearby areas as no population management would take place. 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 probably deteriorate significantly which would affect the native species and the habitat for special status species.

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.

Recreation

Affected Environment

The public enjoys seeing wild horses roaming free in the Rawlins and Rock Springs Field Office areas. Although demand is not high, some people (residents and nonresidents) make special trips to see wild and free-roaming horses in their natural environment. One outfitter is permitted by BLM to conduct tours of the ATSW Complex.

Other recreation in the project area is quite dispersed with the greatest amount occurring during the hunting seasons for the various game animals and birds. Primary recreational activities other than hunting includes camping, hiking, rock hounding, photography, wildlife and wild horse viewing, off highway vehicle (OHV) use and sightseeing.

Environmental Consequences

Impacts of Alternative A: Proposed Action - Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

Implementation of the proposed action would be expected to improve rangeland health which would potentially enhance the aesthetic quality of recreational opportunities, such as hiking, wildlife viewing, and hunting. Opportunities to view wild horses in the ATSW Complex would continue, however, there would be fewer animals in better body condition available for viewing than at present. Fertility control treatment would be expected to slow population growth; opportunities to view mares with foals during the next 2-3 years would be reduced over the present situation. During the capture operation it may be necessary to temporarily close BLM and FS roads to allow for the safe and humane capture of wild horses. This would be accomplished in a manner to impact the fewest recreational users as possible.

Impacts of Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol

Under Alternative B, the impacts associated with capture and removal operations are expected to be similar to the proposed action. Fewer wild horses would be available for viewing during the first year following the gather. In years 2-3 following the gather, more mares with foals would be available for viewing than with the proposed action since fertility control would not be applied.

Impacts of Alternative C: No Action Alternative (Defer Population Control)

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 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 HMA to view wild herds because the wild horses would be forced to expand their territories outside the current HMA 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 HMA and beyond it.

Wild Horse

Affected Environment

The Adobe Town – Salt Wells Creek Complex consists of two herd management areas: Adobe Town and Salt Wells Creek. The Adobe Town HMA, managed by the Rawlins Field Office, is approximately 448,000 acres in size. The Salt Wells Creek HMA, managed Rock Springs Field Office, is approximately 1,193,000 acres of which 725,704 acres are public and the remaining acres are privately controlled. The majority of the private land holdings in the Salt Wells Creek HMA are in a checker board land pattern with every other section alternating between public and private owned or controlled land. The aforementioned land status pattern stems back to the land

grants given to the railroad companies (in this case, the Union Pacific Railroad Company) to develop transportation corridors in the west. The Rock Springs Grazing Association is currently in control of a majority of the private lands in the checker board within the Salt Wells Creek HMA.

Historically, the wild horses residing within the ATSW Complex have had free and unrestricted movement between the Adobe Town and Salt Wells Creek HMAs. Based on past inter-movement of animals, the wild horses residing in the Complex have similar characteristics and genetic makeup.

The AML for the Adobe Town HMA was a specifically defined population range that would result in an average population of 700 adults over time. The AML was established May 1994 in the Great Divide Resource Area Wild Horse Herd Management Area Evaluation following intensive resource monitoring. The management range is 610 to 800 wild horses. The range condition and trend studies that were used in 1993 to determine the level of use (AML) of 700 horses were repeated in 2003-04 and revealed a consistent downward trend in range condition throughout the area from 1993 to 2003.

The current population for the Adobe Town HMA portion of the Complex is estimated at 725 wild horses and an additional 125 horses are expected to occupy the area outside the Adobe Town HMA known as I-80 South.

The Rock Springs Grazing Association and Wild Horses Yes entered into an historic agreement in 1979 which provided for the management of specific numbers of wild horses on the privately controlled lands and the contiguous public lands within the Salt Wells Creek HMA. The AML for wild horses was established through this agreement at a range of 251 to 365 adult horses and reaffirmed in the 1996 Green River Resource Management Plan.

The current population for the Salt Wells Creek HMA portion of the Complex is currently estimated at 1,360 wild horses.

In 2003, an increased level of coordination of management activities and objectives was entered into for the Adobe Town and Salt Wells Creek HMAs. Past capture, census, and distribution data collected indicate considerable movement and interchange among the horses of these two HMAs.

The post-gather population of about 861 wild horses should eliminate any potential for inbreeding. Baseline genetic diversity data was collected in 2003 for both HMAs within the ATSW Complex. The blood samples were analyzed by Dr. E. Gus Cothran, Department of Veterinary Science, University of Kentucky. His conclusions and recommendations regarding genetic diversity in the Adobe Town and Salt Wells Creek herds are partially summarized as follows:

“Genetic variation in the Adobe Town herd is fairly high**.** All measures are above the feral average. Allelic diversity is particularly high. The high number of variants suggests a herd of mixed origins which could include some Spanish breed ancestry. The pattern of variation is one

often seen in populations that have been through a bottleneck, however, the population size does not give an indication of a bottleneck. No action is needed (to maintain genetic variation). The AML for this herd is large and there should be no problems with maintenance of genetic variation." (Cothran, 2004)

"Genetic variability of the Salt Wells Creek herd is high. The high variation is likely due to a mixed breed origin for the herds and high population size. The herds show no clear relationship to any domestic horse breed groups although highest similarity is to Iberian horse breeds followed by North American breeds. The two herds appear likely to have genetic interchange with each other. There also are differences in the two herds but these could be due to the small sample size." (Cothran, 2004)

"No action is needed. Genetic variation is high and the AML is high enough to prevent drastic loss of variation." (Cothran, 2004)

Wild horses were last removed from the ATSW Complex in August and September 2005 when 1,520 were captured and 1,197 were removed. At the time, the post-gather population was estimated at 861 horses. Aerial census and distribution flights completed in April 2006 and estimates the current population of wild horses 2,210 horses, 2.56 times the AML for wild horses. An additional aerial census and distribution flight is scheduled for December 2006 to better identified horse distribution and numbers prior to the proposed gather operation.

