United States Department of the Interior

BUREAU OF LAND MANAGEMENT
FILLMORE FIELD OFFICE
35 East 500 North
Fillmore, Utah 84631

TAKE PRIDE IN AMERICA

In Reply Refer to:
4720 (UTW02000)

June 11, 2010

Dear Reader:

Enclosed for your review and comment is the Preliminary Environmental Assessment (EA) for the Conger Mountain Complex Wild Horse Gather (DOI-BLM-UT-W020-2010-010-EA). This EA has been prepared to analyze the Bureau of Land Management (BLM) Fillmore Field Office proposal to gather and remove approximately 480 excess wild horses from within and outside the Confusion and Conger Mountain Herd Management Areas (HMAs) collectively referred to as the Conger Mountain Complex, beginning in about August 2010.

This document is tiered to the Warm Springs Proposed Resource Management Plan and Final Environmental Impact Statement (RMP/EIS), 1986 and the House Range Resource Area Final RMP/EIS, 1986. Should a determination be made that implementation of the proposed or alternative actions would not result in "significant environmental impacts" or "significant environmental impacts beyond those already addressed in the RMP/EIS", a Finding of No Significant Impact will be prepared to document that determination, and a Decision Record issued providing the rationale for approving the chosen alternative.

Comments on the Conger Mountain Complex Wild Horse Gather Plan Preliminary Environmental Assessment DOI-BLM-UT-W020-2010-010-EA will be accepted for 30 days until July 13, 2010. Interested individuals should mail written comments to the BLM Fillmore Field Office, 35 E 500 N, Fillmore, UT 84631 attn: Randy Beckstrand, Fillmore Field Assistant Manager or send an email to: utconger@blm.gov. Any other comments will not be accepted. The Preliminary EA is posted at www.ut.blm.gov/ and www.ut.blm.gov/ut/st/en/fo/filmore. Comments need to be post marked or emailed to utconger@blm.gov no later than 7-13-2010. If you have any questions on this matter, please contact Eric Reid, BLM Fillmore Field Office Wild Horse and Burro Specialist, at (775) 743-3114.

Sincerely,

Randy Beckstrand
Assistant Field Manager

Enclosure

U.S. Department of the Interior
Bureau of Land Management

Preliminary Environmental Assessment
DOI-BLM-UT-W020-2010-010-EA

Conger Mountain Complex
Wild Horse Gather Plan

U.S. Department of the Interior
Bureau of Land Management
West Desert District
Fillmore Field Office
35 East 500 North
Fillmore, Utah 84631

NATIONAL SYSTEM OF PUBLIC LANDS

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1.0 Purpose of and Need for the Proposed Action

1.1 Introduction

The Bureau of Land Management (BLM) is proposing to gather about 300 and remove approximately 250 excess wild horses from within and outside the Confusion Herd Management Area (HMA) and gather 260 and remove 230 excess wild horses from within and outside the Conger Mountain HMA beginning in about August 2010. Up to 50 of the captured wild horses from the Confusion HMA would be released; all of these would be studs to adjust the sex ratio and slow population growth. Within the Conger Mountain HMA, up to 30 of the captured wild horses would be released; of these, about 10 would be mares treated with fertility control and about 20 would be studs to adjust the sex ratio and slow population growth.

This Environmental Assessment (EA) is a site-specific analysis of the potential impacts that could result with the implementation of the Proposed Action or alternatives to the Proposed Action. Preparation of an EA assists the BLM authorized officer to determine whether to prepare an Environmental Impact Statement (EIS) if significant impacts could result, or a Finding of No Significant Impact (FONSI) if no significant impacts are expected.

This document is tiered to:

- Warm Springs Proposed Resource Management Plan and Final Environmental Impact Statement (RMP/EIS), 1986
- House Range Resource Area Final Environmental Impact Statement and Proposed Resource Management Plan (EIS/RMP), 1986.

Should a determination be made that the implementation of the proposed or alternative actions would not result in "significant environmental impacts" or "significant environmental impacts beyond those already addressed in the RMP/EIS's" a FONSI will be prepared to document that determination, and a Decision Record issued providing the rational for approving the chosen alternative.

1.2 Background

Confusion HMA

The Confusion HMA comprises about 293,660 acres of public and other land. The HMA is located in Juab and Millard Counties, about 30 miles north from Garrison, Utah. See Map 1.

The Appropriate Management Level (AML) for wild horses within the HMA is 70-115. The AML was established in the October/1987 House Range Resource Area RMP/ROD following an in-depth analysis of habitat suitability and resource monitoring and population inventory data, with public involvement. The AML upper limit is the maximum number of wild horses that can graze in a thriving natural ecological balance and multiple use relationship on the public lands in the area. Establishing AML as a population range allows for the periodic removal of excess animals (to the low range) and subsequent population growth (to the high range) between removals.

The current estimated population of wild horses is 368. This number is based on an aerial survey direct count population inventory, adjusting the number 20% to account for horses missed due to terrain and cover and for marker horses not seen, conducted in February, 2010 and includes the addition of the 2010 foal crops. Wild horse numbers have increased an average of 15 % per year since the HMA was last gathered. The current population is about 5 times over the AML lower limit.

The HMA was last gathered in September, 2004. At that time, 154 wild horses were gathered and removed from the HMA. Post-gather, an estimated 118 wild horses with a sex ratio of 70/30% males/females remained within the HMA.

Based upon all information available at this time, the BLM has determined that 250 excess wild horses exist within the HMA and need to be removed. This assessment is based on the following factors including, but not limited to

- A direct count of 243 wild horses, with an estimated 20% or 48 horses not counted due to terrain and cover, conducted in February, 2010 (see section 9.0) showed 221horses in excess of the AML lower limit. After the foaling season has ended it is expected to have a population of 349 wild horses (based on a 20% population increase), 279 horses in excess of the AML lower limit.
- Use by wild horses is exceeding the forage allocated to their use by 2.5 times based on allocations established in the October/1987 House Range Resource Area RMP/ROD.
- Utilization monitoring completed in 2009 documents increased utilization by wild horses on key forage species across the HMA.
- Wild horse numbers are increasing into areas outside the HMA not normally used.
- The rangeland health assessment completed in July, 2001 indicates wild horse overpopulation is contributing to the following standards not being met:
    - Riparian Areas - rangeland heath assessment (see section 9.0)states that three springs (Miller North 1, 2 & 3) in close proximity to each other are heavily used by horses.

Conger Mountain HMA

The Conger Mountain HMA comprises about 170,990 acres of public and other land. The HMA is located in Millard County, about 20 miles northeast from Garrison, Utah. See Map 2.

The Appropriate Management Level (AML) for wild horses within the HMA is 40-80. The AML was established in the April/1987 Warm Springs Resource Area RMP/ROD following an in-depth analysis of habitat suitability and resource monitoring and population inventory data, with public involvement. The AML upper limit is the maximum number of wild horses that can graze in a thriving natural ecological balance and multiple use relationship on the public lands in the area. Establishing AML as a population range allows for the periodic removal of excess animals (to the low range) and subsequent population growth (to the high range) between removals.

The current estimated population of wild horses is 291. This number is based on an aerial survey direct count population inventory, adjusting the number 20% to account for horses missed due to terrain and cover and for marker horses not seen, conducted in February, 2010 and includes the addition of the 2010 foal crops. Wild horse numbers have increased an average of 20% per year since the HMA was last gathered. The current population is about 7 times over the AML lower limit.

The HMA was last gathered in September, 2006. At that time, 141 wild horses were gathered, 123 removed, and 18 released back to the range. Post-gather, an estimated 60 wild horses with a sex ratio of 50/50% males/females remained within the HMA.

Based upon all information available at this time, the BLM has determined that 230 excess wild horses exist within the HMA and need to be removed. This assessment is based on the following factors including, but not limited to:

- A direct count of 203 wild horses, with an estimated 20% or 40 horses not counted due to terrain and cover, conducted in February, 2010 showed 163 horses in excess of the AML lower limit. After the

foaling season has ended it is expected to have a population of 291 wild horses (based on a 20% population increase), 250 horses in excess of the AML lower limit.

- ❒ Use by wild horses is exceeding the forage allocated to their use by 3 times.
- ❒ Utilization monitoring completed in (years) documents increased utilization by wild horses on key forage species within the wild horse crucial habitat area of the HMA.
- ❒ Utilization monitoring completed in 2004, 2007& 2009 (see section 9.0) documents heavy to severe utilization of forage within riparian habitats, and extensive trampling and trailing damage by wild horses. Riparian areas monitored:
  - o Conger Spring
  - o Willow Spring
  - o Skunk Springs

1.3 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to remove excess wild horses within the Conger Mountain Complex. Any wild horses located outside the HMAs (in areas not designated for their use) would also be removed. Fertility control would also be applied to the mares released following the gather of the Conger HMA and a 60% male sex ratio would be established by releasing a greater percentage of stallions. The Confusion HMA would have a 70% male sex ration established by releasing only studs.

This action is needed in order to achieve and maintain a population size within the established AML, protect rangeland resources from further deterioration associated with the current overpopulation, and restore a thriving natural ecological balance and multiple use relationship on public lands in the area consistent with the provisions of Section 3(b)(2) of the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA) 1.

1.4 Land Use Plan Conformance

The Action Alternatives are in conformance with the:

- ❒ Warm Springs Resource Area Resource Management Plan/Record of Decision Rangeland Program Summary (RMP/ROD), 1987, Chapter 2, p 29.
- ❒ House Range Resource Area Resource Management Plan/Record of Decision Rangeland Program Summary (RMP/ROD), 1987, Chapter 2, p 47.

1.5 Relationship to Laws, Regulations, and Other Plans

Statutes and Regulations

The Action Alternatives are in conformance with the WFRHBA (as amended), applicable regulations at 43 CFR § 4700 and BLM policies. Included are:

- ❒ **43 CFR 4710.3-1 Herd management areas.**
  Herd management areas shall be established for the maintenance of wild horse and burro herds. In delineating each herd management area, the authorized officer shall consider the appropriate management level for the herd, the habitat requirements of the animals, the relationships with other uses of the public and adjacent private lands, and the constraints contained in 4710.4. The authorized officer shall prepare a herd management area plan, which may cover one or more herd management areas.

1. The Interior Board of Land Appeals (IBLA) defined the goal for managing wild horse (or burro) populations in a thriving natural ecological balance as follows: "As the court stated in Dahl vs. Clark, supra at 594, the 'benchmark test' for determining the suitable number of wild horses on the public range is 'thriving natural ecological balance.' In the words of the conference committee which adopted this standard: 'The goal of WH&B management should be to maintain a thriving ecological balance (TNEB) between WH&B populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.'"

☐ **43 CFR 4710.4 Constraints on management.**
Management of wild horses and burros shall be undertaken with limiting the animals' distribution to herd areas. Management shall be at the minimum feasible level necessary to attain the objectives identified in approved land use plans and herd management area plans.

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

☐ **43 CFR 4740.1 Use of motor vehicles or aircraft.**
(a) Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner.
(b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made.

☐ All supplemental authorizations contained in Appendix 1 of the National NEPA Handbook 1790-1.

1.6 Decision to be Made

The authorized officer would determine whether to implement the proposed population control measures in order to achieve and maintain population size within the established AML and protect the range from deterioration resulting from the current wild horse overpopulation. The authorized officer's decision is limited to the need to remove excess wild horses and to implement fertility control and sex ratio adjustments to achieve and maintain population size within AML. It would not set or adjust AML nor would it adjust livestock use, as these were set through previous decisions.

The No Action Alternative would not achieve the identified Purpose and Need. However, it is analyzed in this EA to provide a basis for comparison with the other action alternatives, and to assess the effects of not conducting a gather at this time. The No Action Alternative in is violation of the requirement under the Wild Free-Roaming Horses and Burros Act that the Secretary remove excess horses, and in also not in conformance with regulatory provisions for management of wild horses and burros as set forth at 43 CFR § 4700.

1.7 Scoping and Identification of Issues

Consultation and coordination with BLM, State Historic Preservation Office (SHPO), the Utah Division of Wildlife Resources (UDWR), US Fish & Wildlife Service (USFWS), Native American Indian tribes and routine business contacts with livestock operators and others, has underscored the need for the BLM to maintain wild horse and burro populations within the AML.

The Proposed Action was posted on the Electronic Notification Bulletin Board (ENBB) December 16, 2009 for public notification. The Southern Utah Wilderness Alliance (SUWA) wrote in support of the proposed action as described in the ENBB.

The following issues were identified as a result of consultation/coordination and internal scoping relative to the BLM's management of wild horses in the planning area:

1. Impacts to individual wild horses and the herd. Measurement indicators for this issue include:

    - Expected impacts to individual wild horses from handling stress

- Expected impacts to herd social structure
- Expected effectiveness of proposed fertility control application
- Potential effects to genetic diversity
- Potential impacts to animal health and condition

2. A need to implement different or additional population control methods in order to maintain population size within AML over the long-term. Measurement indicators for the issue include:

- Projected population size and annual growth rate (WinEquus population modeling)
- Projected gather frequency
- Projected number of excess animals to be removed and placed in the adoption, sale, and short and long-term holding pipelines over the next 10 years

3. Impacts to vegetation/soils, riparian/wetland, and cultural resources (*as applicable*). Measurement indicators for this issue include:

- Expected forage utilization;
- Potential impacts to vegetation/soils and riparian/wetland resources.

4. Impacts to wildlife, migratory birds, and threatened, endangered, and special status species and their habitat (*as applicable*). Measurement indicators for this issue include:

- Potential for temporary displacement, trampling or disturbance
- Potential competition for forage and water over time.

2.0 Proposed Action and Alternatives

2.1 Introduction

This section of the EA describes the Proposed Action and alternatives, including any that were considered but eliminated from detailed analysis. Three alternatives are considered in detail:

- **Alternative 1** Confusion HMA: **Proposed Action** – Capture wild horses in order to remove 250 excess animals and establish a 70% male sex ratio.
- **Alternative 1** Conger Mountain HMA: **Proposed Action** – Capture wild horses in order to remove 230 excess animals, apply PZP-22 fertility control vaccine to released mares, and establish a 60% male sex ratio.
- **Alternative 2** Conger Complex: **Removal Only** (no fertility control or sex ratio adjustment).
- **Alternative 3** Conger Complex: **No Action** — Defer gather and removal.

The Proposed Action and Alternative 2 were developed to respond to the identified resource issues and the Purpose and Need to differing degrees. The No Action Alternative would not achieve the identified Purpose and Need. However, it is analyzed in this EA to provide a basis for comparison with the other action alternatives, and to assess the effects of not conducting a gather at this time. The No Action Alternative is in violation of the WFRHBA which requires the BLM to immediately remove excess wild horses.

2.2 Description of Alternatives Considered in Detail

2.2.1 Management Actions Common to Alternatives 1-2

- The Complex Gather would begin in about August, 2010 and take about 12 days to complete. Several factors such as animal condition, herd health, weather conditions, or other considerations could result in adjustments in the schedule.
- Gather operations involve areas beyond the HMA boundaries as displayed in Maps 1 and 2.
- Gather operations would be conducted in accordance with the Standard Operating Procedures (SOPs) described in the National Wild Horse and Burro Gather Contract (Appendix A). The primary gather (capture) methods would be the helicopter drive method with occasional helicopter assisted roping (from horseback).
- Trap sites and temporary holding facilities will be located in previously used sites or other disturbed areas whenever possible. Undisturbed areas identified as potential trap sites or holding facilities would be inventoried for cultural resources. If cultural resources are encountered, these locations would not be utilized unless they could be modified to avoid impacts to cultural resources.
- Gather operations in Wilderness Study Areas (WSAs) would be conducted by herding animals by helicopter to the temporary gather sites located outside WSA boundaries. No landing of aircraft would occur in WSAs except for emergency purposes and no motorized vehicles would be used in WSAs in association with the gather operation unless such use is consistent with the minimum requirements for management of WSAs and is preapproved by the authorized officer.
- An Animal and Plant Inspection Service (APHIS) or other veterinarian may be on-site during the gather, as needed, to examine animals and make recommendations to BLM for care and treatment of wild horses.
- Decisions to humanely euthanize animals in field situations will be made in conformance with BLM policy (Washington Office Instruction Memorandum 2009-041). Current policy reference: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-041.html
- Data including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may also be recorded, along with the disposition of that animal (removed or released).
- Hair samples would be collected on about 25-50 animals from each HMA to assess the genetic diversity of the herds. Samples would also be collected during future gathers as needed to determine whether BLMs management is maintaining acceptable genetic diversity (avoiding inbreeding depression).
- Excess animals would be transported to the BLM Delta Wild Horse Facility where they will be prepared (freeze-marked, vaccinated and de-wormed) for adoption, sale (with limitations) or long-term holding.
- A BLM contract Veterinarian, Animal and Plant Health Inspection Service (APHIS) Veterinarian or other licensed Veterinarian would be on site as the gather is started ad then as needed for the duration of the gather to examine animals and make recommendations to the BLM for the care and treatment of wild horses, and ensure humane treatment. Additionally animals transported to the BLM Delta Wild Horse Facility are inspected by facility staff and the BLM contract Veterinarian, to observe health and ensure the animals have been cared for humanely. Noxious weed monitoring at gather sites and temporary holding corrals would be conducted in the spring and summer of 2011 by BLM. Treatment would be provided, if necessary, following guidance from the Noxious Weed Control EA# J-010-099-015EA. Mitigation measures would be followed to eliminate the spread of noxious/invasive weeds as outlined in Noxious Weed Clearance Fillmore Field Office dated December 15, 2009.
- Monitoring of rangeland forage condition and utilization, water availability, aerial population surveys and animal health would continue.
- A comprehensive post-gather aerial population inventory would occur within 12 months following the completion of the gather operation. The inventory would be planned to include the Conger Complex and adjacent areas outside HMA boundaries.