Environmental Consequences

The WinEquus program, developed by Dr. Steven Jenkins at the University of Nevada at Reno was designed to assist wild horse specialists evaluate various management plans and possible outcomes for management of wild horses. More information about the model is available upon request from the RFO or RSFO.

Population modeling was completed for the three alternatives to analyze possible differences that could occur to the wild horse populations between alternatives. Modeling was completed for the ATSW Complex. One objective of the modeling was to identify if any of the alternatives "crash" the population or cause extremely low population numbers or growth rates. Minimum population levels and growth rates were found to be within reasonable levels and adverse impacts to the population are not likely. Graphic and tabular results are displayed in detail in Appendix III.

Impacts of Alternative A: Proposed Action – Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

Under the Proposed Action, the post-gather population of wild horses for the Complex would be about 861. The post-gather numbers represent the lower limit of the AML range.

Under this alternative, all mares (213-266) would be treated with a two-year application of PZP prior to their release. Each of these mares, if pregnant, would be expected to foal normally during the 2007 foaling season. The treatment of PZP would be expected to slow population

growth starting in 2008 and be effective for 2-3 years following treatment. Under this alternative, projected wild horse population would not be expected to exceed the current upper limit of the AML range until Year 4 following the gather (about 2011).

Table 4. Adobe Town - Salt Wells Complex – Projected End of Year Population Size*

	Year 1	Year 2	Year 3	Year 4	Year 5
Efficiency %	Normal	94%	82%	68%	Normal
Total Population	1,000	1,089	1,198	1,341	1,556

*Note: Projected population estimates include the current year's foals which do not count towards the AML.

Impacts associated with gathering wild horses are well documented. Gathering wild horses causes direct impacts to individual animals such as stress, fear or confusion due to gather activities. These impacts may occur as a result of handling stress associated with the gather, capture, processing, and transportation of animals. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individuals from this impact is infrequent but does occur in one half to one percent of wild horses captured in a given gather. Other impacts to individual wild horses include separation of members of individual bands of wild horses and removal of animals from the population.

Indirect impacts can occur to wild horses after the initial stress event, and may include increased social displacement, or increased conflict between animals. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries may occur, and typically involve biting and/or kicking bruises, which don't break the skin. The occurrence of spontaneous abortion events among mares following capture is very rare.

Mares treated with fertility control would be studied as part of BLM's ongoing fertility control research. For more information about BLM's fertility control research, refer to: http://www.fort.usgs.gov/WildHorsePopulations/default.asp

Mares receiving the fertility control inoculation would experience slightly increased levels of stress from additional handling while they are being inoculated and freeze branded. There would be potential additional indirect impacts to animals at the isolated injection site following the administration of the fertility control vaccine. Injection site injury associated with fertility control treatments are extremely rare in treated mares, and may be related to experience of who is administering the fertility control. For monitoring purposes, wild horses treated with the PZP vaccine would be identified by the freeze-mark "HB" on the left hip.

Impacts of Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol

Under Alternative B, the post-gather population of wild horses for the Complex would be about 861. The post-gather numbers represent the lower limit of the AML range.

Under this alternative, all released mares would foal normally over the next 3-4 year period. Based on a normal projected population increase (16%), wild horse numbers are expected to exceed the upper limit of the AML range in Year 3 following the gather (about 2010):

Table 5. Adobe Town - Salt Wells Complex – Projected End of Year Population Size*

	Year 1	Year 2	Year 3	Year 4	Year 5
Efficiency %	Normal	Normal	Normal	Normal	Normal
Wild Horse Numbers	1,000	1,160	1,346	1,561	1,811

*Note: Projected population estimates include the current year's foals which do not count towards the AML.

Achieving the lower limit of AML for wild horses in the Complex would allow for more rapid recovery of vegetation that has been heavily utilized, especially riparian areas. Additional stress to the wild horses due to the fertility control implementation would not occur since fertility control would not be applied.

Impacts of Alternative C: No Action Alternative (Defer Population Control)

Under this alternative, no wild horses or burros would be removed at this time, nor would fertility control treatment be implemented. As a result, wild horses would not be subject to any individual direct or indirect impacts described in the Proposed Action as a result of a gather operation. Following foaling in 2007, wild horse populations would be expected to grow to about 2,564 wild horses. Projected population increases would result in minimal potential for inbreeding over the long-term, but would be expected to result in further deterioration of the range, and eventually lead to long-term impacts to both the health of the rangeland and the wild horse herds. Competition for the available forage and water resources would continue to increase as growing numbers of wild horses compete for the available forage and water resources. Lactating mares, foals, and older animals would be affected most severely. Social stress would also be expected to increase among animals as they fight to protect their position at scarce forage and water sources. Potential for injuries to all age classes of animals would be expected to increase.

Areas closest to the water would experience severe utilization and degradation. Over time, the animals would also deteriorate in condition as a result of declining forage and increasing distances traveled to and from water to find forage. Many wild horses, especially mares with foals, would be put at risk through the following summer due to a lack of forage and water, or would be expected to move outside the HMA boundaries in search of food and water, potentially risking injury/death of animals and resulting in increasing damage to private and State lands.

Wilderness and Wilderness Study Areas

Affected Environment

Adobe Town Wilderness Study Area (WSA) lies within the ATSW Complex area and encompasses 85,710 acres. Until it is designated wilderness or released from further consideration by Congress, it is managed under the Interim Management Policy (IMP) for lands under wilderness review. Wild horses are considered an important attribute of the Adobe Town

WSA. Under the IMP, WSAs are managed to preserve their wilderness character (naturalness, solitude, and opportunities for primitive recreation) and suitability for designation as wilderness.

Fundamental to this preservation is prohibition of new surface disturbance or permanent structures so that the WSA retains the character of an area untrammeled by man. If designated wilderness, the WSA would be managed in accordance with the Wilderness Act of 1964.