2.2.2 Alternative 1a. Confusion HMA. Proposed Action

The Proposed Action would gather about 300 and remove approximately 250 excess wild horses from within and outside the Confusion Herd Management Area (HMA) beginning in about August, 2010. Animals would be removed using a selective removal strategy. Selective removal criteria for the HMA include: (1) First Priority: Age Class - Five Years and Younger; (2) Second Priority: Age Class - Six to Fifteen Years Old; (3) Third Priority: Age Class Sixteen Years and Older. Up to 50 of the captured wild horses would be released; all of these would be studs with the objective of establishing a 70%/30% male/female sex ratio. Studs would be selected to maintain a diverse age structure, herd characteristics and body type (conformation). Every effort would be made to release horses to the same general area from which they were gathered.

2.2.3 Alternative 1b. Conger Mountain HMA. Proposed Action

The Proposed Action would gather about 260 and remove approximately 230 excess wild horses from within and outside the Conger Mountain Herd Management Area (HMA) beginning in about August, 2010 Animals would be removed using a selective removal strategy. Selective removal criteria for the HMA include: (1) First Priority: Age Class - Five Years and Younger; (2) Second Priority: Age Class - Six to Fifteen Years Old; (3) Third Priority: Age Class Sixteen Years and Older. Up to 30 of the captured wild horses would be released; of these, about 10 would be mares treated with fertility control and about 20 would be studs as follows:

- Mares would be treated with a two-year Porcine Zona Pellucida (PZP-22) or similar vaccine and released back to the range. Fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, Appendix B). Mares would be selected to maintain a diverse age structure, herd characteristics and conformation (body type).
- Studs would be selected for release with the objective of establishing a 60%/40% male/female sex ratio. Studs would be selected to maintain a diverse age structure, herd characteristics and body type (conformation).
- Post-gather, every effort would be made to return released horses to the same general area from which they were gathered.

2.2.4 Alternative 2 Conger Complex: Removal Only -- Removal of excess wild horses

In addition to the actions described in Section 2.1.1, Alternative 2 would gather and remove about 230 - 250 excess wild horses from within and outside the Confusion Herd Management Area (HMA) and gather and remove about 210 -230 excess wild horses within and outside the Conger Mountain HMA beginning in about August, 2010 to achieve the low range AMLs for both HMAs. Fertility control would not be applied and no changes to the herds' existing sex ratios would be made. Post-gather sex ratios for the Confusion HMA would be expected to remain at 60%/40% males to females and for the Conger HMA 50%/50% males to females.

2.2.5 Alternative 3 Conger Complex: No Action

Under the No Action Alternative, no gather would occur and no additional management actions would be undertaken to control the size of the wild horse population at this time.

2.3 Summary Comparison of Alternatives

Table 1: Summary Comparison of the Alternatives

Item	Alternative 1: Proposed Action	Alternative 2	Alternative 3: No Action

Impacts to Wild Horses • Gather Number • Removal Number • Fertility Control - # Mares • Post-Gather Sex Ratio • Post-Gather Population Size	• Wild horses (gather and removal) would experience handling stress associated with gather operations which would vary by individual and intensity and range from nervous agitation to physical distress. • Mares treated with the PZP contraceptive would experience slightly higher stress levels from increased handling while being inoculated and freeze marked. These direct impacts would be minor and short in duration. • Sex ratio adjustments would slow the population increase of the herd reducing the need for more frequent gather and removal operations. • Post gather population would have access to adequate space, forage, water, cover and genetic diversity within HMAs for long-term existence.	• Impacts to wild horses gathered and removed would be the same as Alternative 1: Proposed Action • No impacts to wild horses from fertility control application. • Sex Ratios would remain as at the current levels for each HMA. • Post gather population would have access to adequate space, forage, water, cover and genetic diversity within HMAs for long-term existence.	• No impacts to wild horses from gather operations, fertility control or sex ratio adjustments. • Population levels would continue to rise above levels that the HMAs could sustain long term. Horses would expand outside established HMAs looking for forage, water, space and cover increasing impacts to those areas where there is no allocation for wild horse use.
Impacts to Vegetation/Soils and Riparian/Wetland Resources	• Utilizations levels on forage species would be within allocated levels. • Impacts to soils and riparian/wetland resources would be within expected and acceptable levels.	• Same as Alternative 1: Proposed Action	• Increased levels of utilization on vegetation resulting in the loss of ground cover which could attribute to the increased loss of soil through erosion. • Greater impacts to ACECs (Gandy Salt Marsh and Bishop Springs).
Impacts to Migratory Birds, Wildlife and TES	•Impacts to Migratory Birds, Wildlife and TES would be within in the acceptable levels identified in the approved planning documents. Competition levels and displacement of species would be lowered allowing for diversity to continue within HMAs.	• Same as Alternative 1: Proposed Action	Increased competition for available forage among wildlife species and potential increased impacted to areas outside HMAs which could impact other wildlife, migratory birds and TES.

2.4 Alternatives Considered but Dismissed from Detailed Analysis

2.4.1 Use of Bait and/or Water Trapping

It would not be timely, cost-effective or practical to use bait and/or water trapping as the primary gather method to remove the excess horses located within the Conger Mtn. Complex in order to achieve AML without risking increased degradation to the rangelands. As a result, this alternative was dismissed from detailed analysis.

2.4.2 Remove or Reduce Livestock within the HMA

This alternative was not considered in detail because it is contrary to previous decisions which allocated forage for livestock use. Such an action would not be in conformance with the existing land use plan, would be contrary to the BLM's multiple-use mission as outlined in the 1976 Federal Land Policy and Management Act (FLPMA), and would also be inconsistent with the WFRHBA, which directs the Secretary to immediately remove excess wild horses. Livestock grazing can only be reduced or eliminated following the process outlined in the regulations found at 43 CFR Part 4100. Such changes do not meet the need for the proposed action and are beyond the scope of the decision to be made, and cannot be made through a wild horse gather decision.

2.4.3 Gather the HMA to the AML Upper Limit

This alternative was dismissed from detailed study because AML would be exceeded the foaling season following the gather 2011. This would result in the need to follow up with another gather within one year, and in increased stress to individual wild horses and the herd and continuing resource damage due to wild horse overpopulation in the interim. Nor would this alternative be consistent with the WFRHBA, which upon determination excess wild horses are present, requires their immediate removal.

2.4.4 Fertility Control Treatment Only (No Removal)

Population modeling was completed to analyze the potential impacts associated with conducting gathers about every 3 years over the next 10 year period to treat captured mares with fertility control. Under this alternative, no excess wild horses would be removed. While the average population growth would be reduced to about 15 % per year, AML would not be achieved and the damage to the range associated with wild horse overpopulation would continue. This alternative would not meet the Purpose and Need for the Action, and would be contrary to the WFRHBA, and was dismissed from further study.

3.0 Affected Environment

This section of the EA briefly discusses the relevant components of the human environment which would be either affected or potentially affected by the Action Alternatives or No Action (refer to Table 2). Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred.

3.1 General Description of the Affected Environment

Confusion HMA

The Confusion HMA encompasses 255,752 acres of public and private land, within Juab and Millard Counties, Utah, (Map 1). The HMA includes the Confusion Range, Granite and Middle Mountains, and the Coyote Knolls topographic features. These ranges are made up of long, narrow and steep ridges with large flats areas around the Coyote Knolls. Elevation varies from 7200 feet to 4420 feet. Precipitation averages 4-6 inches at lower elevations to 6-8 inches at the highest elevations. Temperatures also vary, from 0 and -10 degrees Fahrenheit in winter to between 100 and 105degrees Fahrenheit in summer.

Vegetation in the area is made up of three main vegetative types. Saltbush-grass type, black sage-grass

type, and rabbit brush-grass type. There are a few juniper trees that occur on the tops of the low mountain ridges. Key species include indian ricegrass (*Oryzopsis hymenoides*), bottlebrush squirreltail (*Sitanion hystrix*), galletta (*Hilaria jamesii*), needleandthread (*Stipa comata*), sand dropseed (*Sporobolus cryptandrus*) and winterfat (*Ceratoides lanata*). Other forage species include:

Grasses	Forbs	Shrubs
Basin wildrye (*Elymus cinereus*)	Scarlet globemallow	Black sagebrush
(*Artemisia nova*)		
Muttongrass (*Poa fendleriana*)	(*Sphaeralcea coccinea*)	Shadscale (*Atriplex*
confertifolia)		
Western wheatgrass	Buckwheat (*Eriogonum*)	Ephedra (Ephedra
nevadensis)		
(*Agropyron smithii*)		Big sagebrush (*Artemisia*
tridentata)		
Mountain brome (*Bromus carinatus*)		Budsage (*Artemisia*
spinescens)		
Bluebunch wheatgrass		
(*Agropyron spicatum*)		
Prairie junegrass (*Koeleria macrantha*)		

Permanent waters are located along the west side of the HMS along the drainage bottom of Snake valley. These waters originate as springs in what is known locally as the "Salt Marsh". Horses also water at Coyote Springs which is located on the east side of the HMA in Tule Valley. There is a distance of 24 miles between the two permanent water sources. Water is also available occasionally at the Hole-in-the-Wall Reservoir located near the north boundary of the HMA. During the winter months the horses will utilize the snow on the Middle and Granite Mountains.

Conger Mountain HMA

The Conger Mountain HMA encompasses 151,506 acres of public and private land, within Millard County, Utah (Map 2). Topography within the HMA consists of Conger Mountain and the Conger Range within the Confusion Range with long narrow canyons typical of the Great Basin area. Elevation varies from 8070 feet to 5220 feet. Precipitation averages 4-6 inches at lower elevations to 8-10 inches at the highest elevations. Temperatures also vary, 0 and -10 degrees Fahrenheit in winter to between 100 and 105 degrees Fahrenheit in summer.

Vegetation in the area is made up of four main vegetative types, saltbush-grass type, black sage-grass type, rabbit brush-grass type, and juniper-pinyon-grass type. Key species include indian ricegrass (*Oryzopsis hymenoides*), bottlebrush squirreltail (*Sitanion hystrix*), galletta (*Hilaria jamesii*), needleandthread (*Stipa comata*), sand dropseed (*Sporobolus cryptandrus*) and winterfat (*Ceratoides lanata*). Other forage species include:

Grasses	Forbs	Shrubs
Basin wildrye (*Elymus cinereus*)	Scarlet globemallow	Black sagebrush
(*Artemisia nova*)		
Muttongrass (*Poa fendleriana*)	(*Sphaeralcea coccinea*)	Shadscale (*Atriplex*
confertifolia)		
Western wheatgrass	Buckwheat (*Eriogonum*)	Ephedra (Ephedra
nevadensis)		
(*Agropyron smithii*)		Big sagebrush (*Artemisia*
tridentata)		
Mountain brome (*Bromus carinatus*)		Budsage (*Artemisia*
spinescens)		
Bluebunch wheatgrass		
(*Agropyron spicatum*)		

Prairie junegrass (*Koeleria macrantha*)

Permanent water is available within the Conger HMA through several perennial springs which are Skunk and Willow Springs to the north, Knoll Springs to the West and Conger Spring in the middle of the HMA. Conger Spring is developed and piped to the south where it feeds a pond near the Little Valley Well.

3.2 Description of Affected Resources/Issues

Table 2 lists the elements of the human environment subject to requirements in statute, regulation, or executive order which must be considered.

Table 2: Supplemental Authorities (Critical Elements of the Human Environment)

Supplemental Authorities	Present	Affected	Rationale
ACECs	**Yes**	**NO**	The Gandy Salt Marsh ACEC lies on the western perimeter of the Confusion Herd Management Area. Reduction of herd size will reduce any impacts by wild horses and should improve aquatic and riparian habitat at the marsh for least chub and Columbia spotted frog
Air Quality	**YES**	**NO**	The planning area is outside a non-attainment area. Implementation of the Proposed Action would result in small and temporary areas of disturbance and associated dust emissions.
Cultural Resources	**YES**	**NO**	To prevent any impacts to cultural resources, trap sites and temporary holding facilities would be located in previously disturbed areas. Cultural resource inventory and clearance would be required prior to using trap sites or holding facilities outside existing areas of disturbance. (Refer to SHPO Project No. U-10-BL-0259b required item 12)
Environmental Justice	**YES**	**NO**	Implementation of the proposed action would not have a noticeable impact on environmental justice in Millard and Juab Counties.
Fish Habitat	**NO**	**NO**	Not present.
Floodplains	**NO**	**NO**	There are no flodplains that may be adversely impacted and the proposed action is in compliance with Executive Order 11988 on Floodplain Management
Forest and Rangelands	**YES**	**YES**	No impact to Forestry. Rangelands and Rangeland Health discussed below.
Migratory Birds	**NO**	**NO**	Given the low magnitude and short duration of the proposed action, no impacts to migratory birds are anticipated. Migratory birds may benefit from the reduction of herd numbers.
Native American Religious Concerns	**YES**	**NO**	Letters were sent to Tribes May 7, 2010. The Paiute Tribe of Utah sent a letter back stating they had no comments or concerns. Phone calls were made to the other tribes. Betsy Chapoose and Ed Navanjo were contacted and expressed no concerns. Corrina Bow and the Skull Valley Tribe could not be contacted.
Noxious Weeds	**YES**	**NO**	To prevent the risk for spread, any noxious weeds or non-native invasive weeds would be avoided when establishing and accessing trap sites and holding facilities.
Prime or Unique Farmlands	**NO**	**NO**	Not present.

Riparian-Wetland Zones	YES	NO	Reduction of the numbers of wild horses by implementation of the proposed action would result in reduced use of riparian vegetation by wild horses. Direct disturbance of riparian areas is not anticipated.
T&E Species	NO	NO	There are no known federally listed fish or wildlife species within the proposed wild horse gather operation.
Water Quality	YES	NO	There would be no impacts to water resources/quality.
Waste (Hazardous or Solid)	NO	NO	Not present.
Wild and Scenic Rivers	NO	NO	There are no Wild and Scenic Rivers within the proposed project location per PL111.11.
Wilderness and Wilderness Study Area	YES	NO	No direct disturbance in WSAs or Wilderness areas. Gather operations in Wilderness Study Areas (WSAs) would be conducted by herding animals by helicopter to the temporary gather sites located outside WSA boundaries.

Critical elements of the human environment identified as present and potentially affected by the Action Alternatives (Alternative 1-2) and/or the No Action Alternative include: Rangelands and Rangeland Health. In addition to the critical elements listed in Table 2, the following resources may be affected by the Action Alternatives and/or the No Action Alternative: Wild Horses and Livestock Grazing. The existing situation (affected environment) relative to these resources is described below.

3.2.1 Livestock

The Thousand Peaks, Coyote Knolls, Gandy, Cowboy Pass, Partoun, Skunk Springs, Ledger Canyon, Conger Spring, Buckskin, Painter Spring, and Browns Wash Allotments are within the Complex. There are a total of 18 livestock operators who are currently authorized to graze livestock in these allotments annually. The operators are authorized to use 40,021 Animal Unit Months (AUMs) of forage each year. An AUM is the amount of forage needed to sustain one cow, five sheep, or five goats for a month. The allotments consist of various pastures grazed in rest-rotation and deferred rotation grazing systems. The season of use may vary by 1-2 weeks annually based upon forage availability, drought conditions, and other management criteria.

The BLM allocated forage for livestock use through the House Range Resource Area RMP/ROD, 1987. AML was established as a population range 70 -115 in the House Range Resource Area Final EIS/RMP, 1986 and the Warm Springs Resource Area RMP/ROD, 1987. AML was established as a population range 40 - 80 in the Warm Springs RMP/EIS, 1986. Adjustments in permitted use have been made through Allotment Management Plans as conditions have changed such as drought and class of livestock changes.

Table 3 summarizes the livestock use information for the allotments in the HMA(s).

Table 3: Livestock Use Information

Allotment	Total Allotment Acres	% of Allotment in Complex	Permittee	Livestock	Authorized Season of Use	Authorized Livestock AUMs (Preference Entire Allotment)	Suspended AUMs or AUMs in (Nonuse Entire Allotment)
Thousand Peaks	332,022	78%	1	5945 Sheep	11/01 – 05/08		

				2350 Sheep	04/27 – 05/08	14895	3702
				1350 Cattle	10/28 – 05/25		
Coyote Knolls	49,434	9%	1	2200 Sheep	11/01 – 04/30	2331	
			2	22 Cattle	05/01 – 10/05	114	
Gandy	52,515	5%	1	105 Cattle	05/16 – 01/02	328	36
			2	488 Cattle	11/01 – 04/30	2759	307
Cowboy Pass	41,059	4%	1	1700 Sheep	11/01 – 04-30	1842	
			2	1063 Sheep	11/01 – 04/30	1266	
Partoun	71,983	4%	1	2350 Sheep	11/02 – 04/26	2213	
			2	45 Cattle	11/01 – 04/30		
				60 Cattle	06/16 – 10/15	1878	
				244 Cattle	11/01 – 04/30		
			3	27 Cattle	11/01 – 04/30	148	
			4	26 Cattle	11/01 – 04-30	158	
Skunk Springs	37,061	15%	1	1372 Sheep	11/09 – 04/15	1426	
			2	22 Cattle	05/10 – 10/15	115	42
Ledger Canyon	17,811	12%	1	1957 Sheep	11/16 – 04/15	1749	396
Conger Spring	70,425	34%	1	526 Sheep	11/01 – 5/10	581*	581*
				316 Cattle	11/01 – 5/10	1826	
Buckskin	21,898	14%	1	2062 Sheep	11/16 – 04/30	2264	
Browns Wash	26,112	17%	1	2017 Sheep	11/01 – 04/30	2003	
Painter Spring	33,486	8%	1	1947 Sheep	11/01 – 04/15	2125	708

*AUMs are the same. Operator does not use sheep AUMs 581 sheep AUMs in nonuse.