Environmental Consequences

Impacts of Alternative A: Proposed Action - Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

The suitability of the WSA for wilderness designation would be unimpaired (not affected).

Impacts of Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol

The suitability of the WSA for wilderness designation would be unimpaired (not affected).

Impacts of Alternative C: No Action Alternative (Defer Population Control)

Impacts of an increased wild horse herd size would decrease the naturalness of the WSA and therefore impair its suitability for designation as wilderness. Impacts on the naturalness of the WSA could come in many forms, primarily in the form of excessive erosion due to increased horse traffic and reduced soil stabilizing vegetative cover, and a change in the number of members of other species displaced by the increased competition for resources. If no gathers occurred, the horses might well expand their territories far beyond the Complex's boundaries to get the resources they need, proportionately reducing their impacts on the WSA, but the herd would likely continue to occupy traditional territories until absolutely necessary, thus having a detrimental effect on the WSA in the short term as well as long-term.

Livestock Grazing

Affected Environment

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. Thirteen of the 588 grazing allotments in the RFO jurisdiction occur within the Adobe Town HMA. Eight of the 80 grazing allotments in the RSFO jurisdiction occur within the Salt Wells Creek HMA. The current status of livestock grazing in the ATSW Complex is depicted in Appendix IV. 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 occurs mostly within the winter period while the cattle grazing is 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. Some sheep operators have expressed interest in converting their idle sheep grazing use into active cattle grazing.

Environmental Consequences

Impacts of Alternative A: Proposed Action - Remove Excess Animals (Lower Limit of AML range); Implement Two-Year Fertility Control Protocol

The proposed gather would not directly impact livestock operations within the allotments within the gather area. Operations involved in removing wild horses and burros may temporarily cause some disturbance to livestock present during the removal process. Livestock owners within the area of impact would be notified prior to the gather, enabling them to take precautions and avoid conflict with livestock.

An expected 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.

Impacts of Alternative B: Remove Excess Animals (Lower Limit of AML range) without Fertility Control Protocol

Under Alternative B, the impacts associated with capture and removal operations are expected to be similar to the proposed action.

Impacts of Alternative C: No Action Alternative (Defer Population Control)

Under Alternative C, wild horse population control methods would not be implemented. This alternative would allow wild horse populations to increase within the project area and nearby non-HMA 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 due to increased numbers of wild horses and their potential damage to existing fencing. This would have a negative economic impact on livestock producers. Range conditions throughout the area would deteriorate. These impacts would be cumulative over time.

Cumulative Impacts

The National Environmental Policy Act (NEPA) regulations define cumulative impacts as impacts on the environment that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past, Present, and Reasonably Foreseeable Actions

The Past, Present, and Reasonably Foreseeable Future Actions applicable to the assessment area are identified as the following:

Project -- Name or Description	Status (x)		
	Past	Present	Future
Livestock grazing	x	x	x
Wild Horse Gathers	x	x	x
Mineral Exploration / Oil and gas Exploration/Abandoned mine land reclamation	x	x	x
Recreation	x	x	x
Water and Spring development (wells, development of springs, & fencing water sources)	x	x	x
Invasive weed inventory/treatments	x	x	x
Wild Horse issues, AML adjustments and planning	x	x	x

Any future proposed projects within the ATSW Complex would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

Effect of Past, Present, and Reasonably Foreseeable Future Actions

All resource values listed in Table 3 (EA, page13) have been evaluated for cumulative impacts. If there are no direct or indirect impacts to said resources, there are likewise no expected cumulative impacts. The following critical elements or other resources that were discussed in Elements of the Human Environment Present or Potentially Affected are evaluated in this section for cumulative effects:

Wildlife, Threatened and Endangered Species, Special Status Species, and Migratory Birds

Historic use by livestock, wild horse grazing, recreation, mineral exploration, mining and vegetation harvesting have likely impacted wildlife, special status species, and migratory bird habitat within the ATSW Complex, especially near water locations. These activities result in loss of habitat and disruption of movement patterns. The current overpopulation of wild horses is also impacting wildlife habitat by increasing the competition for available forage and water. Alternatives A & B would not contribute to cumulative impacts associated with impediments to wildlife movement. Cumulative impacts associated with the Alternatives A & B, such as

construction of other water projects and invasive weed treatments are beneficial for wildlife and wildlife habitat. These projects/activities are implemented to enhance rangeland condition which benefit wildlife species and associated habitat.

The black-footed ferret, Canada lynx, bald eagle, grey wolf, and Ute ladies'-tresses are the identified Threatened or Endangered species that could potentially be found within the ATSW Complex. Trap sites for wild horses will be located in areas that are previously disturbed areas or in locations be approved by BLM Biologist to ensure that these species are not negatively affected by Alternatives A & B.

The cumulative impacts associated with implementation of Alternatives A & B would lead to overall improvement of rangeland resources and wildlife habitat. Under Alternatives A & B, wild horse populations would be managed within the AML range over the next 3-4 year period. As a result, fewer wild horses would be present and the quality and quantity of these resources would be expected to improve. When combined with past, present, and reasonably foreseeable future actions, and the identified mitigation measures, the potential for significant adverse cumulative impacts to wildlife habitat from implementation of Alternatives A & B would be negligible.

No long-term cumulative benefits to any rangeland user would be expected with implementation of the No Action Alternative. The No Action Alternative would be expected to result in continued range deterioration, and lead to long-term adverse impacts to range and riparian health. Once long-term range and riparian health is impacted, any reasonably foreseeable projects or other management actions are unlikely to improve habitat for wildlife, sensitive species, or other values.

Livestock Grazing, Vegetation and Soils

The vegetation within the ATSW Complex has been utilized by wild horses since the project area was first settled. Domestic livestock has grazed all portions of the Complex in the past and is expected to continue in the future. Some of the range has a history of over-utilization. Water has always been the limiting resource for wild horses within the ATSW Complex. As a result, vegetation and soils located near streams and springs tends to be heavily utilized and trampled. Lack of adequate water in portions of the project area has prevented wide-spread utilization by wild horses.