3.2.2 Rangeland Health Standards

The Standards for Rangeland Health indicate that the potential for soil erosion would be reduced (*Standard 1. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform*) and riparian areas would receive less grazing pressure which in turn would reduce the impacts to these riparian areas (*Standard 2. Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform*) and would contribute to the maintenance of desired species (*Standard 3. Desired species, including native, threatened, endangered and special-status species, are maintained at a level appropriate for the site and species involved*). Therefore, the potential for maintenance of rangeland health would be increased by removing the wild horses to keep their numbers on the HMA within the appropriate management level. If no action is taken, rangeland health will deteriorate in areas where wild horses spend most of their time. Riparian vegetation would be affected and soil erosion would increase as desired vegetation is removed from the range.

3.2.3 Wild Horses

The Confusion HMA was formally designated as a Herd Management Area (HMA) through the House Range Resource Area RMP/ROD, 1987. AML was established through site vegetation inventory monitoring and data collection as a population range 70 -115 in the House Range Resource Area Final EIS/RMP, 1986.

The Conger Mountain HMA was formally designated as a Herd Management Area (HMA) through the Warm Springs Resource Area RMP/ROD, 1987. AML was established through site vegetation inventory monitoring and data collection as a population range 40 - 80 in the Warm Springs RMP/EIS, 1986.

Table 4 summarizes the AML, current population, and estimated removal numbers for the HMA under the Proposed Action.

Table 4: Summary of Wild Horse Population Information

HMA	Acres	AML Range	Current Pop.	Proposed Target Gather	Proposed Target Remove	Target Treat (# Mares)	Adjust Sex Ratio (# Studs)	Est'd Post Gather Pop. Size
Confusion	293,660	70 - 115	368	300	250	0	50	115
Conger Mtn.	170,990	40 - 80	291	260	230	10	20	60

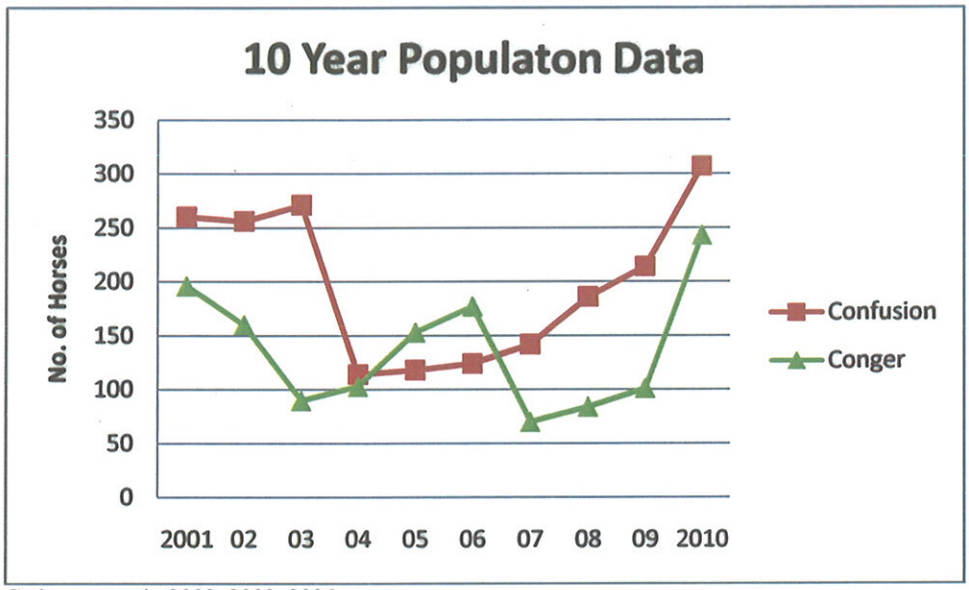
The last removal of excess wild horses from the Confusion HMA was completed in September, 2004 when 154 horses were gathered and removed. Following the gather, no horses were released leaving an estimated post-gather population of 114 animals (about 80 males and 34 females or a 70/30 % male/female sex ratio).

The current estimated population of wild horses in the Confusion HMA is based on a direct count aerial population survey completed in February, 2010. Analysis of these data indicates an average annual growth rate of 16% since the last gather.

Utilization levels by wild horses on the rangelands within the complex have shown increases as the population has increased. Potential for loss of key forage species has increased as the amount of sustainable forage is depleted through higher levels of use. The past two years have exhibited favorable climatic conditions that have had normal to above normal precipitation and cooler temperatures allowing key vegetative species to thrive. Drought events over the past ten years have shown the effects of limited resources for wild horses through body condition and range condition. Areas outside the complex are experiencing increased un-allotted use on forage species and resources by wild horses which have expanded outside the HMAs. These wild horses above AML need to be removed in order to protect the resources outside the complex and those resources within the complex to allow for proper rangeland health and herd sustainability.

The last removal of excess wild horses from the Conger Mountain HMA was completed in August, 2006 when 141 horses were gathered and 123 were removed. Following the gather, 11 mares and 7 stallions (a total of 18 animals) were released. The un-gathered population was estimated at 54 animals for a total estimated post-gather population of 72 animals (about 36 males and 36 females or a 50/50% male/female sex ratio).

The current estimated population of wild horses in the Conger Mountain HMA is based on a direct count aerial population survey completed in February, 2010. Analysis of these data indicates an average annual growth rate of 20% since the last gather.



Gather events in 2002, 2003, 2006

Wild horses within the Conger Complex are currently in moderately thin to moderate body class conditions or a body condition score (BCS) class 4 – 5 on the Henneke BCS chart. Increased utilization levels have been observed by wild horses within key areas, which adversely impacts range health and inhibits recovery of the native vegetative communities in these key areas. Monitoring also indicates that wild horses have moved and are residing outside the Confusion HMA boundaries.

The genetic variability of the Conger Mountain HMA is high. According to the "Genetic Analysis of the Conger, Ut HMA" conducted by Dr. E. Gus Cothran published June 30, 2009, "the values related to the allelic diversity in particular suggest a herd with highly mixed ancestry. This view is consistent with the similarity values seen and the heterozygosity measures. The herd ancestry most likely is from North American breeds."

Hair samples will be collected on both the Confusion and Conger HMAs to establish baseline genetic diversity for the Confusion HMA and to determine any changes in variation for the Conger Mountain HMA.

Table 5: Wild Horse Gather History

HMA	Fiscal Year	Captured	Removed	Released	Died/Euthanized
Confusion	1995	39	39	1	0
Conger	1995	58	58	5	0
Confusion	1997	93	83	10	0
Conger	2000	228	228	0	0
Confusion	2002	93	93	1	0
Conger	2002	115	97	21	1
Confusion	2004	158	158	10	1
Conger	2006	163	155	15	0

4.0 Environmental Consequences

4.1 Introduction

This section of the EA documents the potential environmental impacts which would be expected with implementation of the Action Alternatives (Alternatives 1-2), and/or the No Action Alternative. These include the direct impacts (those that result from the management actions) and indirect impacts (those that exist once the management action has occurred).

4.2 Predicted Effects of Alternatives

The direct and indirect impacts to these resources which would be expected to result with implementation of the Action Alternatives or No Action Alternative are discussed in detail below.

4.2.1 Livestock

Impacts Common to Action Alternatives (1-2)

A small number of livestock are permitted to graze during the summer months and gather activities could result in direct short-term impacts by disturbing and dispersing the livestock present. Reduced competition between livestock and wild horses for the available forage and water would also result. Indirect impacts would include an increase in the quality and quantity of the available forage in the short-term. Over the longer-term, improved vegetation resources would lead to a thriving natural ecological condition.

Impacts of Alternative 1 (Proposed Action) – None not in common with other Alternatives.

Impacts of Alternative 2 – None not in common with other Alternatives.

Impacts of Alternative 3 (No Action)

Utilization by authorized livestock has been directly impacted due to the current overpopulation of wild horses, both within and outside the complex. Livestock operators have been asked to take voluntary reductions due to the impacts of the wild horse population on range vegetation/forage conditions. The current wild horse population is 3-5 times above their forage allocation. Moderate to heavy utilization is occurring. The indirect impacts of No Action (Defer Gather and Removal) would be continued damage to the range, continuing competition between livestock, wild horses and wildlife for the available forage and water, reduced quantity and quality of forage and water, and undue hardship on the livestock operators who would continue to be unable to fully use the forage they are authorized to use.

4.2.2 Wild Horses

Results of Win Equus Population Modeling

The Action Alternatives (1-2) were modeled using Version 1.40 of the Win Equus population model (Jenkins, 2002). The purpose of the modeling was to analyze and compare the effects of the Action Alternatives on population size, average population growth rate, and average removal number. Table 6 summarizes the results. See Appendix C for additional detail.

Table 6: Average Population Size, Growth Rates, Next Projected Gather Year

Alternative	Ave. Pop. Size (6 years)	Ave. Growth Rate Next 5 Years (%)	Next Projected Gather (Year)	Est'd No. to Remove (Next Gather)
Alternative 1 - Proposed Action	110 / 108*	11.2% / 13.6%	2013 for both	100 / 115
Alternative 2 – Gather to Low AML (No fertility control or sex ratio adjustment).	103 / 95	10.8% / 24.2%	2017 / 2013	160 / 123

*First number represents the Confusion HMA and the second represents the Conger Mtn HMA

To summarize the results obtained by simulating the range of alternatives for the proposed Conger Complex wild horse gather, the original questions can be addressed.

Do any of the Alternatives "crash" the population?

None of the alternatives indicate that a "crash" is likely to occur to the population. Minimum population levels and growth rates are all within reasonable levels, and adverse impacts to the population are not likely. The lowest minimum population size for each alternative is above the level that genetic testing has indicated that important genetic variability in the herd could be lost (< 50 animals).

What effect does fertility control have on population growth rate?

Alternative 1, with implement fertility control, reflects a slightly lower population growth rate than Alternative 1, without the use of fertility control, which would involve gathers only, but would modify the sex structure of the herd. This would tend to indicate that the growth rate of the herd can be reduced by modifying the sex structure slightly, without the use of fertility control.

What effect do the different alternatives have on the average population size?

The level to which the population is gathered appears to be more of an influence to average population size than fertility control. As expected, Alternative 3 results in the highest average population.

What effects do the different alternatives have on the genetic health of the herd?

The minimum population levels and growth rates are all within reasonable levels for each alternative; therefore adverse impacts to the population are not likely to occur.

Impacts Common to Action Alternatives (1-2)

Over the past 35 years, various impacts to wild horses as a result of gather activities have been observed. Under the Proposed Action, impacts to wild horses would be both direct and indirect, occurring to both individual horses and the population as a whole.

The BLM has been conducting wild horse gathers since the mid-1970s. During this time, methods and procedures have been identified and refined to minimize stress and impacts to wild horses during gather implementation. The SOPs in Appendix B would be implemented to ensure a safe and humane gather occurs and would minimize potential stress and injury to wild horses.

In any given gather, gather-related mortality averages only about one half of one percent (0.5%), which is very low when handling wild animals. Approximately, another six-tenths of one percent (0.6%) of the captured animals could be humanely euthanized due to pre-existing conditions and in accordance with BLM policy (GAO-09-77). These data affirm that the use of helicopters and motorized vehicles has proven to be a safe, humane, effective, and practical means for the gather and removal of excess wild horses (and burros) from the public lands. The BLM also avoids gathering wild horses by helicopter during the 6 weeks prior to and following the peak foaling season (i.e., March 1 through June 30).

Individual, direct impacts to wild horses include the handling stress associated with the roundup, capture, sorting, handling, and transportation of the animals. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. When being herded to trap site corrals by the helicopter, injuries sustained by wild horses may include bruises, scrapes, or cuts to feet, legs, face, or body from rocks, brush or tree limbs. Rarely, wild horses will encounter barbed wire

fences and will receive wire cuts. These injuries are very rarely fatal and are treated on-site until a veterinarian can examine the animal and determine if additional treatment is indicated.

Other injuries may occur after a horse has been captured and is either within the trap site corral, the temporary holding corral, during transport between facilities, or during sorting and handling. Occasionally, horses may sustain a spinal injury or a fractured limb but based on prior gather statistics, serious injuries requiring humane euthanasia occur in less than1 horse per every 100 captured. Similar injuries could be sustained if wild horses were captured through bait and/or water trapping, as the animals still need to be sorted, aged, transported, and otherwise handled following their capture. These injuries result from kicks and bites, or from collisions with corral panels or gates.

To minimize the potential for injuries from fighting, the animals are transported from the trap site to the temporary (or short-term) holding facility where they are sorted as quickly and safely as possible, then moved into large holding pens where they are provided with hay and water. On many gathers, no wild horses are injured or die. On some gathers, due to the temperament of the horses, they are not as calm and injures are more frequent. Overall, direct gather-related mortality averages less than 1%.

Indirect individual impacts are those which occur to individual wild horses after the initial event. These may include miscarriages in mares, increased social displacement, and conflict in studs. These impacts, like direct individual impacts, are known to occur intermittently during wild horse gather operations. An example of an indirect individual impact would be the brief 1-2 minute skirmish between older studs which ends when one stud retreats. Injuries typically involve a bite or kick with bruises which do not break the skin. Like direct individual impacts, the frequency of these impacts varies with the population and the individual. Observations following capture indicate the rate of miscarriage varies, but can occur in about 1 to 5% of the captured mares, particularly if the mares are in very thin body condition or in poor health.

A few foals may be orphaned during a gather. This can occur if the mare rejects the foal, the foal becomes separated from its mother and cannot be matched up following sorting, the mare dies or must be humanely euthanized during the gather, the foal is ill or weak and needs immediate care that requires removal from the mother, or the mother does not produce enough milk to support the foal. On occasion, foals are gathered that were previously orphaned on the range (prior to the gather) because the mother rejected it or died. These foals are usually in poor, unthrifty condition. Every effort is made to provide appropriate care to orphan foals. Veterinarians may administer electrolyte solutions or orphan foals may be fed milk replacer as needed to support their nutritional needs. Orphan foals may be placed in a foster home in order to receive additional care. Despite these efforts, some orphan foals may die or be humanely euthanized as an act of mercy if the prognosis for survival is very poor.

Through the capture and sorting process, wild horses are examined for health, injury and other defects. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals meet the criteria and should be euthanized (refer to SOPs, Appendix A). Animals that are euthanized for non-gather related reasons include those with old injuries (broken or deformed limbs) that cause lameness or prevent the animal from being able to maintain an acceptable body condition (greater than or equal to BCS 3); old animals that have serious dental abnormalities or severely worn teeth and are not expected to maintain an acceptable body condition, and wild horses that have serious physical defects such as club feet, severe limb deformities, or sway back. Some of these conditions have a causal genetic component and the animals should not be returned to the range to prevent suffering, as well as to avoid amplifying the incidence of the problem in the population.

Wild horses not captured may be temporarily disturbed and moved into another area during the gather operation. With the exception of changes to herd demographics from removals, direct population impacts have proven to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

It is not expected that genetic health would be impacted by the Proposed Action. The AML range of 70 – 155 on the Confusion HMA and 40 – 80 on the Conger Mtn. HMA should provide for acceptable genetic diversity.

By maintaining wild horse population size within the AML, there would be a lower density of wild horses across the HMA, reducing competition for resources and allowing wild horses to utilize their preferred habitat. Maintaining population size within the established AML would be expected to improve forage quantity and quality and promote healthy, self-sustaining populations of wild horses in a thriving natural ecological balance and multiple use relationship on the public lands in the area. Deterioration of the range associated with wild horse overpopulation would be avoided. Managing wild horse populations in balance with the available habitat and other multiple uses would lessen the potential for individual animals or the herd to be affected by drought, and would avoid or minimize the need for emergency gathers, which would reduce stress to the animals and increase the success of these herds over the long-term.

Over the next 6 years, implementation of the Proposed Action would result in approximately 400 fewer excess wild horses which would require removal from the range. For every excess horse not placed in the adoption, sale or long-term holding pipeline, a savings to the American taxpayer of up to $12,000 per animal over 20 years would accrue.

Transport, Short Term Holding, and Adoption (or Sale) Preparation

Wild horses removed from the range will be transported to the receiving short-term holding facility in a straight deck semi-trailers or goose-neck stock trailers. Vehicles will be inspected prior to use to ensure wild horses can be safely transported and that the interior of the vehicle is in a sanitary condition. Wild horses are segregated by age and sex and loaded into separate compartments. A small number of mares may be shipped with foals. Transportation of recently captured wild horses is limited to a maximum of 8 hours. During transport, potential impacts to individual horses can include stress, as well as slipping, falling, kicking, biting, or being stepped on by another animal. Unless wild horses are in extremely poor condition, it is rare for an animal to be seriously injured or die during transport.

Upon arrival at the short term holding facility, recently captured wild horses are off-loaded by compartment and placed in holding pens where they are fed good quality hay and water. Most wild horses begin to eat and drink immediately and adjust rapidly to their new situation. At the short-term holding facility, a veterinarian examines each load of horses and provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club feet, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA). Wild horses in very thin condition or animals with injuries are sorted and placed in hospital pens, fed separately and/or treated for their injuries as indicated. Recently captured wild horses, generally mares, in very thin condition may have difficulty transitioning to feed. Some of these animals are in such poor condition that it is unlikely they would have survived if left on the range. Similarly, some mares may lose their pregnancies. Every effort is taken to help the mare make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.

After recently captured wild horses have transitioned to their new environment, they are prepared for adoption or sale. Preparation involves freeze-marking the animals with a unique identification number, drawing a blood sample to test for equine infections anemia, vaccination against common diseases, castration, and de-worming. During the preparation process, potential impacts to wild horses are similar to those that can occur during handling and transportation. Serious injuries and deaths from injuries during the preparation process are rare, but can occur.

At short-term corral facilities, a minimum of 700 square feet is provided per animal. Mortality at short-term holding facilities averages approximately 5% per year (GAO-09-77, Page 51), and includes animals euthanized due to a pre-existing condition; animals in extremely poor condition; animals that are injured and would not recover; animals which are unable to transition to feed; and animals which are seriously injured or accidentally die during sorting, handling, or preparation.

Adoption or Sale with Limitations, and Long Term Holding

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall for horses over 18 months of age. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse for one year and the horse and the facilities are inspected to assure the adopter is complying with the BLM's requirements. After one year, the adopter may take title to the horse, at which point the horse becomes the property of the adopter. Adoptions are conducted in accordance with 43 CFR 5750.

Potential buyers must fill out an application and be pre-approved before they may buy a wild horse. A sale-eligible wild horse is any animal that is more than 10 years old; or has been offered unsuccessfully for adoption three times. The application also specifies that all buyers are not to re-sell the animal to slaughter buyers or anyone who would sell the animal to a commercial processing plant. Sales of wild horses are conducted in accordance with Bureau policy.

Between 2007 and 2009, nearly 62% of excess wild horses or burros were adopted and about 8% were sold with limitation (to good homes) to qualified individuals. Animals 5 years of age and older are transported to long-term holding (LTH) grassland pastures. The BLM has maintained LTH pastures in the Midwest for over 20 years.

Potential impacts to wild horses from transport to adoption, sale or LTH are similar to those previously described. One difference is that when shipping wild horses for adoption, sale or LTH, animals may be transported for a maximum of 24 hours. Immediately prior to transportation, and after every 18-24 hours of transportation, animals are offloaded and provided a minimum of 8 hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of clean water and 25 pounds of good quality hay per horse with adequate bunk space to allow all animals to eat at one time. Most animals are not shipped more than 18 hours before they are rested. The rest period may be waived in situations where the travel time exceeds the 24-hour limit by just a few hours and the stress of offloading and reloading is likely to be greater than the stress involved in the additional period of uninterrupted travel.

LTH pastures are designed to provide excess wild horses with humane, life-long care in a natural setting off the public rangelands. There wild horses are maintained in grassland pastures large enough to allow free-roaming behavior and with the forage, water, and shelter necessary to sustain them in good condition. About 22,700 wild horses, that are in excess of the existing adoption or sale demand (because of age or other factors), are currently located on private land pastures in Iowa, Kansas, Oklahoma, and South Dakota. Located in mid or tall grass prairie regions of the United States, these LTH pastures are highly productive grasslands as compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 8-10 acres per animal). The majority of these animals are older in

age.

Mares and sterilized stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. Although the animals are placed in LTH, they remain available for adoption or sale to qualified individuals. No reproduction occurs in the long-term grassland pastures, but foals born to pregnant mares are gathered and weaned when they reach about 8-10 months of age and are then shipped to short-term facilities where they are made available adoption. Handling by humans is minimized to the extent possible although regular on-the-ground observation and weekly counts of the wild horses to ascertain their numbers, well-being, and safety are conducted. A very small percentage of the animals may be humanely euthanized if they are in very thin condition and are not expected to improve to a BCS of 3 or greater due to age or other factors. Natural mortality of wild horses in LTH pastures averages approximately 8% per year, but can be higher or lower depending on the average age of the horses pastured there (GAO-09-77, Page 52). The savings to the American taxpayer which results from contracting for LTH pastures averages about $4.45 per horse per day as compared with maintaining the animals in short-term holding facilities.

Euthanasia and Sale without Limitation
While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is authorized under the WFRHBA, Congress prohibited the use of appropriated funds between 1987 and 2004 and again in 2010 for this purpose. It is unknown if a similar limitation will be placed on the use of FY2011 appropriated funds.

Impacts of Alternative 1 (Proposed Action)
Alternative 1 (Proposed Action) would gather up to 300 horses, of which 250 would be removed to return wild horse population size to within AML on the Confusion HMA and gather up to 260 horses and remove 230 to return the wild horse population size to within AML on the Conger Mtn. HMA. Up to 50 studs would be released back to the Confusion HMA and 10 treated mares and 20 studs would be released back to the Conger Mtn. HMA following the gather. Mares and studs would be selected for release to maintain a diverse age structure, herd characteristics, and conformation (body type).

Fertility control would be applied to all the released mares to decrease the future annual population growth. The procedures to be followed for the implementation of fertility control are detailed in Appendix A. Each released mare would receive a single dose of the two-year PZP contraceptive vaccine. When injected, PZP (antigen) causes the mare's immune system to produce antibodies and these antibodies bind to the mare's eggs, and effectively block sperm binding and fertilization (Zoo, Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and environment, and can easily be administered in the field. In addition, among mares, PZP contraception appears to be completely reversible.

The highest success for fertility control has been obtained when applied during the timeframe of November through February. The efficacy for the application of the two-year PZP vaccine based on winter applications follows:

	Year 1	Year 2	Year 3	Year 4
Normal	94%	82%	68%	

One-time application at the capture site would not affect normal development of the fetus, hormone health of the mare or behavioral responses to stallions, should the mare already be pregnant when vaccinated (Kirkpatrick, 1995). The vaccine has also proven to have no apparent effect on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner, 1997). Mares would foal normally in 2011 (Year 1).

The injection would be controlled, handled, and administered by a trained BLM employee. Mares receiving the vaccine would experience slightly increased stress levels associated with handling while being vaccinated and freeze-marked. Serious injection site reactions associated with fertility control treatments are rare in treated mares. Any direct impacts associated with fertility control, such as swelling or local reactions at the injection site, would be minor in nature and of short duration. Most mares recover quickly once released back to the HMA, and none are expected to have long term consequences from the fertility control injections.

Under Alternative 1, some captured wild horses would be released back to the range to achieve a post-gather sex ratio of 70% studs and 30% mares on the Confusion HMA and 60% studs and 40% mares on the Conger Mtn. HMA. Under this alternative, band size would be expected to decrease, competition for mares would be expected to increase, recruitment age for reproduction among mares would be expected to decline, and size and number of bachelor bands would be expected to increase. These effects would be slight, as the proposed sex ratio is not an extreme departure from normal sex ratio ranges. Modification of sex ratios for a post-gather population favoring studs would further reduce growth rates in combination with fertility control.

Impacts of Alternative 2
Implementation of Alternative 2 would result in capturing fewer wild horses than would be captured in Alternative 1. A gate cut removal would be implemented rather than a selective removal (i.e., the gather would end when the number of excess wild horses which requires removal has been captured). Alternative 2 would not involve fertility control; mares would not undergo the additional stress of receiving fertility control injections or freeze-marking and would foal at normal rates until the next gather is conducted. The post-gather sex ratio would be about 40:60 mares to studs. Smaller bachelor bands would be expected, with similar reproduction rates as currently being experienced within the herd, and individual mares would likely begin actively producing at a slightly older age.

Impacts of Alternative 3 (No Action)
Under the No Action Alternative, there would be no active management to control the population size within the established AML at this time. In the absence of a gather, wild horse populations would continue to grow at an average rate of 15% and 20% per year within the Confusion and Conger Mtn HMAs respectively. Without a gather and removal now, the population would grow to 505 on the Confusion HMA and 603 on the Conger Mtn. HMA in four years time based on the average annual growth rate for each of these HMAs.

Use by wild horses would continue to exceed the amount of forage allocated for their use. Competition between wildlife, livestock and wild horses for limited forage and water resources would continue. Damage to rangeland resources would continue or increase. Over time, the potential risks to the health of individual horses would increase, and the need for emergency removals to prevent their death from starvation or thirst would also increase. Over the long-term, the health and sustainability of the wild horse population is dependent upon achieving a thriving natural ecological balance and sustaining healthy rangelands. Allowing wild horses to die of dehydration or starvation would be inhumane and would be contrary to the WFRHBA which requires that excess wild horses be immediately removed. Allowing rangeland damage to continue to result from wild horse overpopulation would also be contrary to the WFRHBA which requires the BLM to "*protect the range from the deterioration associated with overpopulation*", "*remove excess animals from the range so as to achieve appropriate management levels*", and "*to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area.*"

4.3 Cumulative Effects for All Alternatives

The 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. The cumulative impacts study area (CSA) for the purposes of evaluating cumulative impacts is the Conger Complex.
According to the 1994 BLM *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values identified during scoping that are of major importance. Accordingly, the issues of major importance to be analyzed are maintaining rangeland health and maintaining appropriate management level.

4.3 Past and Present Actions

4.3.1 Wild Horses

The Warm Springs Resource Area RMP/ROD Rangeland Program Summary, 1987 and the House Range Resource Area RMP/ROD Rangeland Program Summary, 1987 designated the Conger Mountain and Confusion HMAs for the long-term management of wild horses. The HMAs established in 1976 and identified in the "West Desert Wild Horse Capture Plan" (1977) are nearly identical in size and shape to the original herd areas identified in 1971 Management of wild horses within the HMAs today are guided by the Warm Springs Resource Area RMP, 1987 and the House Range Resource Area RMP, 1987. AML was established as a population range of 40 – 80 on the Conger Mtn. HMA and 70 – 115 on the Confusion HMA in1987 through issuance of the Warm Springs Resource Area ROD and House Range Resource Area ROD.

Congressional appropriations over the past ten years and most recently for the 2010 budget year prohibits the destruction of healthy animals that are removed or deemed to be excess. BLM policy is consistent with these appropriations provisions such that only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a population control method. Nor does BLM sell excess wild horses for slaughter; rather BLM makes every effort to place excess wild horses with private citizens who can provide the animals with a good home.

Public interest in the welfare and management of wild horses continues to be very high. There are many different values pertaining to wild horse management from the public's perceptions. Some view wild horses as nuisance animals, while others strongly advocate management of wild horses as living symbols of the pioneer spirit.

4.3.2 Vegetation

Through previous decisions, the BLM has allocated the available forage to wild horses, wildlife and domestic livestock. Other decisions have resulted in adjustments to livestock numbers and seasons of use and for implementation of grazing systems and the associated range improvements to promote rangeland health.

While the present livestock grazing system and efforts to manage the wild horse population within AML has reduced past historic impacts, the current overpopulation of wild horses is continuing to contribute to areas of heavy vegetation utilization, trailing and trampling damage and is preventing the BLM from managing for rangeland health and a thriving natural ecological balance and multiple use relationship on the public lands in the area. Rangeland Health Assessments have been conducted within the Conger Complex for the associated livestock grazing allotments. Portions of the complex have been monitored over the past several years due to problems with drought, vegetation condition and the combined use of wild horses and domestic livestock. Adjustments have been made from these evaluations to the permitted

use by livestock by way of season of use, livestock numbers, and grazing systems through the allotment evaluation and permit renewal processes.

The Proposed Action analyzed in this EA would result in the reduction in competition between wild horses and other users (i.e. native wildlife and domestic livestock) for the limited available forage and water resources. Direct improvements in soils and riparian condition would be expected in the short term and result in fewer multiple-use conflicts within and adjacent to the Conger Complex.

Over the long-term, improving the range would further benefit all users and the resources they depend on for forage and water.

Under the No Action (no removal) alternative, the current population of wild horses would not be reduced through the completion of a gather this year. Competition among wild horses, native wildlife and domestic livestock for limited resources would increase, and riparian conditions would continue to deteriorate. Over the long-term, the health of wild horses and native wildlife would be expected to suffer as rangeland productivity further declines.

4.4 Reasonably Foreseeable Future Actions

4.4.1 Wild Horses

Over the next 10-20 year period, reasonably foreseeable future actions include gathers about every 6 - 8 years to remove excess wild horses in order to manage population size within the established AML range. Small selective management removals could be conducted through water trapping and other methods to maintain the AML within the HMAs reducing the need for large gathers thus reducing the amount of stress experienced by the wild horses. The excess animals removed would be transported to short-term corral facilities where they would be prepared for adoption, sale (with limitations), or long-term holding. A Herd Management Area Plan could also be completed which would establish short and long-term management and monitoring objectives for the herd and its habitat. Any future wild horse management would be analyzed in appropriate environmental documents following site-specific planning with public involvement.

4.4.2 Vegetation

Livestock grazing is expected to continue at similar stocking rates and utilization of the available vegetation (forage) would also be expected to continue at similar levels. Continuing to graze livestock in a manner consistent with grazing permit terms and conditions would be expected to achieve or make significant progress towards achieving Rangeland Health Standards.

Future actions that would affect vegetation in within the Conger Complex area that are currently being developed and employed in surrounding areas within the Fillmore Field Office include the development of wind farms and pipelines, and the pursuance of the underground water resources within Snake Valley (Utah) by the Southern Nevada Water Authority for use within the Las Vegas, Nevada area. The loss of vegetation and water with the development of these activities would adversely affect the wild horse and native wildlife populations in the long-term through the loss of habitat.

4.5 Summary of Past, Present, and Reasonably Foreseeable Future Actions

Impacts Common to Action Alternatives (1-2)

The cumulative effects associated with the capture and removal of excess wild horses includes gather-related mortality of less than 1% of the captured animals, about 5% per year associated with transportation, short term holding, adoption or sale with limitations and about 8% per year associated with

long-term holding. This compares with natural mortality on the range ranging from about 5-8% per year for foals (animals under age 1), about 5% per year for horses ages 1-15, and 5-100% for animals age 16 and older (Stephen Jenkins, 1996, Garrott and Taylor, 1990). In situations where forage and/or water are limited, mortality rates increase, with the greatest impact to young foals, nursing mares and older horses. Animals can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their mare, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. Before these conditions arise, the BLM generally removes the excess animals to prevent their suffering from dehydration or starvation.

While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is authorized under the WFRHBA, Congress prohibited the use of appropriated funds between 1987 and 2004 and again in 2010 for this purpose. It is unknown if a similar limitation will be placed on the use of FY2011 appropriated funds.

The other cumulative effects which would be expected when incrementally adding either of the Action Alternatives to the CSA would include continued improvement of upland vegetation conditions, which would in turn benefit permitted livestock, native wildlife, and wild horse population as forage (habitat) quality and quantity is improved over the current level. Benefits from a reduced wild horse population would include fewer animals competing for limited forage and water resources. Cumulatively, there should be more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple use conflicts in the area over the short and long-term. Over the next 15-20 years, continuing to manage wild horses within the established AML range would achieve a thriving natural ecological balance and multiple use relationship on public lands in the area.

Impacts of Alternative 1 (Proposed Action)
Application of fertility control and adjustment in sex ratios to favor males should slow population growth and result in fewer gathers and less frequent disturbance to individual wild horses and the herd's social structure. However, return of wild horses back into the HMA could lead to decreased ability to effectively gather horses in the future as released horses learn to evade the helicopter.

Impacts of Alternative 3 (No Action)
Under the No Action Alternative, the wild horse population within the Conger Complex could exceed 1000 in four years. Movement outside the HMAs would be expected as greater numbers of horses search for food and water for survival, thus impacting larger areas of public lands. Heavy to excessive utilization of the available forage would be expected and the water available for use could become increasingly limited. Eventually, ecological plant communities would be damaged to the extent that they are no longer sustainable and the wild horse population would be expected to crash.

Emergency removals could be expected in order to prevent individual animals from suffering or death as a result of insufficient forage and water. These emergency removals could occur as early as 2011 with the current population levels and expected growth. During emergency conditions, competition for the available forage and water increases. This competition generally impacts the oldest and youngest horses as well as lactating mares first. These groups would experience substantial weight loss and diminished health, which could lead to their prolonged suffering and eventual death. If emergency actions are not taken, the overall population could be affected by severely skewed sex ratios towards stallions as they are generally the strongest and healthiest portion of the population. An altered age structure would also be expected.

Cumulative impacts would result in foregoing the opportunity to improve rangeland health and to properly manage wild horses in balance with the available forage and water and other multiple uses. Attainment of site-specific vegetation management objectives and Standards for Rangeland Health would

not be achieved. AML would not be achieved and the opportunity to collect the scientific data necessary to re-evaluate AML levels, in relationship to rangeland health standards, would be foregone.

5.0Monitoring and Mitigation Measures

The BLM Wild Horse Specialist assigned as lead for the gather would be responsible for ensuring all personnel abide by the SOPs (Appendix A). Ongoing monitoring of forage condition and utilization, water availability, aerial population surveys, and animal health would continue.

Fertility control monitoring would be conducted in accordance with the SOPs (Appendix B). Monitoring the herd's social behavior would be incorporated into routing monitoring. The objective of this additional monitoring would be to determine if additional studs form bachelor bands or are more aggressive with breeding bands for the forage and water present.