Implementation of Alternatives A & B would contribute to isolated areas of vegetation disturbance through the gather activities. In the long term, however, the achievement of AML in conjunction with proper grazing management and other foreseeable actions such as recreation, mineral exploration, vegetation harvesting and invasive weed treatment, would contribute to improved vegetative resources.

Implementation of Alternatives A & B would be expected to promote improvements to ecological condition. Excessive use by wild horses would not occur at riparian areas or outside the ATSW Complex once AML is achieved and maintained. Key forage and browse species would improve in health, abundance and robustness, and would be more likely to set seed and

reproduce, which in turn would contribute to improvements in rangeland health. The proposed population control and other foreseeable actions would begin to offset past negative trends in habitat modification by allowing for attainment of rangeland health standards and site-specific management objectives.

Implementation of the No Action Alternative would result in continued degradation of vegetation by wild horses. In the long term, this would cause native vegetation to be replaced by less palatable native plants or invasive species such as cheatgrass or noxious weeds. Past impacts would not be offset and downward trends would continue to occur.

Recreation

Recreational uses have occurred throughout ATSW Complex since the surrounding areas were first settled. Recreational uses are increasing and expanding to new areas throughout the area. As a result, the need for recreational planning has increased. Recreational planning allows land management agencies to work to balance the resource needs with the demand for a variety of recreation uses which the public can enjoy within the ATSW Complex.

Implementation of Alternatives A & B would allow for continued viewing of wild horses. The aesthetic values provided in association with a variety of recreational opportunities would also be enhanced as the quantity and quality of vegetation within the area improves.

Implementation of the No Action Alternative would allow for recreational opportunities as they currently exist. Viewing opportunities of wild horses would be greater under this alternative; however, heavy utilization of vegetation would continue to occur, impacting the aesthetic values associated with various recreational opportunities. As animal health declines or animals leave the HMAs in search of food and water, some recreational opportunities would be less enjoyable.

Wild horses

Numerous gathers of wild horses have occurred throughout the ATSW Complex in the past. The most recent gather of wild horses was in August and September 2005; this gather was necessary to bring the existing wild horse population in line with population goals. Visual observations and data collected during past gather operations within the ATSW Complex indicate the current wild horse population has a normal age and sex ratio. Fertility control has not been implemented in the past. Genetics testing has been completed in the Complex and the results indicate that the existing wild horse population is in good genetic health with no risks of inbreeding.

Past activities which may have affected wild horses within the ATSW Complex include recreational uses and livestock grazing. These activities can impact wild horses by reducing the quantity and quality of vegetation resources, as well as water quality and quantity. Past mineral and oil & gas activities and other small projects would have had temporary and isolated impacts to the wild horses.

Future activities which could occur include construction of water developments and spring exclosures, recreation and mineral and oil & gas exploration activities. The future may also

involve further adjustments to the AML (increases or decreases), fertility control research and future gathers to achieve or maintain AML throughout the ATSW Complex.

All other foreseeable activities such as invasive weed treatment, vegetation harvesting etc. would likely result in negligible impacts to wild horses in the long term; this is because the areas of disturbance would be small compared to the overall size of the ATSW Complex. An overall lower population and density of wild horses across the landscape would allow for more rapid recovery of native vegetation that is currently degraded; it would also reduce or eliminate the potential for further degradation. Moreover, by managing wild horse populations within the AML range, the expected improvement in rangeland health would be expected to lead to improved body condition, healthier foals, and ensure herd sustainability through drought years.

Implementation of Alternatives A & B would benefit wild horses in the long term because there would be improved quality and quantity of resources (forage, water, cover, and space). Future offspring would also benefit from these improved resources; they would be expected to be larger, healthier, and better able to achieve their genetic potential. The application of fertility control and removals to the lower limit of the AML in the Proposed Action would slow population growth over the next 2-3 year period thereby further reducing the impact to the vegetation over a longer period of time. Under Alternative B, the ATSW Complex would be gathered to the lower limit of the AML and the population would be allowed to grow at normal rates thus the vegetation recovery would be expected to be slower than that of the Proposed Action because grazing pressure would increase at a faster rate following the removal of excess horses.

Under Alternatives A & B, continued monitoring and data collection would be needed assess whether healthy and self-sustaining wild horse herds are being maintained on the Complex over the long-term. Monitoring of the project area will continue for wild horses as well as vegetation and water resources. Further evaluation is needed to determine if the ATSW Complex is meeting the standards for rangeland health.

Under the No Action Alternative, there would be no long-term cumulative benefits to any rangeland user. Future generations of wild horses would experience continued range deterioration and loss of water sources and riparian habitat. At the current rate of annual population growth, the projected wild horse population would exceed 4,500 animals within 5 years. Left unchecked, irreparable damage to the habitat could result in the need to permanently remove all wild horses from the ATSW Complex.

Wilderness and Wilderness Study Areas

FLPMA requires BLM to manage WSA's in a manner so as not to impair the suitability of such areas for preservation as wilderness. This is referred to as the non-impairment mandate. Under the IMP, wild horse populations must be managed at appropriate management levels to ensure a thriving natural ecological balance.

Alternative A & B would allow for wilderness and wilderness study areas to be managed as mandated and required. During gather operations portions of the wilderness or WSA maybe flown over looking for wild horses. These areas will be avoided for trap construction and

landing of the helicopter. Flying in these areas will be minimized to insure that wilderness qualities are not impaired.

The No Action Alternative could lead to wild horses moving into areas of the wilderness or WSAs looking for food, water, space and cover as traditional use area and home ranges are becoming crowded. This alternative would potentially lead to management techniques that degrade the wilderness characteristics, and populations that are not within appropriate management levels and not ensuring that thriving natural ecological balances are being achieved.