6.0 List of Preparers

The following list identifies the interdisciplinary team member's area of responsibility:

Name	Title	Area of Responsibility
Eric Reid	Wild Horse Specialist	Project Lead/Wild Horses
James Priest	Wildlife Biologist	Wildlife, Migratory Birds, Special Status Species
George Cruz	Hydrologist	NEPA, Floodplains, Air Quality, Hydrology
Joelle McCarthy	Archeologist	Cultural Resources, Native American Religious Concerns
Steve Bonar	Recreation Specialist	Wilderness, Visual Resources, Wild and Scenic Rivers
Paul Caso	Rangeland Management Specialist	Livestock Grazing, Standards for Rangeland Health
Bill Thompson	Rangeland Management Specialist	Soil, Riparian/Wetlands, Farmlands (Prime or Unique)
RB Probert	Weed Specialist	Invasive Species/Noxious Weeds
David Whitaker	Rangeland Management Specialist	Vegetation, Special Status Species

7.0 Consultation and Coordination

An annual single state-wide public hearing is held regarding the use of helicopters and motorized vehicles to capture wild horses (or burros) within the state of Utah. During the hearing, the public is given the opportunity to present new information and to voice any concerns or opinions regarding the use of these methods to capture wild horses (or burros). A hearing was held in the West Desert District Office in Salt Lake City, Utah on June 9, 2010. Twelve individuals were present at the meeting with question & answers and general discussion occurring from 6:30 to 9:00 pm. Primary comments and issues discussed were: (1) how helicopters are used during gathers and their effects on wild horses, (2) appropriate management levels in HMAs and how they are establish and monitored, (3) how BLM inventories wild horse populations and accuracies of these surveys, and (4) legal ability of BLM using motorized vehicles. BLM reviewed its Standard Operating Procedures in response to the views and issues expressed at the hearing and determined that no changes to the SOPs were warranted.

8.0 Public Involvement

Notification of the proposed action was listed on the ENBB (refer to section 1.7), the Southern Utah Wilderness Alliance (SUWA) wrote in support of the proposed action as described in the ENBB. A preliminary EA was posted June 14, 2010 for public review and comment for 30 days.

9.0 List of References

Coates-Markel, L. 2000. Summary Recommendations, BLM Wild Horse and Burro Population Viability Forum April 1999, Ft Collins, CO. Resource Notes 35:4pp.

Interior Board of Land Appeals 88-591, 88-638, 88-648, 88-679 at 127.

109 Interior Board of Land Appeals 119 API 1989.

118 Interior Board of Land Appeals 75.

NOAA. www.ncdc.noaa.gov

USDOI, BLM. 2008. Notional Environmental Policy Act. Handbook -1790-1.

USDOI, 1986 Final Environmental Impact Statement and Proposed Resource Management Plan for the House Range Resource Area, Department of the Interior Bureau of Land Management Richfield District. DOI No. FEIS-86-26. September 1986

USDOI, 1986. Warm Springs Resource Area Proposed resource Management Plan/Final Environmental Impact Statement. September 1986

USDOI BLM. Rangeland Health Assessments for the Fillmore Field Office Range Files.

USDOI BLM. West Desert Wild Horse Capture Plan, Richfield District, 1977

USDOI BLM. Wild Horse Population Inventories, Fillmore Field Office.

USDOI BLM. Wild Horse Utilization Studies, Fillmore Field Office 2004, 2007, 2009.

10.0 Appendices

Appendix A – Standard Operating Procedures (Fertility Control Application and Monitoring)
Appendix B – Standard Operating Procedures (Gather Operation)
Appendix C – Win Equus Population Modeling Results
Appendix D – ID Team Checklist and Specialist Information (Internal and External)
Appendix E – Public Consultation Letters

APPENDIX A

Standard Operating Procedures for Population-level Fertility Control Treatments

One-year liquid vaccine: The following implementation and monitoring requirements are part of the Proposed Action:

1. PZP vaccine would be administered through darting by trained BLM personnel or collaborating research partners only. For any darting operation, the designated personnel must have successfully completed a Nationally recognized wildlife darting course and who have documented and successful experience darting wildlife under field conditions.
2. Mares that have never been treated would receive 0.5 cc of PZP vaccine emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA) and loaded into darts at the time a decision has been made to dart a specific mare. Mares identified for re-treatment receive 0.5 cc of the PZP vaccine emulsified with 0.5 cc of Freund's Incomplete Adjuvant (FIA).
3. The liquid dose of PZP vaccine is administered using 1.0 cc Pneu-Darts with 1.5" barbless needles fired from either Dan Inject® or Pneu-Dart® capture gun.
4. Only designated darters would mix the vaccine/adjuvant and prepare the emulsion. Vaccine-adjuvant emulsion would be loaded into darts at the darting site and delivered by means of a capture gun.
5. Delivery of the vaccine would be by intramuscular injection into the left or right hip/gluteal muscles while the mare is standing still.
6. Safety for both humans and the horse is the foremost consideration in deciding to dart a mare. The Dan Inject® gun would not be used at ranges in excess of 30 m while the Pneu-Dart® capture gun would not be used over 50 m, and no attempt would be taken when other persons are within a 30-m radius of the target animal.
7. No attempts would be taken in high wind or when the horse is standing at an angle where the dart could miss the hip/gluteal region and hit the rib cage. The ideal is when the dart would strike the skin of the horse at a perfect 90° angle.
8. If a loaded dart is not used within two hours of the time of loading, the contents would be transferred to a new dart before attempting another horse. If the dart is not used before the end of the day, it would be stored under refrigeration and the contents transferred to another dart the next day. Refrigerated darts would not be used in the field.
9. No more than two people should be present at the time of a darting. The second person is responsible for locating fired darts. The second person should also be responsible for identifying the horse and keeping onlookers at a safe distance.
10. To the extent possible, all darting would be carried out in a discrete manner. However, if darting is to be done within view of non-participants or members of the public, an explanation of the nature of the project would be carried out either immediately before or after the darting.
11. Attempts will be made to recover all darts. To the extent possible, all darts which are discharged and drop from the horse at the darting site would be recovered before another darting occurs. In exceptional situations, the site of a lost dart may be noted and marked, and recovery efforts made at a later time. All discharged darts would be examined after recovery in order to determine if the charge fired and the plunger fully expelled the vaccine.
12. All mares targeted for treatment will be clearly identifiable through photographs to enable researchers and HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

13. Personnel conducting darting operations should be equipped with a two-way radio or cell phone to provide a communications link with the Project Veterinarian for advice and/or assistance. In the event of a veterinary emergency, darting personnel would immediately contact the Project Veterinarian, providing all available information concerning the nature and location of the incident.
14. In the event that a dart strikes a bone or imbeds in soft tissue and does not dislodge, the darter would follow the affected horse until the dart falls out or the horse can no longer be found. The darter would be responsible for daily observation of the horse until the situation is resolved.

22-month time-release pelleted vaccine: The following implementation and monitoring requirements are part of the Proposed Action:
1. PZP vaccine would be administered only by trained BLM personnel or collaborating research partners.
2. 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 delivered using a modified syringe and jabstick to inject the pellets into the gluteal muscles of the mares being returned to the range. The pellets are designed to release PZP over time similar to a time-release cold capsule.
3. Delivery of the vaccine would be by intramuscular injection into the gluteal muscles while the mare is restrained in a working chute. The primer would consist of 0.5 cc of liquid PZP emulsified with 0.5 cc of Freunds Modified Adjuvant (FMA). The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid or pellets would be injected into the left hind quarters of the mare, above the imaginary line that connects the point of the hip (hook bone) and the point of the buttocks (pin bone).
4. In the future, the vaccine may be administered remotely using an approved long range darting protocol and delivery system if or when that technology is developed.
5. All treated mares will be freeze-marked on the hip or neck HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

Monitoring and Tracking of Treatments:
1. At a minimum, estimation of population growth rates using helicopter or fixed-wing surveys will be conducted before any subsequent gather. During these surveys it is not necessary to identify which foals were born to which mares; only an estimate of population growth is needed (i.e. # of foals to # of adults).
2. Population growth rates of herds selected for intensive monitoring will be estimated every year post-treatment using helicopter or fixed-wing surveys. During these surveys it is not necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of adults). If, during routine HMA field monitoring (on-the-ground), data describing mare to foal ratios can be collected, these data should also be shared with the NPO for possible analysis by the USGS.
3. A PZP Application Data sheet will be used by field applicators to record all pertinent data relating to identification of the mare (including photographs if mares are not freeze-marked) and date of treatment. Each applicator will submit a PZP Application Report and accompanying narrative and data sheets will be forwarded to the NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.
4. 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(s) applied by HMA and date.

APPENDIX B

Standard Operating Procedures for Wild Horse (or Burro) Gathers

Gathers are conducted by utilizing contractors from the Wild Horse (or Burros) Gathers-Western States Contract or BLM personnel. The following procedures for gathering and handling wild horses 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* (January 2009).

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 a large number of animals may need to be euthanized or capture operations could be facilitated by a veterinarian, these services would be arranged 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 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 whenever possible.

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 (e.g., 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. Under normal circumstances this travel should not exceed 10 miles and may be much

less dependent on existing conditions (i.e. ground conditions, animal health, extreme temperature (high and low)).

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 larger than 2"x4".

    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 or sliding 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, estrays or other animals the COR determines need to be housed in a separate pen 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. The contractor will supply weed free hay if required by State, County, and Federal regulation.

An animal that is held at a temporary holding facility 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 animals must be euthanized and provide for the 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 their final destination from temporary holding facilities as quickly as possible after capture unless prior approval is granted by the COR 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. 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. 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 in any 24 hour period. 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/PI or Field Office horse specialist.

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

1. Capture attempts may be accomplished by utilizing bait (feed, water, mineral licks) to lure animals into a temporary trap. If this capture method is selected, 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, if requested, 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 at least two (2) partition gates providing at least three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing at least 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 as much as possible during transport.

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

No personnel working at gather sites may excavate, remove, damage, or otherwise alter or deface or attempt to excavate, remove, damage or otherwise alter or deface any archaeological resource located on public lands or Indian lands.

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 considerations will be to protect the health, safety and welfare of the animals being gathered and the personnel involved. 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

Contracting Officer's Representative/Project Inspector
Eric Reid, Wild Horse and Burro Specialist
Gus Warr, Wild Horse and Burro Utah State Lead

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 Fillmore Assistant Field Managers for Renewable Resources and Fillmore 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 BLM Holding Facility 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 and Field Office Public Affairs. These individuals will be the primary contact and will coordinate with the COR/PI on any inquiries.

The COR will coordinate with the contractor and 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 C - Population Modeling

Population Model Overview

WinEquus is a program to simulate the population dynamics and management of wild horses created by Stephen H. Jenkins of the Department of Biology, University of Nevada at Reno. For further information about this model, you may contact Stephen H. Jenkins at the Department of Biology/314, University of Nevada, Reno, NV 89557.

The following data was summarized from the information provided within the WinEquus program, and will provide background about the use of the model, the management options that may be used, and the types of output that may be generated.

The population model for wild horses was designed to help wild horse and burro specialists evaluate various management strategies that might be considered for a particular area. The model uses data on average survival probabilities and foaling rates of horses to project population growth for up to 20 years. The model accounts for year-to-year variation in these demographic parameters by using a randomization process to select survival probabilities and foaling rates for each age class from a distribution of values based on these averages. This aspect of population dynamics is called environmental stochasticity, and reflects the fact that future environmental conditions that may affect wild horse population's demographics can't be established in advance. Therefore each trial with the model will give a different pattern of population growth. Some trials may include mostly "good" years, when the population grows rapidly; other trials may include a series of several "bad" years in succession. The stochastic approach to population modeling uses repeated trials to project a range of possible population trajectories over a period of years, which is more realistic than predicting a single specific trajectory.

The model incorporates both selective removal and fertility treatment as management strategies. A simulation may include no management, selective removal, fertility treatment, or both removal and fertility treatment. Wild horse and burro specialists can specify many different options for these management strategies such as the schedule of gathers for removal or fertility treatment, the threshold population size which triggers a gather, the target population size following a removal, the ages and sexes of horses to be removed, and the effectiveness of fertility treatment.
To run the program, one must supply an initial age distribution (or have the program calculate one), annual survival probabilities for each age-sex class of horses, foaling rates for each age class of females, and the sex ratio at birth. Sample data are available for all of these parameters. Basic management options must also be specified.

Descriptions/Definitions of terms used in the Population Model

Population Data: Age-Sex Distribution

An important point about the initial age-sex distribution is that it is NOT necessarily the starting population for each of the trials in a simulation. This is because the program assumes that the initial age-sex distribution supplied on this form or calculated from a population size that the user enters is not an exact and complete count of the population. For example, if the user enters an initial population size of 100 based on an aerial survey, this is really an estimate of the population, not a census. Furthermore, it is likely to be an underestimate, because some horses will be missed in the survey. Therefore, the program uses an average sighting probability of approximately 90% (Garrott et al. 1991) to "scale-up" the initial population estimate to a starting population size for use in each trial. This is done by a random process, so the starting population sizes are different for all trials. An option does exist to consider the initial population size to be exact and bypass this scaling-up process.

Population Data: Survival Probabilities
A fundamental requirement for a population model such as this is data on annual survival probabilities of each age class. The program contains files of existing sets of survival, or it is possible to enter a new set of data in the table.

In most cases, Wild Horse and Burro Specialists don't have information on survival probabilities for their populations, so the sample data files provided with WinEquus are used and assume that average survival probabilities in the populations are similar. These data are more difficult to get than is often assumed, because they require keeping track of known individuals over time. A "snapshot" of a population, providing information on the age distribution at a single gather, can NOT be used to estimate survival probabilities without assuming a particular growth rate for the population (Jenkins1989). More data from long-term studies of marked horses are needed to develop estimates of survival in various habitats.

Population Data: Foaling Rates
Foaling rates are the proportions of females in each age class that produce a foal at that age. Files are available within the program that contains existing sets of foaling rates, or the user may enter a new set of data in the table. The user may also enter the sex ratio at birth, another necessary parameter for population simulation.

Environmental Stochasticity
For any natural population, mortality and reproduction vary from year to year due to unpredictable variation in weather and other environmental factors. This model mimics such environmental stochasticity by using a random process to increase or decrease survival probabilities and foaling rates from average values for each year of a simulation trial. Each trial uses a different sequence of random values, to give different results for population growth. Looking at the range of final population sizes in many such trials will give the user an indication of the range of possible outcomes of population growth in an uncertain environment.

How variable are annual survival probabilities and foaling rates for wild horses? The longest study reporting such data was done at Pryor Mountain, Montana by Garrott and Taylor (1990). Based on 11 years of data at this site, survival probability of foals and adults combined was greater than 98% in 6 years, between 90 and 98% in 3 years, 87% in 1 year, and only 49% in 1 year of severe winter weather. These values clearly aren't normally distributed, but can be approximated by a logistic distribution. This pattern of low mortality in most years but markedly higher mortality in occasional years of bad weather was also reported by Berger (1986) for a site in northwestern Nevada. Therefore, environmental stochasticity in this model is simulated by drawing random values from logistic distributions. If desired, different values can be entered to change the scaling factors for environmental stochasticity.

Because year-to-year variation in weather is likely to affect foals and adults similarly, this model makes foal and adult survival perfectly correlated. This means that when survival probability of foals is high, so is survival probability of adults, and vice versa. By contrast, the correlation between survival probabilities and foaling rates can be adjusted to any value between -1 and +1. The default correlation is 0 based on the Pryor Mountain data and the assumption that most mortality occurs in winter and winter weather is not highly correlated with foaling-season weather.

The model includes another form of random variation, called demographic stochasticity. This means that mortality and reproduction are random processes even in a constant environment; i.e., a foaling

rate of 40% means that each female has a 40% chance of having a foal. Because of demographic stochasticity, even if scaling factors for both survival probabilities and foaling rates were set equal to 0, different runs of the simulation would produce different results. However, variation in population growth due to demographic stochasticity will be small except at low population sizes.

Gathering Schedule
There are three choices for the gather schedule: gather at a regular interval, gather at a minimum interval (the default), or gather in specific years. Gathering at a minimum interval means that gathers will be conducted no more frequently than a prescribed interval (e.g., 3 years), but will not be conducted if the time interval has passed unless the population is above a threshold size that triggers a gather.

Gather interval
This is the number of years between gathers.

Gather for fertility treatment regardless of population size?
If this option is selected (the default), then gathers occur according to the gathering schedule specified regardless of whether or not the population exceeds a threshold population size. One effect of this is that a minimum-interval schedule really functions as a regular interval.

Continue gather after reduction to treat females?
Continuing a gather after a reduction to treat females (with fertility control management options) means that, if a gather for a removal has been triggered because the population has exceeded a threshold population size, then horses will continue to be processed even after enough have been removed to reduce the population to the target population size. As additional horses are processed, females, to be released back, will be treated with an immunocontraceptive according to the information specified in the Contraceptive Parameters form.

Threshold for gather
The threshold population size for triggering a gather is the actual population size in a particular year estimated by the program. This is NOT the same as the number of horses counted in an aerial census, but closer to an estimate of population size taking into account the fact that an aerial census typically underestimates population size.

Target population size
This is the goal for the population size following a gather and removal. Horses will be removed until this target is reached, although it may not be possible to achieve this goal, depending on the removal parameters (percentages of each age-sex class to be removed) and gathering efficiency.

Are foals included in AML?
In most districts, foals are counted as part of the appropriate management level (AML).

Gathering efficiency
Typically, some horses will successfully resist being gathered, either by hiding in habitats where they can't be seen or moved by a helicopter, or following escape routes that make it dangerous or uneconomical for them to be herded from the air. These horses aren't available for removals or fertility treatment. The default gathering efficiency is 80%, meaning that the program assumes that 20% of the population will successfully resist being gathered. This value may be changed.

Note that the program assumes that horses of all age-sex classes are equally likely to be able to be gathered. This is an unrealistic assumption because bachelor males, for example, may be more likely to successfully avoid being gathered than females or foals or band stallions.