Summary of Past, Present, and Reasonably Foreseeable Future Actions

The area affected by the Proposed Action and Alternative B is the area in and around the ATSW Complex including the Adobe Town HMA and Salt Wells Creek HMA. Please refer to Figure 1 which displays a map of the affected area. Past, proposed and reasonably foreseeable actions that may impact the ATSW Complex wild horse herd could include past and future wild horse gathers and the initial application of fertility control. Over time, as wild horse population levels are maintained within the AML range, a thriving natural ecological balance would also be achieved and maintained.

Other reasonably foreseeable actions within the affected area may include mining, oil & gas exploration, recreational activities, livestock grazing, range improvements, and vegetation monitoring. The BLM would continue to conduct the necessary monitoring to periodically evaluate the effects of grazing use by wild horses, livestock, and wildlife, and determine if progress is being made in the attainment of Standards for Rangeland Health. Monitoring would be in accordance with BLM policy as outlined in the *Wyoming Rangeland Monitoring Handbook* and other BLM technical references. However, cumulative beneficial effects from the Proposed Action and Alternative B are expected and would include continued improvement of the range condition and riparian-wetland condition, which in turn positively impact wildlife, wild horse populations, and forage availability and quality is maintained and improved. Water quality and riparian habitat would also continually improve.

Under the No Action Alternative, wild horse populations would continue to increase and cause impacts to the wildlife habitat from the periodic excessive use by wild horses at riparian areas and in rangeland vegetation. Direct cumulative impacts of the No Action Alternative, coupled with the impacts from past, present, and reasonably foreseeable actions, would preclude any improvement to the health of vegetative communities and the ecological condition of the range as a whole. As a result, the No Action Alternative coupled with many of the past, present, and reasonably foreseeable actions would hinder success in attaining RMP objectives and Standards for Rangeland Health.

Mitigation Measures and Suggested Monitoring

The ATSW Complex would continue to be monitored post-gather. Data would be collected which would assist BLM in determining whether existing AMLs are appropriate or need future adjustment (either up or down). Data collected would include observations of animal health and condition, climate (precipitation), grazing utilization and animal distribution, population census, range condition and trend, among other items.

Proven mitigation and monitoring are incorporated into the proposed action through standard operating procedures, which have been developed over time. These SOPs (Appendix I and II) represent the "best methods" for reducing impacts associated with gathering, handling, transporting, collecting herd data and applying fertility control.

Public Involvement, Consultation and Coordination

A public hearing is held annually on a state-wide basis regarding the use of helicopters and motorized vehicles to capture wild horses or burros. During this meeting, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses or burros. The Wyoming State BLM Office held the annual meeting on August 9, 2006; there was no public attendance to the hearing.

References

□ Field Trial Plan Wild Horse Fertility Control, October 2003, Francis Singer et al.

Appendix I

Standard Operating Procedures for Wild Horse Gathers

Gathers would be conducted by utilizing contractors from the Wild Horse Gathers-Western States Contract, or BLM personnel. The following procedures for gathering and handling wild horses would apply whether a contractor or BLM personnel conduct a gather. For helicopter gathers conducted by BLM personnel, gather operations will be conducted in conformance with the *Wild Horse Aviation Management Handbook* (March 2000).

Prior to any gathering operation, the BLM will provide for a pre-capture evaluation of existing conditions in the gather area(s). The evaluation will include animal conditions, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with wilderness boundaries, the location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine whether the proposed activities will necessitate the presence of a veterinarian during operations. If it is determined that capture operations necessitate the services of a veterinarian, one would be obtained before the capture would proceed. The contractor will be apprised of all conditions and will be given instructions regarding the capture and handling of animals to ensure their health and welfare is protected.

Trap sites and temporary holding sites will be located to reduce the likelihood of undue injury and stress to the animals, and to minimize potential damage to the natural resources of the area. These sites would be located on or near existing roads.

The primary capture methods used in the performance of gather operations include:

1. Helicopter Drive Trapping. This capture method involves utilizing a helicopter to herd wild horses into a temporary trap.
2. Helicopter Assisted Roping. This capture method involves utilizing a helicopter to herd wild horses or burros to ropers.
3. Bait Trapping. This capture method involves utilizing bait (water or feed) to lure wild horses into a temporary trap.

The following procedures and stipulations will be followed to ensure the welfare, safety and humane treatment of wild horses in accordance with the provisions of 43 CFR 4700.

A. Capture Methods used in the Performance of Gather Contract Operations

1. The primary concern of the contractor is the safe and humane handling of all animals captured. All capture attempts shall incorporate the following:

   All trap and holding facilities locations must be approved by the Contracting Officer's Representative (COR) and/or the Project Inspector (PI) prior to construction. The Contractor may also be required to change or move trap locations as determined by the

COR/PI. All traps and holding facilities not located on public land must have prior written approval of the landowner.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

    a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.

    b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes.

    c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.

    d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses

    e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking gates.

4. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.

5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.

6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due

to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the capture area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.

7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.

8. It is the responsibility of the Contractor to provide security to prevent loss, injury or death of captured animals until delivery to final destination.

9. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if injured animals must be destroyed and provide for destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.

10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

B. Capture Methods That May Be Used in the Performance of a Gather

1. Capture attempts may be accomplished by utilizing bait (feed or water) to lure animals into a temporary trap. If the contractor selects this method the following applies:

a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.

b. All trigger and/or trip gate devices must be approved by the COR/PI prior to capture of animals.

c. Traps shall be checked a minimum of once every 10 hours.

2. Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If the contractor selects this method the following applies:

a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one hour.

b. The contractor shall assure that foals shall not be left behind, and orphaned.

3. Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If the contractor with the approval of the COR/PI selects this method the following applies:

a. Under no circumstances shall animals be tied down for more than one hour.

b. The contractor shall assure that foals shall not be left behind, or orphaned.

c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

C. Use of Motorized Equipment

1. All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The Contractor shall provide the COR/PI with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.