Sanctuary-bound horses
Age-selective removals typically target younger age classes such as 0 to 5-year-olds or 0 to 9-year-olds because these horses are more easily adopted. However, it may not be possible to reduce the population to a target size by restricting removals to these younger age classes, especially if age-selective removals have been conducted in the past. In this case, an option is available to remove older animals as well, who may be destined for permanent residence in a long term holding facility rather than for adoption. The minimum age of these long term holding facility horses is specified for this element. When older age classes as well as younger age classes are identified for removal on the Removal Parameters form, horses of these older age classes are selected along with younger age class horses as the population is reduced to the target value. If a minimum age for long term holding facility horses is specified, then older animals are only removed if the population can't be reduced to the target population size by removing the younger ones.

Percent Effectiveness of fertility control
These percentages represent the percentage of treated females that are in fact sterile for one year, two years, etc. (i.e., the efficacy or effectiveness of fertility treatment). The default values are 90% efficacy for one year. However, the user may specify the effectiveness year by year, for up to five years.

Removal Parameters
This allows the user to determine the percentages of horses in each sex and age class to be removed during a gather. The program uses these percentages to determine the probabilities of removing each horse that is processed during a gather. If the percentage for an age-sex class is 100%, then all horses of that age-sex class that are processed will be removed until the target population size is reached. If the percentage for an age-sex class is 0%, then all horses of that age-sex class will be released. If the percentage for an age-sex class is greater than 0% but less than 100%, then the proportion of horses of that age-sex class removed will be approximately equal to the specified percentage.

Contraception Parameters
This allows the user to specify the percentage of released females of each age class that will be treated with an immunocontraceptive. The default values are 100% of each age class, but any or all of these may be changed.

Most Typical Trial
This is the trial that is most similar to each of the other trials in a simulation.

Population Size Table
The default is both sexes and all age classes, but summary results may also be chosen for a subset of the population. The table identifies some key numbers such as the lowest minimum in all trials, the median minimum, and the highest minimum. Thinking about the distribution of minima for example, half of the trials have a minimum less than the median of the minima and half have a minimum greater than the median of the minima. If the user was concerned about applying a management strategy that kept the population above some level, because the population might be at risk of losing genetic diversity if it were below this level, then one might look at the 10th percentile of the minima, and argue that there was only a 10% probability that the population would fall below this size in x

years, given the assumptions about population data, environmental stochasticity, and management that were used in the simulation.

Gather Table

The default is both sexes and all age classes, but summary results may be for a subset of the population. The table shows key values from the distribution of the minimum total number of horses gathered, removed, and (if one elected to display data for both sexes or just for females) treated with a contraceptive across all trials. This output is probably the most important representation of the results of the program in terms of assessing the effects of your management strategy because it shows not only expected average results but also extreme results that might be possible. For example, only 10% of the trials would have entailed gathering fewer animals than shown in the row of the table labeled "10th percentile", while 10% of the trials would have entailed gathering more than shown in the row labeled "90th percentile". In other words, 80% of the time one could expect to gather a number of horses between these 2 values, given the assumptions about survival probabilities, foaling rates, initial age-sex distribution, and management options made for a particular simulation.

Growth Rate

This table shows the distribution of the average population growth rate. The direct effects of removals are not counted in computing average annual growth rates, although a selective removal may change the average foaling rate or survival rate of individuals in the population (e.g., because the age structure of the population includes a higher percentage of older animals), which may indirectly affect the population growth rate. Fertility control clearly should be reflected in a reduction of population growth rate.

Population Modeling – Confusion HMA

To complete the population modeling for the Confusion HMA, version 1.40 of the WinEquus program was utilized.

Objectives of Population Modeling

Review of the data output for each of the simulations provided many useful comparisons of the possible outcomes for each alternative. Some of the questions that need to be answered through the modeling include:

Do any of the alternatives "crash" the population?
What effect does fertility control have on population growth rate?
What effects do the different alternatives have on the average population size?
What effects do the different alternatives have on the genetic health of the herd?

Population Data, Criteria, and Parameters utilized for Population Modeling

All simulations used the survival probabilities, foaling rates, and sex ratio at birth supplied with the WinEquus population model for the Garfield Range in Nevada (garsurv.sin & garfoal.fin). This data was collected on Garfield Flat from 1993 to 1999 by M. Ashley and S. Jenkins.
Survival probabilities and foaling rates utilized in the population model for the four alternatives analyzed are displayed in the following table:

Survival Probabilities and Foaling Rates

Age Class	Survival Probabilities		Foaling Rates
	Females	Males	
Foals	0.919	0.877	0
1	0.996	0.950	0
2	0.994	0.949	0.52
3	0.993	0.947	0.67
4	0.990	0.945	0.76
5	0.988	0.942	0.89
6	0.985	0.939	0.76
7	0.981	0.936	0.90
8	0.976	0.931	0.88
9	0.971	0.926	0.91
10-14	0.947	0.903	0.81
15-19	0.870	0.830	0.82
20+	0.591	0.564	0.75

The following is the sex ratio at birth utilized in the population modeling for the alternatives:

Sex ratio at Birth:

51% Males
49% Females

Although the current proposed action Alternative 1 does not include the gather of all of the horses within or around the Confusion HMA the WinEquus program was utilized to calculate a typical age and sex distribution for a population of 115 horses, with a sex ratio of 70 percent males to 30 percent females. The following table illustrates the approximate age and sex distribution of the wild horses that would be returned the Confusion HMA following the implementation of Alternative 1 with a gather and where 80% of the horses were gathered:

Alternative 1 Initial Age and Sex Distribution

Age Class	Sex		
	Female	Male	Total
Foals	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	2	2
6	0	5	5
7	0	8	8
8	0	10	10
9	0	10	10
10-14	0	8	8
15-19	0	7	7
20+	0	0	0
Total	35 (35 left on HMA)	80 (50 released & 30 left on HMA)	115 (50 Released)

Under Alternative 3, no wild horses would be removed from the Confusion HMA. The initial age and sex distribution for this alternative was calculated using the WinEquus program based upon the number of horses observed during the latest population inventory in February, 2010. The following table illustrates the approximate age and sex distribution of the wild horses that would be within the Confusion HMA in the fall of 2010, which would continue to increase under Alternative 3:

Alternative 3 Initial Age and Sex Distribution

Age Class	Sex		
	Female	**Male**	**Total**
Foals	28	29	57
1	25	25	50
2	18	19	37
3	14	15	29
4	7	8	15
5	4	4	8
6	6	7	13
7	10	19	29
8	9	16	25
9	5	17	22
10-14	11	17	28
15-19	6	13	19
20+	6	11	17
Total	149	200	349

The following table displays the removal parameters utilized in the population model for Alternative 1 with the use of fertility control and Alternative 2 without the use of fertility control:

Removal Criteria (Alternatives 1)

Age	Percentages for Removals	
	Females	Males
Foal	100%	90%
1	100%	90%
2	100%	90%
3	100%	90%
4	100%	90%
5	100%	90%
6	100%	40%
7	100%	40%
8	100%	40%
9	100%	40%
10-14	100%	90%
15-19	100%	90%
20+	100%	90%

Population Modeling Criteria

The following summarizes the population modeling criteria that are common to the Alternatives:

- Starting Year: 2010
- Initial gather year: 2010
- Gather interval: minimum interval of three years
- Sex ratio at birth: 49% female, 51% male
- Percent of the population that can be gathered: 80%
- Foals are included in the AML
- Simulations were run for ten years with 100 trials each

The following table displays the population modeling parameters utilized in the model:

Population Modeling Parameters

Modeling Parameter	Alternative 1 – Remove to 115 Horses (Proposed Action) with Fertility Control (adjusted sex ratio)	Alternative 2- Remove to 115 Horses without Fertility Control	Alternative 2 – No Removal & No Fertility Control (No Action)
Management by removal only	Yes	Yes	N/A
Management by removal with fertility control	Yes	No	N/A
Threshold population size for gathers	280	280	N/A
Target population size following gathers	70	70	N/A
Foals included in AML	Yes	Yes	N/A

Population Modeling Results – Confusion HMA

Population Modeling Results

Following is a description of the population modeling results for the four alternatives analyzed for the Confusion HMA. The actual output tables and graphs from the WinEquus program are located at the end of this appendix.

Population size in ten years

Out of 100 trials in each simulation, the model tabulated minimum, average, and maximum population sizes. The model was run from 2010 to 2020 to determine what the potential effects would be on population size for each alternative. These numbers are useful to make relative comparisons of the different alternatives, and potential outcomes under different management options. The data displayed within the tables is broken down into different levels. The lowest trial, highest trial, and several in between are displayed for each simulation completed. According to the creator of the modeling program, this output is probably the most important representation of the results of the program in terms of assessing the effects of proposed management, because it shows not only expected average results but also extreme results that might be possible.

Population Sizes in 11 years - Minimum

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	84	72	259
10th Percentile	94	86	294
25th Percentile	101	93	301
Median Trial	**110**	**103**	**311**
75th Percentile	122	112	333
90th Percentile	128	118	363
Highest Trial	153	152	444

This table shows that in eleven years and 100 trials for each alternative, the lowest number of 0-20+ year old horses ever obtained was 84 under Alternative 1 with use of fertility by way of an adjusted sex ratio. Half of the trials were greater than the median and half were less than the median. Additional interpretation may be made by comparing the various percentile points. For example, for Alternative 1 (selective removal to 70 mature horses), only 10% of the trials resulted in fewer than 94 wild horses as the minimum population, and 10% of the trials resulted in a minimum population larger than 128 wild horses. In other words, 80% of the time, one could expect a minimum population between these two values for Alternative 1, given the assumptions about survival probabilities, foaling rates, initial age-sex distribution, and management options made for this simulation.

Alternative 1 (selective removal to 75 mature horses) reflect the lowest minimum population size of all the alternatives. Alternative 3 (No Action) reflects the highest minimum population level of all of the trials.

None of the results obtained for any of the alternatives indicate that a crash of the population is likely to occur if the alternative were implemented. The level to which the population is gathered appears to be more of an influence to the population size than fertility control. The lowest population size ever

obtained, 72 horses, is less than the lower level of the current management range of 70 mature wild horses. However, for 90% of the time the simulation indicates that the population would be 118 head or more, which is slightly higher than the upper level of the management range. The simulation results also indicate that the lowest minimum population is still above the level that genetic testing has indicated is needed to maintain important genetic variability within the herd.

Population Sizes in 11 years - Average

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	141	138	574
10th Percentile	168	163	664
25th Percentile	184	178	739
Median Trial	**199**	**188**	**824**
75th Percentile	216	198	871
90th Percentile	231	203	955
Highest Trial	267	235	1234

This table displays the average population sizes obtained for the 100 trials ran for each alternative. The average population size across eleven years ranged from a low of 141 wild horses under Alternative 1, to a high of 267 wild horses under Alternative 1. The average population sizes indicated for Alternative 1 is essentially the same as Alternative 2 with no fertility control. This indicates that gathering the population to 70 horses, would take several gathers with or without the use of Fertility control.

Population Sizes in 11 years - Maximum

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	292	290	1060
10th Percentile	298	299	1288
25th Percentile	308	305	1500
Median Trial	**330**	**316**	**1648**
75th Percentile	359	335	1824
90th Percentile	385	351	1980
Highest Trial	473	470	2684

This table displays the largest populations that could be expected out of 100 trials for each alternative. The figures for the Lowest Trial represent what the population is likely to be in 2019. All figures are similar under Alternative 1 and Alternative 2 with no use of fertility control. The numbers vary due to randomness and assumptions inherent to the modeling program.

Average Growth Rates in ten years

Average growth rates were obtained by running the model for 100 trials from 2009 to 2019 for each alternative. The following table displays the results obtained from the model:

Average Growth Rate in 10 Years

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	4.1%	4.6%	12.8%
10th Percentile	8.4%	7.0%	15.3%
25th Percentile	10.1%	9.5%	16.4%
Median Trial	**11.2%**	**10.8%**	**17.8%**
75th Percentile	12.7%	12.7%	19.1%
90th Percentile	13.7%	13.6%	19.9%
Highest Trial	16.9%	15.3%	21.9%

Alternative 1 and Alternative 2 are very similar in the overall median growth rate since the sex ratio is already adjusted to favor males. The lowest trial growth rates do not appear to be a direct result of the management options, but appear to reflect the random nature of the model and the ability to show extremes in possible outcomes. The range of growth rates is a reasonable representation of what could be expected to occur in a wild horse population.

Totals in eleven years – Gathered, Removed and Treated

The same type of tabular data was obtained from the population model (100 trials) for the numbers of wild horses gathered, removed, and treated under each alternative, over a ten year period. Under Alternative 1, the population model indicates that at least two gathers would be necessary over the next ten year period, beginning with the proposed gather in the summer of 2010. For Alternative 1, using fertility control, the next removal would most likely be necessary in 2013. Under Alternative 1, a second gather would most likely be required in 2016, with a third gather in 2019. This is due to the fact that only 80% of the horses can be gathered from the Confusion HMA in any one year due to the gather site suitability and rough terrain. Under Alternative 3, no wild horses would be gathered or removed from the HMA.

Totals in 11 Years -- Gathered

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	466	212	0
10th Percentile	558	218	0
25th Percentile	608	425	0
Median Trial	**685**	**449**	**0**
75th Percentile	751	472	0
90th Percentile	800	488	0
Highest Trial	959	599	0

Totals in 11 Years -- Removed

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	156	160	0
10th Percentile	161	168	0
25th Percentile	167	336	0
Median Trial	**350**	**359**	**0**
75th Percentile	392	372	0
90th Percentile	418	390	0
Highest Trial	507	478	0

Totals in 11 Years – Treated

Alternative	1 Sex Ratio 70:30	2	3
Lowest Trial	69	0	0
10th Percentile	84	0	0
25th Percentile	94	0	0
Median Trial	**110**	**0**	**0**
75th Percentile	146	0	0
90th Percentile	166	0	0
Highest Trial	210	0	0

The number of horses gathered is higher Alternative 1 with the use of fertility control. The number of horses that would have to be removed is slightly less under Alternative 1 with the use of fertility control. Under Alternative 3, no wild horses would be gathered, removed, or treated.

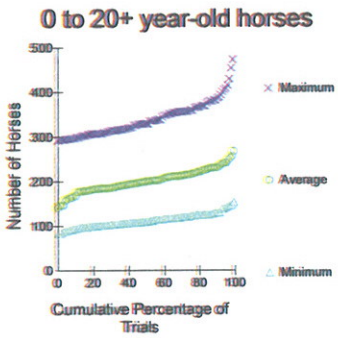
WinEquus Population Modeling Outputs for the Confusion HMA

Alternative 1 (Adjusted Sex Ratio 70:30)

Population Size

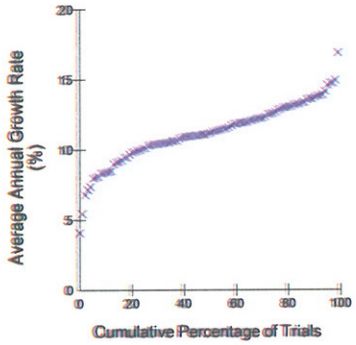
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	84	141	292
10th Percentile	94	168	298
25th Percentile	101	184	308
Median Trial	110	199	330
75th Percentile	122	216	359
90th Percentile	128	231	385
Highest Trial	153	267	473

* 0 to 20+ year-old horses



Growth Rate

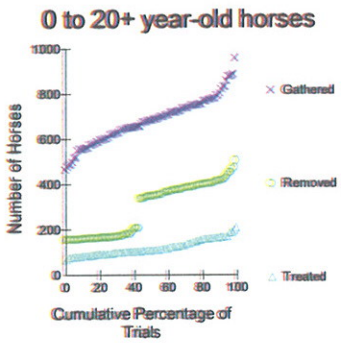
Average Growth rate in 10 Years	
Lowest Trial	4.1%
10th Percentile	8.4%
25th Percentile	10.1%
Median Trial	11.2%
75th Percentile	12.7%
90th Percentile	13.7%
Highest Trial	16.9%



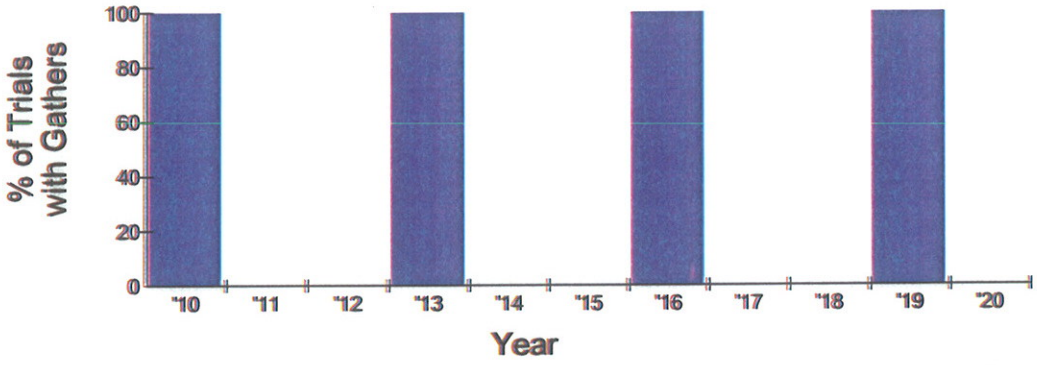
Horses Gathered and Removed

	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	466	156	69
10th Percentile	558	161	84
25th Percentile	608	167	94
Median Trial	685	350	110
75th Percentile	751	392	146
90th Percentile	800	418	166
Highest Trial	959	507	210