2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.

3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting

animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.

4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the COR/PI.

5. Floors of tractor-trailers, stock trailers and loading chutes shall be covered and maintained with wood shavings to prevent the animals from slipping.

6. Animals to be loaded and transported in any trailer shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. The following minimum square feet per animal shall be allowed in all trailers:

   11 square feet per adult horse (1.4 linear foot in an 8 foot wide trailer);
   8 square feet per adult burro (1.0 linear foot in an 8 foot wide trailer);
   6 square feet per horse foal (.75 linear foot in an 8 foot wide trailer);
   4 square feet per burro foal (.50 linear feet in an 8 foot wide trailer).

7. The COR/PI shall consider the condition and size of the animals, weather conditions, distance to be transported, or other factors when planning for the movement of captured animals. The COR/PI shall provide for any brand and/or inspection services required for the captured animals.

8. If the COR/PI determines that dust conditions are such that the animals could be endangered during transportation, the Contractor will be instructed to adjust speed.

D. Safety and Communications

1. The Contractor shall have the means to communicate with the COR/PI and all contractor personnel engaged in the capture of wild horses utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.

a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the contracting officer or COR/PI violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.

b. The Contractor shall obtain the necessary FCC licenses for the radio system

c. All accidents occurring during the performance of any task order shall be immediately reported to the COR/PI.

2. Should the contractor choose to utilize a helicopter the following will apply:

a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.

b. Fueling operations shall not take place within 1,000 feet of animals.

G. Site Clearances

Personnel working at gather sites will be advised of the illegality of collecting artifacts.

Prior to setting up a trap or temporary holding facility, BLM will conduct all necessary clearances (archaeological, T&E, etc). All proposed site(s) must be inspected by a government archaeologist. Once archaeological clearance has been obtained, the trap or temporary holding facility may be set up. Said clearance shall be arranged for by the COR, PI, or other BLM employees.

Gather sites and temporary holding facilities would not be constructed on wetlands or riparian zones.

H. Animal Characteristics and Behavior

Releases of wild horses would be near available water. If the area is new to them, a short-term adjustment period may be required while the wild horses become familiar with the new area.

I. Public Participation

Opportunities for public viewing (i.e. media, interested public) of gather operations will be made available to the extent possible, however, the primary consideration will be to protect the health and welfare of the animals being gathered. The public must adhere to guidance from the on site

BLM representative. It is BLM policy that the public will not be allowed to come into direct contact with wild horses or burros being held in BLM facilities. Only authorized BLM personnel or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at anytime or for any reason during BLM operations.

J. Responsibility and Lines of Communication

Rock Springs Field Office - Contracting Officer's Representative/Project Inspector
Jay D'Ewart

Rawlins Field Office - Contracting Officer's Representative/Project Inspector

Wyoming State Office - Contracting Officer's Representative/Project Inspector
Alan Shepherd

The Contracting Officer's Representatives (CORs) and the project inspectors (PIs) have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Rawlins and Rock Springs Assistant Field Managers for Renewable Resources and the Rawlins and Rock Springs Field Managers will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office, and Rock Springs & Canon City Corral offices. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

All publicity, formal public contact and inquiries will be handled through the Assistant Field Managers for Renewable Resources. These individual will be the primary contact and will coordinate the contractor with the BLM Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

The contract specifications require humane treatment and care of the animals during removal operations. These specifications are designed to minimize the risk of injury and death during and after capture of the animals. The specifications will be vigorously enforced.

Should the Contractor show negligence and/or not perform according to contract stipulations, he will be issued written instructions, stop work orders, or defaulted.

APPENDIX II

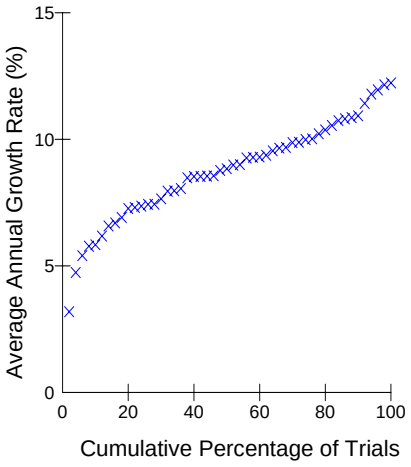
Standard Operating Procedures for Fertility Control Treatment

The following management and monitoring requirements are part of the Proposed Action:

- PZP vaccine would be administered by trained BLM personnel.
- The fertility control drug is administered with two separate injections: (1) a liquid dose of PZP is administered using an 18 gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14 gauge needle. These are loaded on the end of a trocar (dry syringe with a metal rod) which is loaded into the jabstick which then pushes the pellets into the breeding mares being returned to the range. The pellets and liquid are designed to release the PZP over time similar to a time release cold capsule.
- Delivery of the vaccine would be as an intramuscular injection while the mares are restrained in a working chute. 0.5 cubic centimeters (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 loaded into the jabstick for the second injection. With each injection, the liquid and pellets would be propelled into the left hind quarters of the mare in the area prepared for the identification freeze-mark.
- All treated mares would be freeze-marked on the hip to enable researchers to positively identify the animals during the research project as part of the data collection phase.
- At a minimum, monitoring of reproductive rates using helicopter flyovers will be conducted in years 2 through 4 by checking for presence/absence of foals. The flight scheduled for year 4 will also assist in determining the percentage of mares that have returned to fertility. In addition, field monitoring will be routinely conducted as part of other regular ground-based monitoring activities.
- A field data sheet will be used by the field applicators to record all the pertinent data relating to identification of the mare (including a photograph when possible), date of treatment, type of treatment (1 or 2 year vaccine, adjuvant used) and HMA, etc. The original form with the data sheets will be forwarded to the authorized officer at NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.
- A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and state along with the freeze-mark applied by HMA.
- The field office will assure that treated mares do not enter the adoption market for three years following treatment. In the rare instance, due to unforeseen circumstance, treated mare(s) are removed from an HMA before three years has lapsed, they will be maintained in either a BLM facility or a BLM-contracted long term holding facility until expiration of the three year holding period. In the event 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 program or sent to a long-term holding facility.