* 0 to 20+ year-old horses

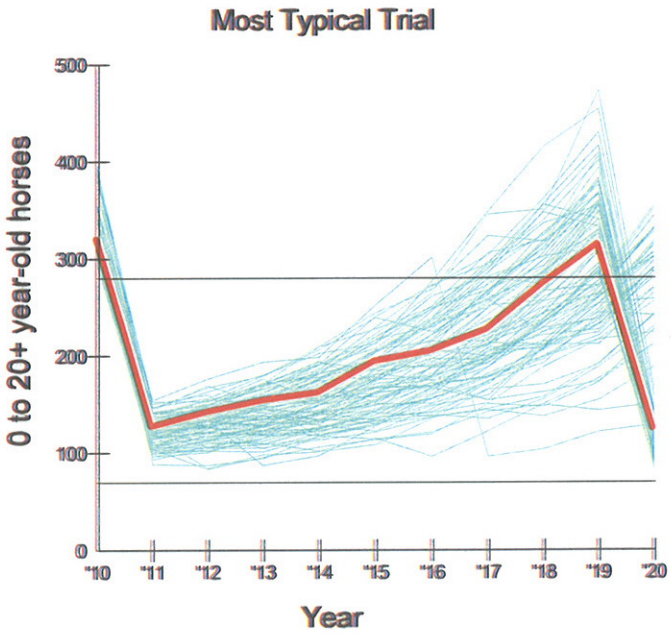


Future Gather Years



Most Typical Trial

Trial: 23

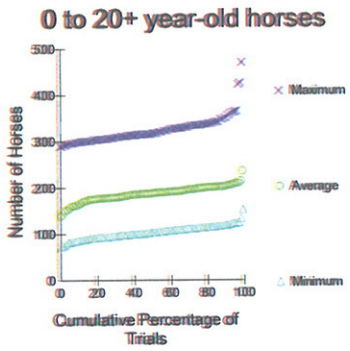


Alternative 2 (no Sex Ratio)

Population Size

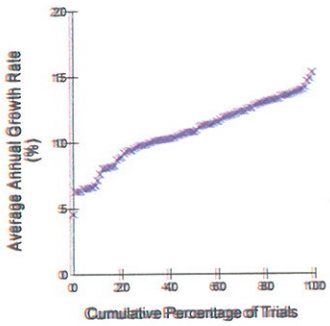
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	72	138	290
10th Percentile	86	163	299
25th Percentile	93	178	305
Median Trial	103	188	316
75th Percentile	112	198	335
90th Percentile	118	203	351
Highest Trial	152	235	470

* 0 to 20+ year-old horses



Growth Rate

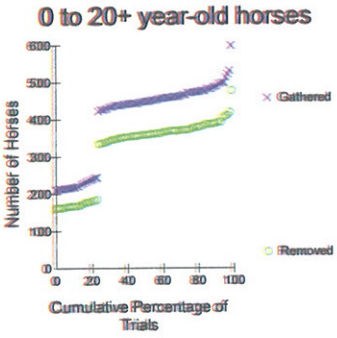
Average Growth rate in 10 Years	
Lowest Trial	4.6%
10th Percentile	7.0%
25th Percentile	9.5%
Median Trial	10.8%
75th Percentile	12.7%
90th Percentile	13.6%
Highest Trial	15.3%



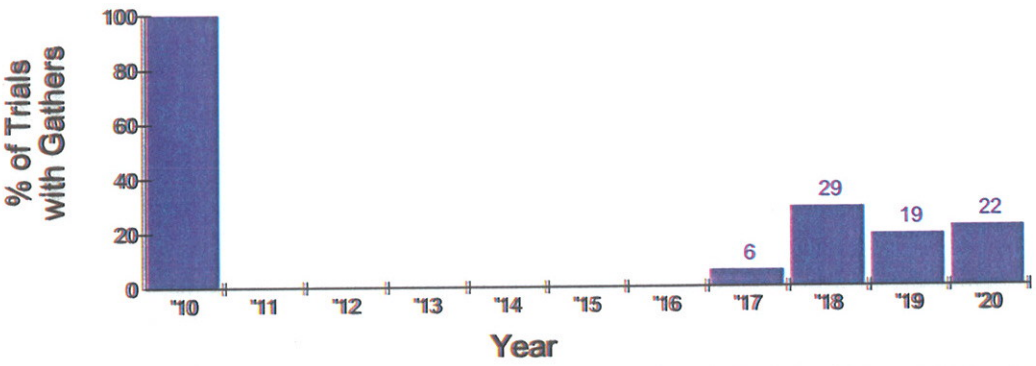
Horses Gathered and Removed

	Totals in 11 Years*	
	Gathered	Removed
Lowest Trial	212	160
10th Percentile	218	168
25th Percentile	425	336
Median Trial	449	359
75th Percentile	472	372
90th Percentile	488	390
Highest Trial	599	478

* 0 to 20+ year-old horses

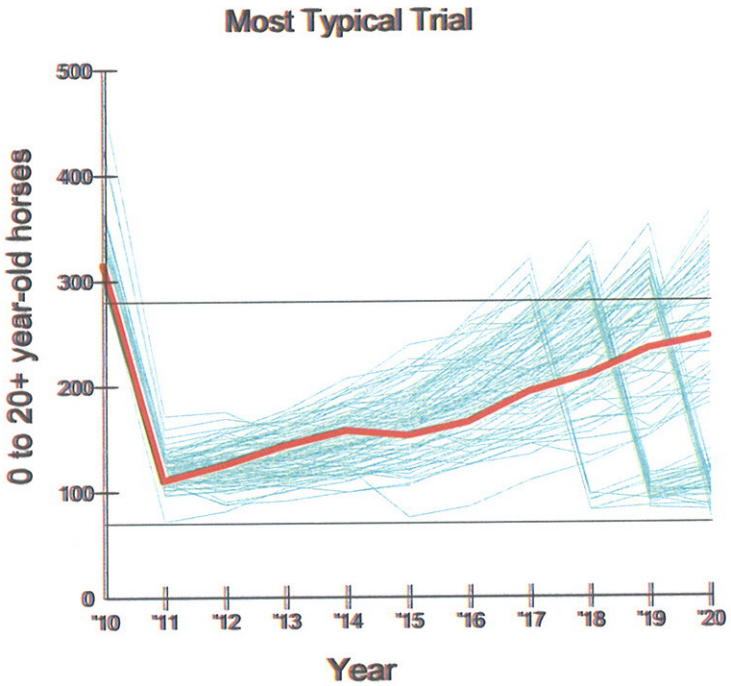


Future Gather Years



Most Typical Trial

Trial: 31

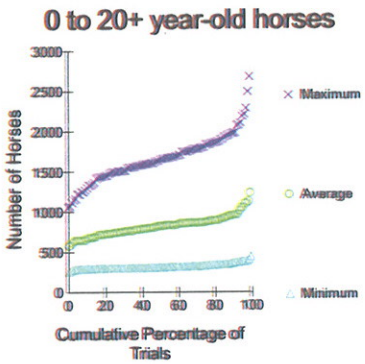


Alternative 3 (No Management)

Population Size

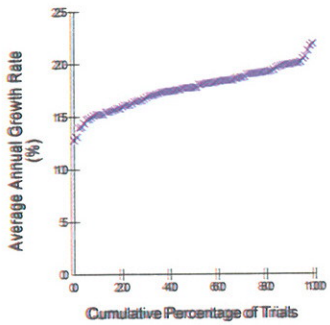
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	259	574	1060
10th Percentile	294	664	1288
25th Percentile	301	739	1500
Median Trial	311	824	1648
75th Percentile	333	871	1824
90th Percentile	363	955	1980
Highest Trial	444	1234	2684

* 0 to 20+ year-old horses



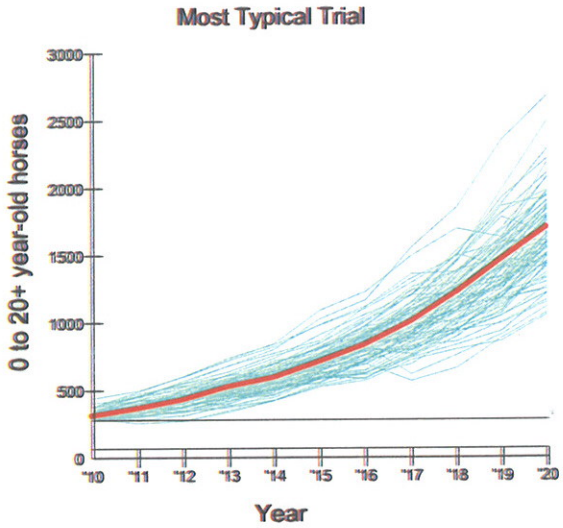
Growth Rate

Average Growth rate in 10 Years	
Lowest Trial	12.8%
10th Percentile	15.3%
25th Percentile	16.4%
Median Trial	17.8%
75th Percentile	19.1%
90th Percentile	19.9%
Highest Trial	21.9%



Most Typical Trial

Trial: 46



Population Modeling Summary – Conger Complex

To summarize the results obtained by simulating the range of alternatives for the proposed Conger Complex wild horse gather, the original questions can be addressed.

Do any of the Alternatives "crash" the population?

None of the alternatives indicate that a "crash" is likely to occur to the population. Minimum population levels and growth rates are all within reasonable levels, and adverse impacts to the population are not likely. The lowest minimum population size for each alternative is above the level that genetic testing has indicated that important genetic variability in the herd could be lost (< 50 animals).

What effect does fertility control have on population growth rate?

Alternative 1, with implement fertility control, reflects a slightly lower population growth rate than Alternative 1, without the use of fertility control, which would involve gathers only, but would modify the sex structure of the herd. This would tend to indicate that the growth rate of the herd can be reduced by modifying the sex structure slightly, without the use of fertility control.

What effect do the different alternatives have on the average population size?

The level to which the population is gathered appears to be more of an influence to average population size than fertility control. As expected, Alternative 3 results in the highest average population.

What effects do the different alternatives have on the genetic health of the herd?

The minimum population levels and growth rates are all within reasonable levels for each alternative; therefore adverse impacts to the population are not likely to occur.

Population Modeling – Conger Mountain HMA

To complete the population modeling for the Conger Mountain HMA, version 1.40 of the WinEquus program was utilized.

Objectives of Population Modeling

Review of the data output for each of the simulations provided many useful comparisons of the possible outcomes for each alternative. Some of the questions that need to be answered through the modeling include:

Do any of the alternatives "crash" the population?
What effect does fertility control have on population growth rate?
What effects do the different alternatives have on the average population size?
What effects do the different alternatives have on the genetic health of the herd?

Population Data, Criteria, and Parameters utilized for Population Modeling

All simulations used the survival probabilities, foaling rates, and sex ratio at birth supplied with the WinEquus population model for the Garfield Range in Nevada (garsurv.sin & garfoal.fin). This data was collected on Garfield Flat from 1993 to 1999 by M. Ashley and S. Jenkins.
Survival probabilities and foaling rates utilized in the population model for the four alternatives analyzed are displayed in the following table:

Survival Probabilities and Foaling Rates

Age Class	Survival Probabilities		Foaling Rates
	Females	Males	
Foals	0.919	0.877	0
1	0.996	0.950	0
2	0.994	0.949	0.52
3	0.993	0.947	0.67
4	0.990	0.945	0.76
5	0.988	0.942	0.89
6	0.985	0.939	0.76
7	0.981	0.936	0.90
8	0.976	0.931	0.88
9	0.971	0.926	0.91
10-14	0.947	0.903	0.81
15-19	0.870	0.830	0.82
20+	0.591	0.564	0.75

The following is the sex ratio at birth utilized in the population modeling for the alternatives:

Sex ratio at Birth:

51% Males
49% Females

Although the current proposed action Alternative 1 does not include the gather of all of the horses within or around the Conger Mountain HMA the WinEquus program was utilized to calculate a typical age and sex distribution for a population of 40 horses, with a sex ratio of 51 percent males to 49 percent females. The following table illustrates the approximate age and sex distribution of the wild horses that would be returned to the Conger Mountain HMA following the implementation of Alternative 1 with a gather where all or 95% of the horses were gathered:

Alternative 1 Initial Age and Sex Distribution

Age Class	Sex		
	Female	Male	Total
Foals	0	0	0
1	0	0	0
2	0	0	0
3	0	1	1
4	1	1	2
5	3	3	6
6	2	4	6
7	3	3	6
8	2	1	3
9	3	2	5
10-14	0	5	5
15-19	1	3	4
20+	1	1	2
Total	16	24	40

Under Alternative 3, no wild horses would be removed from the Conger Mountain HMA. The initial age and sex distribution for this alternative was calculated using the WinEquus program based upon the number of horses observed during the latest population inventory in February, 2010. The following table illustrates the approximate age and sex distribution of the wild horses that would be within the Conger Mountain HMA in the summer of 2010, which would continue to increase under Alternative 2:

Alternative 3 Initial Age and Sex Distribution

Age Class	Sex		
	Female	Male	Total
Foals	25	26	51
1	20	19	39
2	16	15	31
3	16	15	31
4	10	9	19
5	7	8	15
6	9	8	17
7	8	7	15
8	8	9	17
9	8	9	17
10-14	10	9	19
15-19	7	8	15
20+	2	3	5
Total	146	145	291

The following table displays the removal parameters utilized in the population model for Alternatives 1 & 2 with and without the use of fertility control:

Removal Criteria (Alternatives 1)

Age	Percentages for Removals	
	Females	Males
Foal	90%	90%
1	90%	90%
2	90%	90%
3	90%	90%
4	90%	90%
5	40%	40%
6	40%	40%
7	40%	40%
8	40%	40%
9	40%	40%
10-14	90%	90%
15-19	90%	90%
20+	90%	40%

To date, one herd area has been studied using the 2-year PZP vaccine. The Clan Alpine study, in Nevada, was started in January 2000 with the treatment of 96 mares. The test resulted in fertility rates in treated mares of 6% year one, 18% year two and 32% year three. This data must be compared to normal fertility rates in untreated mares of 50/60% in most populations. The Clan Alpine fertility rate in untreated mares collected in September of each year by direct observation averaged 51% over the course of the study.

The following percent effectiveness of fertility control was utilized in the population modeling for Alternative 1:

Year 1: 94%

Year 2: 82%

Year 3: 68%

The following table displays the contraception parameters utilized in the population model for Alternative 1:

Contraception Criteria
(Alternative 1)

Age	Percentages for Fertility Treatment
Foal	100%
1	100%
2	100%
3	100%
4	100%
5	100%
6	100%
7	100%
8	100%
9	100%
10-14	100%
15-19	100%
20+	100%

Population Modeling Criteria

The following summarizes the population modeling criteria that are common to the Alternatives:

- Starting Year: 2010
- Initial gather year: 2010
- Gather interval: minimum interval of three years
- Gather for fertility treatment regardless of population size: No
- Continue to gather after reduction to treat females: Yes
- Sex ratio at birth: 49% female, 51% male
- Percent of the population that can be gathered: 80%
- Foals are included in the AML
- Simulations were run for ten years with 100 trials each

The following table displays the population modeling parameters utilized in the model:

Population Modeling Parameters

Modeling Parameter	Alternative 1 – Remove to 60 Horses (Proposed Action) with Fertility Control	Alternative 2- Remove to 60 Horses without Fertility Control	Alternative 2 – No Removal & No Fertility Control (No Action)
Management by removal only	Yes	Yes	N/A
Management by removal with fertility control	Yes	No	N/A
Threshold population size for gathers	200	200	N/A
Target population size following gathers	40	40	N/A
Foals included in AML	Yes	Yes	N/A
Gather for fertility control regardless of population size	Yes	No	N/A
Gathers continue after removals to treat additional females	Yes	No	N/A
Effectiveness of Fertility Control: Year 1	94%	N/A	N/A
Effectiveness of Fertility Control: Year 2	82%	N/A	N/A
Effectiveness of Fertility Control: Year 3	68%	N/A	N/A

Population Modeling Results – Conger Mountain HMA

Population Modeling Results

Following is a description of the population modeling results for the four alternatives analyzed for the Conger Mountain HMA. The actual output tables and graphs from the WinEquus program are located at the end of this appendix.

Population size in ten years

Out of 100 trials in each simulation, the model tabulated minimum, average, and maximum population sizes. The model was run from 2010 to 2020 to determine what the potential effects would be on population size for each alternative. These numbers are useful to make relative comparisons of the different alternatives, and potential outcomes under different management options. The data displayed within the tables is broken down into different levels. The lowest trial, highest trial, and several in between are displayed for each simulation completed. According to the creator of the modeling program, this output is probably the most important representation of the results of the program in terms of assessing the effects of proposed management, because it shows not only expected average results but also extreme results that might be possible.

Population Sizes in 11 years - Minimum

Alternative	1 with Fertility	2	3
Lowest Trial	80	64	175
10th Percentile	90	81	178
25th Percentile	97	88	184
Median Trial	**108**	**95**	**190**
75th Percentile	118	100	200
90th Percentile	128	104	210
Highest Trial	157	112	282

This table shows that in eleven years and 100 trials for each alternative, the lowest number of 0-20+ year old horses ever obtained was 61 under Alternative 1 with use of Fertility. Half of the trials were greater than the median and half were less than the median. Additional interpretation may be made by comparing the various percentile points. For example, for Alternative 1 (selective removal to 60 mature horses), only 10% of the trials resulted in fewer than 86 wild horses as the minimum population, and 10% of the trials resulted in a minimum population larger than 124 wild horses. In other words, 80% of the time, one could expect a minimum population between these two values for Alternative 1, given the assumptions about survival probabilities, foaling rates, initial age-sex distribution, and management options made for this simulation.