APPENDIX III
Results of WinEquus Population Modeling

POPULATION MODELING RUNS WITH REMOVALS
AND FERTILITY CONTROL

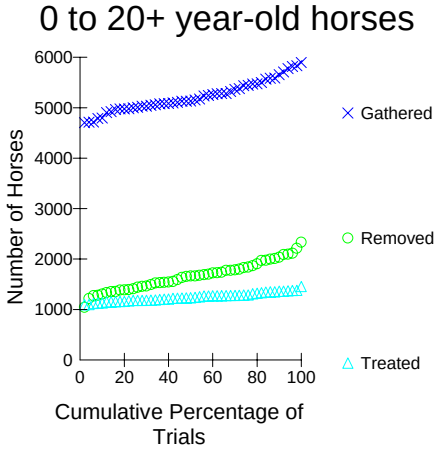


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	758	1261	2220
10th Percentile	944	1302	2248
25th Percentile	1023	1360	2301
Median Trial	1074	1398	2372
75th Percentile	1126	1456	2672
90th Percentile	1162	1493	2875
Highest Trial	1184	1540	3369

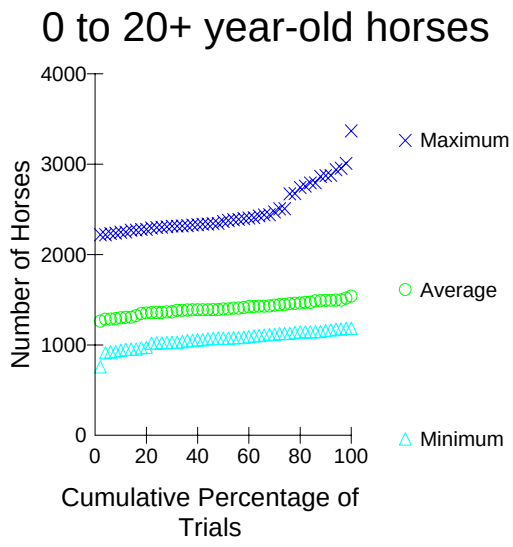
- 0 to 20+ year-old horses

(In ½ of the trails minimum population size in 11 yrs < 1,074 and the maximum was < 2,372. Average population size in 11 yrs ranges from 1,261 to 1,540.)



Average Growth Rate in 10 Years

Lowest Trial	3.2
10th Percentile	6.0
25th Percentile	7.4
Median Trial	8.9
75th Percentile	10.0
90th Percentile	11.2
Highest Trial	12.2

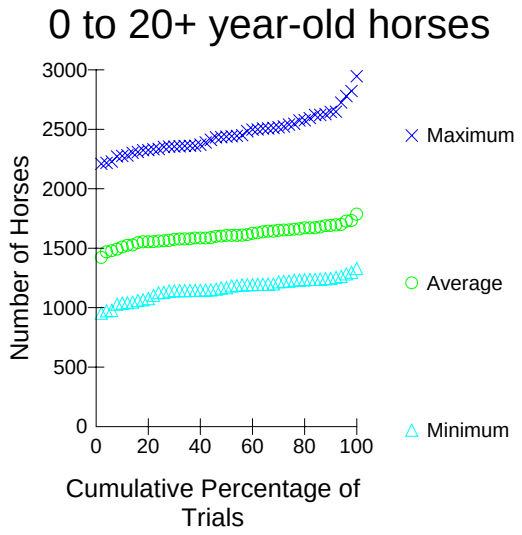


Totals in 11 Years*

	Gathered	Removed	Treated
Lowest Trial	4704	1045	1095
10th Percentile	4850	1322	1140
25th Percentile	5010	1443	1179
Median Trial	5144	1664	1236
75th Percentile	5445	1842	1286
90th Percentile	5682	2064	1361
Highest Trial	5897	2336	1454

* 0 to 20+ year-old horses

POPULATION MODELING RUNS WITH REMOVALS ONLY

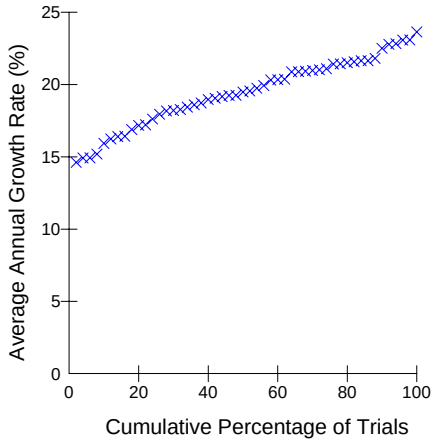


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	953	1422	2210
10th Percentile	1039	1517	2279
25th Percentile	1129	1562	2352
Median Trial	1175	1607	2440
75th Percentile	1232	1659	2547
90th Percentile	1250	1694	2648
Highest Trial	1329	1786	2947

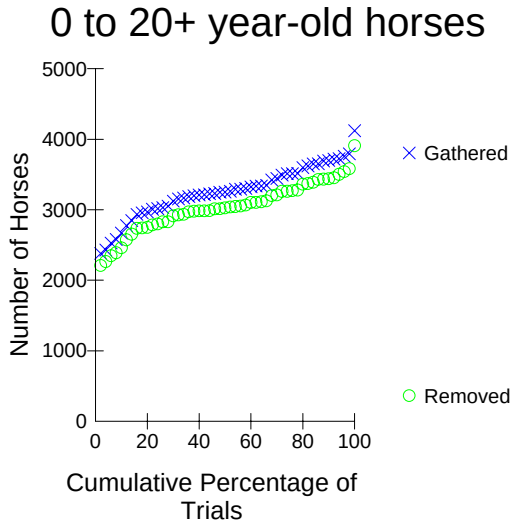
- 0 to 20+ year-old horses

(In ½ of the trails minimum population size in 11 yrs < 1,175 and the maximum was < 2,440. Average population size in 11 yrs ranges from 1,422 to 1,786.)



Average Growth Rate in 10 Years

Lowest Trial	14.6
10th Percentile	16.1
25th Percentile	17.9
Median Trial	19.5
75th Percentile	21.4
90th Percentile	22.6
Highest Trial	23.6

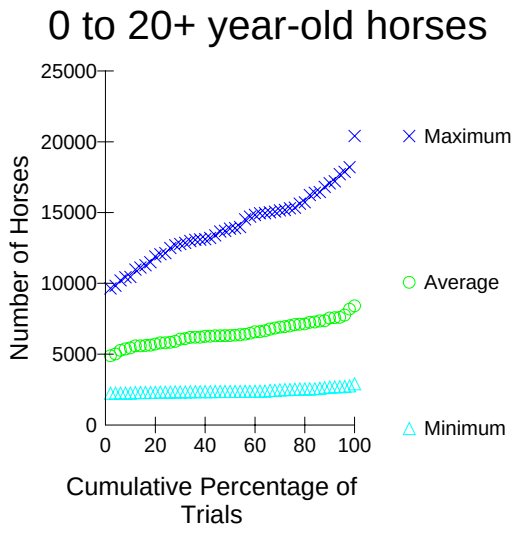


Totals in 11 Years*

	Gathered	Removed
Lowest Trial	2381	2208
10th Percentile	2722	2516
25th Percentile	3031	2829
Median Trial	3257	3032
75th Percentile	3514	3271
90th Percentile	3708	3446
Highest Trial	4121	3908

* 0 to 20+ year-old horses

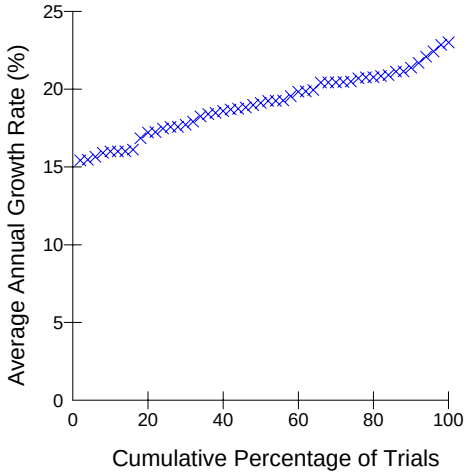
POPULATION MODELING RUNS WITH NO REMOVALS



Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	2244	4884	9641
10th Percentile	2268	5506	10712
25th Percentile	2325	5825	12498
Median Trial	2360	6317	13881
75th Percentile	2528	7076	15346
90th Percentile	2676	7561	17139
Highest Trial	2910	8409	20409

* 0 to 20+ year-old horses
(In ½ of the trails the minimum population size in 11 yrs < than 2,360 and the maximum was < 13,881. Average population size in 11 yrs ranges from 4,884 to 8,409.



Average Growth Rate in 10 Years

Lowest Trial	15.4
10th Percentile	16.0
25th Percentile	17.6
Median Trial	19.2
75th Percentile	20.7
90th Percentile	21.5
Highest Trial	23.0

APPENDIX IV

Livestock Grazing Status within ATSW Complex

TABLE 8a ADOBE TOWN HMA LIVESTOCK PREFERENCE

Grazing Allotment	Allot. #	Number of Operators	Active Preference (AUMs)	Type use	Seasons
ADOBE TOWN	10502	1	1820	Sheep	Winter
CONTINENTAL	10506	1	2830	Cattle	Summer
COW CREEK	10509	1	2629	Cattle	Summer
				Sheep	Winter
CROOKED WASH	10510	1	87	Cattle	Summer
ESPITALIER	10511	1	2775	Cattle	Summer
GRINDSTONE SPRINGS	10512	1	413	Sheep	Winter
LITTLE POWDER MOUNTAIN	10513	3	642	Cattle	Summer
			1341	Sheep	Fall, Spring
MANEOTIS CROOKED WASH	Administered by Craig, CO BLM (Hiawatha Tri-District)				
POWDER MOUNTAIN	10519	1	855	Cattle	Summer
				Sheep	Spring
RED CREEK	10521	1	2612	Cattle	Summer
				Sheep	Winter
ROTTEN SPRINGS	10523	3	622	Cattle	Spring
			145	Cattle	Summer
			661	Sheep	Winter
SAND CREEK	10524	1	2839	Sheep	Winter
				Cattle	Winter
WILLOW CREEK	10528	1	5362	Sheep	Winter
ROCK SPRINGS	Administered by Rock Springs BLM (see TABLE 8b below)				
TOTAL		19	25,001		

TABLE8b SALT WELLS CREEK HMA LIVESTOCK PREFERENCE					
Grazing Allotment	**Allot. #**	**Number of Operators**	**Active Preference (AUMs)**	**Type use**	**Seasons and Dates**
ROCK SPRINGS**#**	13018	22	108,093	Cattle And Sheep	Yearlong
CIRCLE SPRINGS	04001	1	946	Sheep Cattle	Summer Yearlong
RIFE	04002	1	508	Cattle	Spring-S-fall
VERMILION CREEK	04003	3	12,140	Cattle Sheep	Spring-S-fall Winter
HORSESHOE WASH	04006	1	607	Cattle Cattle Sheep	Spring Winter Winter
SALT WELLS	20507	1	1,189	Cattle	Summer-fall
CORSON SPRINGS	04009	2	2,618	Cattle	Summer-fall

Part of this allotment is in the Adobe Town HMA and part of it is in the Salt Wells Creek HMA.