Alternative 1 (selective removal to 60 mature horses) reflect the lowest minimum population size of all the alternatives. Alternative 3 (No Action) reflects the highest minimum population level of all of the trials.

None of the results obtained for any of the alternatives indicate that a crash of the population is likely to occur if the alternative were implemented. The level to which the population is gathered appears to be more of an influence to the population size than fertility control. The lowest population size ever obtained, 61 horses, is less than the lower level of the current management range of 60 mature wild

horses. However, for 90% of the time the simulation indicates that the population would be 90 head or more, which is slightly higher than the lower level of the management range. The simulation results also indicate that the lowest minimum population is still above the level that genetic testing has indicated is needed to maintain important genetic variability within the herd.

Population Sizes in 11 years - Average

Alternative	1 with Fertility	2	3
Lowest Trial	141	129	498
10th Percentile	164	151	586
25th Percentile	182	157	627
Median Trial	**193**	**163**	**708**
75th Percentile	202	170	775
90th Percentile	209	175	836
Highest Trial	220	183	1170

This table displays the average population sizes obtained for the 100 trials ran for each alternative. The average population size across eleven years ranged from a low of 254 wild horses under Alternative 1, to a high of 1737 wild horses under Alternative 1. The average population sizes indicated for Alternative 1 is essentially the same as Alternative 1 with fertility control. This indicates that gathering the population to 80 horses, would take several gathers with or without the use of Fertility control. It does show slightly lower population would be expected on average with the use of fertility control on mares released back into the HMA.

Population Sizes in 11 years - Maximum

Alternative	1 with Fertility	2	3
Lowest Trial	206	205	939
10th Percentile	227	219	1149
25th Percentile	260	232	1361
Median Trial	**284**	**249**	**1526**
75th Percentile	309	266	1760
90th Percentile	320	277	1887
Highest Trial	355	303	2553

This table displays the largest populations that could be expected out of 100 trials for each alternative. The figures for the Lowest Trial represent what the population is likely to be in 2020. All figures are similar under Alternative 1 and Alternative 1 with the use of fertility control. The numbers vary due to randomness and assumptions inherent to the modeling program.

Average Growth Rates in ten years

Average growth rates were obtained by running the model for 100 trials from 2010 to 2020 for each alternative. The following table displays the results obtained from the model:

Average Growth Rate in 10 Years

Alternative	1 with Fertility	2	3
Lowest Trial	9.1%	16.5%	16.1%
10th Percentile	10.8%	20.9%	20.2%
25th Percentile	12.1%	22.4%	21.7%
Median Trial	**13.6%**	**24.4%**	**23.1%**
75th Percentile	15.8%	26.2%	24.5%
90th Percentile	17.6%	27.8%	25.5%
Highest Trial	20.0%	32.6%	28.7%

Alternative 1 with use of fertility control reflects the lowest overall median growth rate. This alternative reflects a significantly lower growth rate than just removals (Alternative 1) and No Action (Alternative 3). The lowest trial growth rates do not appear to be a direct result of the management options, but appear to reflect the random nature of the model and the ability to show extremes in possible outcomes. The range of growth rates is a reasonable representation of what could be expected to occur in a wild horse population.

Totals in eleven years – Gathered, Removed and Treated

The same type of tabular data was obtained from the population model (100 trials) for the numbers of wild horses gathered, removed, and treated under each alternative, over a ten year period. Under Alternative 1, the population model indicates that at least two gathers would be necessary over the next ten year period, beginning with the proposed gather in the fall of 2010. For Alternative 1, with or without the using fertility control, the next removal would most likely be necessary in 2013. Under Alternative 1, a second gather would most likely be required in 2016, with a third gather in 2019 or 2020. This is due to the fact that only 80% of the horses can be gathered from the Conger Mtn. HMA in any one year due to the heavy tree cover and rough terrain. Under Alternative 3, no wild horses would be gathered or removed from the HMA.

Totals in 11 Years -- Gathered

Alternative	1 with Fertility	2	3
Lowest Trial	493	321	0
10th Percentile	568	348	0
25th Percentile	608	388	0
Median Trial	**655**	**510**	**0**
75th Percentile	686	542	0
90th Percentile	702	571	0
Highest Trial	748	594	0

Totals in 11 Years -- Removed

Alternative	1 with Fertility	2	3
Lowest Trial	102	223	0
10th Percentile	144	253	0
25th Percentile	224	288	0
Median Trial	**254**	**370**	**0**
75th Percentile	274	398	0
90th Percentile	284	418	0
Highest Trial	313	439	0

Totals in 11 Years – Treated

Alternative	1 with Fertility	2	3
Lowest Trial	132	0	0
10th Percentile	163	0	0
25th Percentile	177	0	0
Median Trial	**191**	**0**	**0**
75th Percentile	204	0	0
90th Percentile	219	0	0
Highest Trial	235	0	0

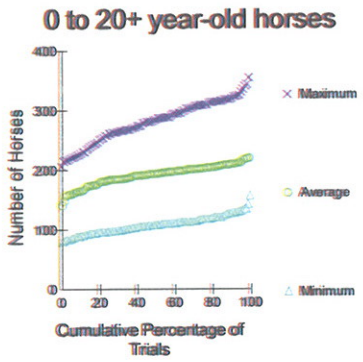
The number of horses gathered is slightly higher in Alternative 1 with or without the use of fertility control. The number of horses that would have to be removed is slightly less under Alternative 1 with the use of fertility control. Under Alternative 3, no wild horses would be gathered, removed, or treated.

WinEquus Population Modeling Outputs for the Conger HMA

Alternative 1 (Fertility Control)

Population Size

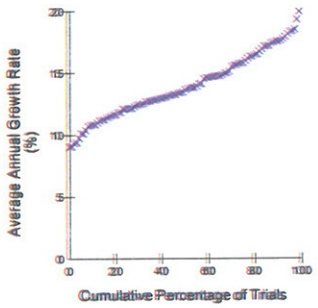
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	80	141	206
10th Percentile	90	164	227
25th Percentile	97	182	260
Median Trial	108	193	284
75th Percentile	118	202	309
90th Percentile	128	209	320
Highest Trial	157	220	355



* 0 to 20+ year-old horses

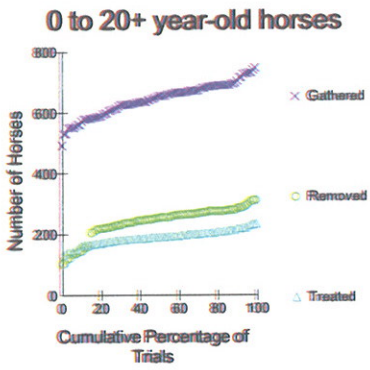
Growth Rate

Average Growth Rate in 10 Years	
Lowest Trial	9.1%
10th Percentile	10.8%
25th Percentile	12.1%
Median Trial	13.6%
75th Percentile	15.8%
90th Percentile	17.6%
Highest Trial	20.0%



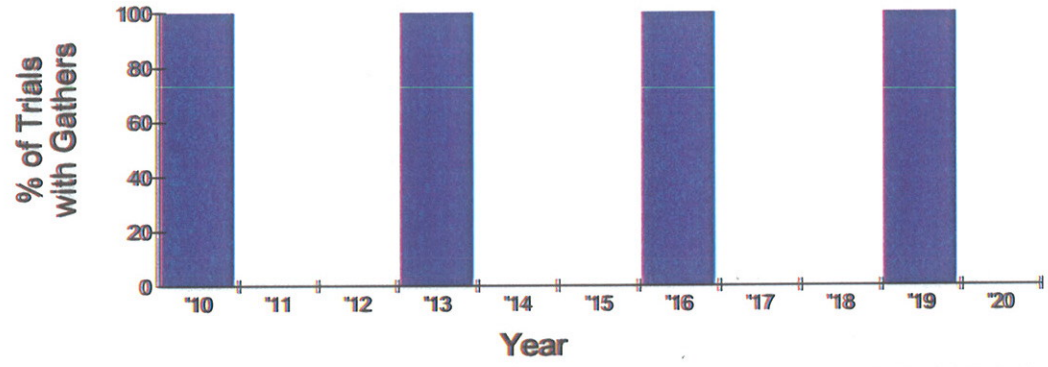
Horses Gathered and Removed

	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	493	102	132
10th Percentile	568	144	163
25th Percentile	608	224	177
Median Trial	655	254	191
75th Percentile	686	274	204
90th Percentile	702	284	219
Highest Trial	784	313	235



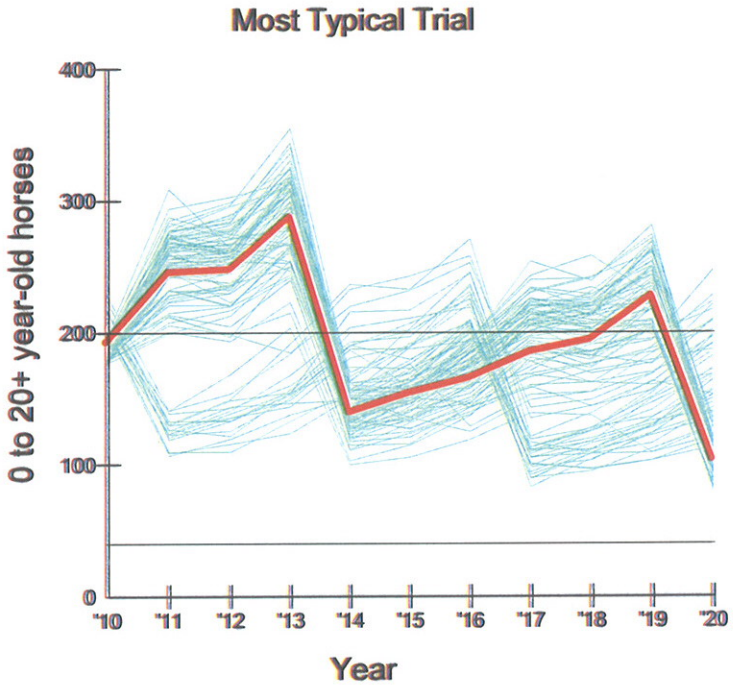
* 0 to 20+ year-old horses

Future Gather Years



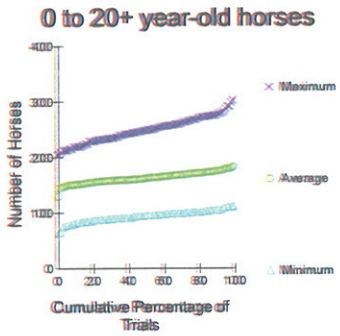
Most Typical Trial

Trial 34



Alternative 2

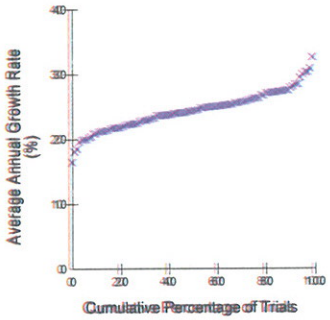
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	64	129	205
10th Percentile	81	151	219
25th Percentile	88	157	232
Median Trial	95	163	249
75th Percentile	100	170	266
90th Percentile	104	175	277
Highest Trial	112	183	303



* 0 to 20+ year-old horses

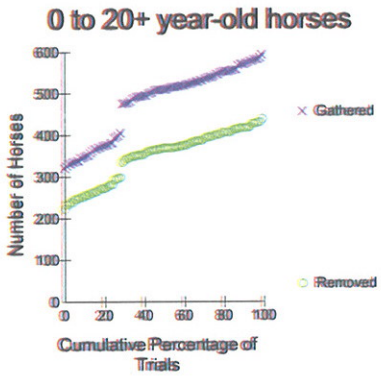
Growth Rate

Average Growth Rate in 10 Years	
Lowest Trial	16.5%
10th Percentile	20.9%
25th Percentile	22.4%
Median Trial	24.4%
75th Percentile	26.2%
90th Percentile	27.8%
Highest Trial	32.6%



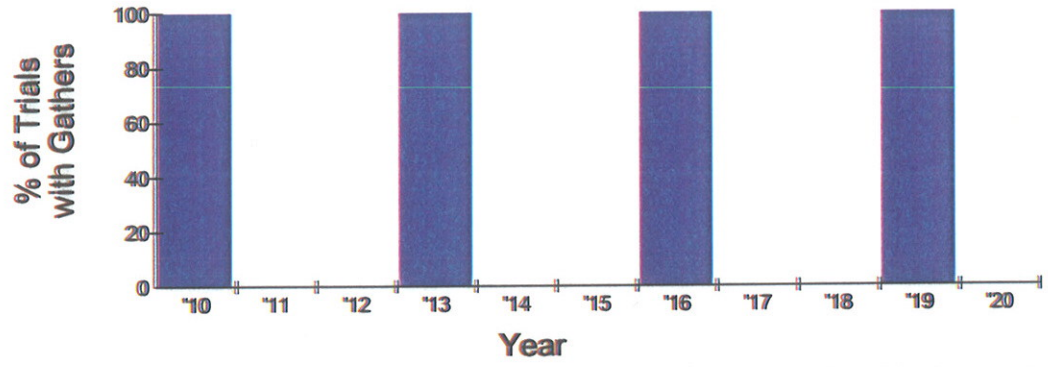
Horses Gathered, Removed, and Treated

	Totals in 11 Years*	
	Gathered	Removed
Lowest Trial	321	223
10th Percentile	348	253
25th Percentile	388	288
Median Trial	510	370
75th Percentile	542	398
90th Percentile	571	481
Highest Trial	594	439



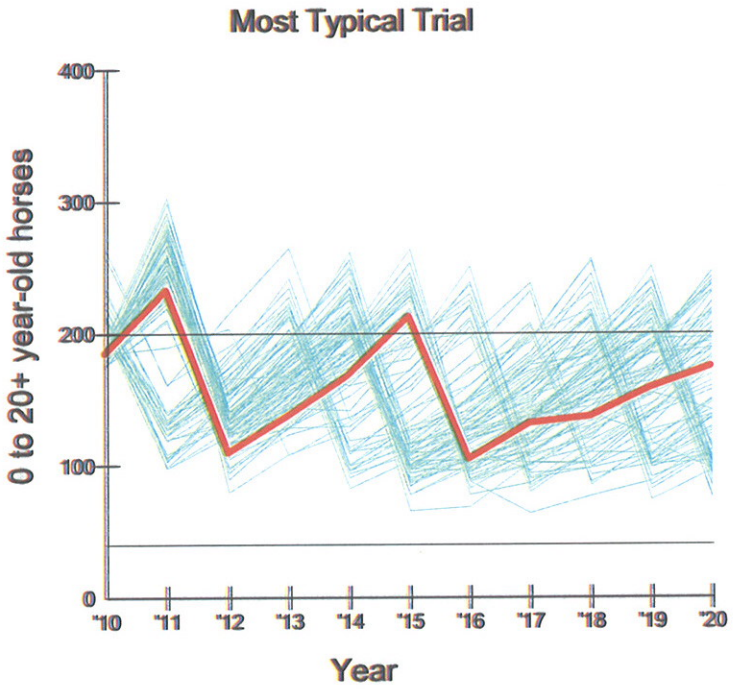
* 0 to 20+ year-old horses

Future Gather Years



Most Typical Trial

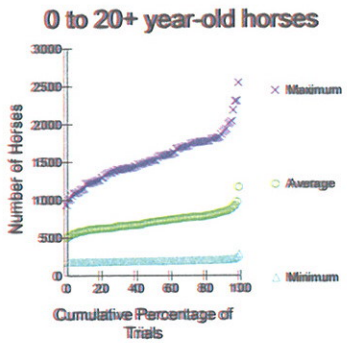
Trial 97



Alternative 3

Population Size

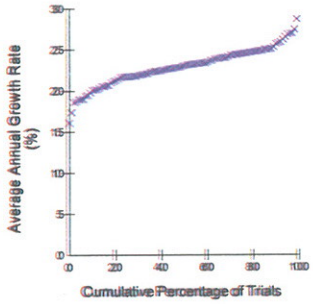
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	175	498	939
10th Percentile	178	586	1149
25th Percentile	184	627	1361
Median Trial	190	708	1526
75th Percentile	200	775	1760
90th Percentile	210	836	1887
Highest Trial	282	1170	2553



* 0 to 20+ year-old horses

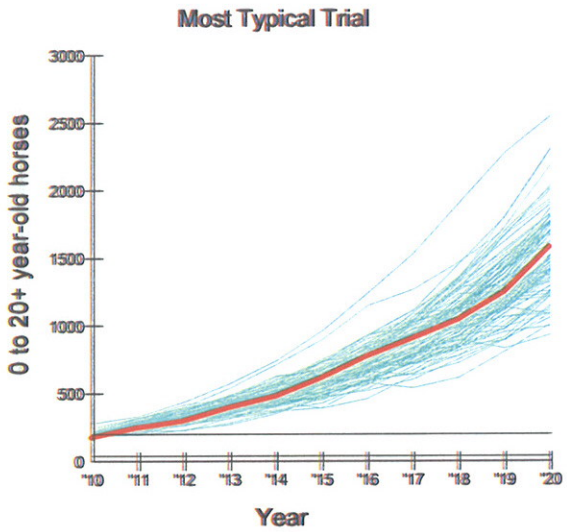
Growth Rate

Average Growth Rate in 10 Years	
Lowest Trial	16.1%
10th Percentile	20.0%
25th Percentile	21.7%
Median Trial	23.1%
75th Percentile	24.5%
90th Percentile	25.5%
Highest Trial	28.7%



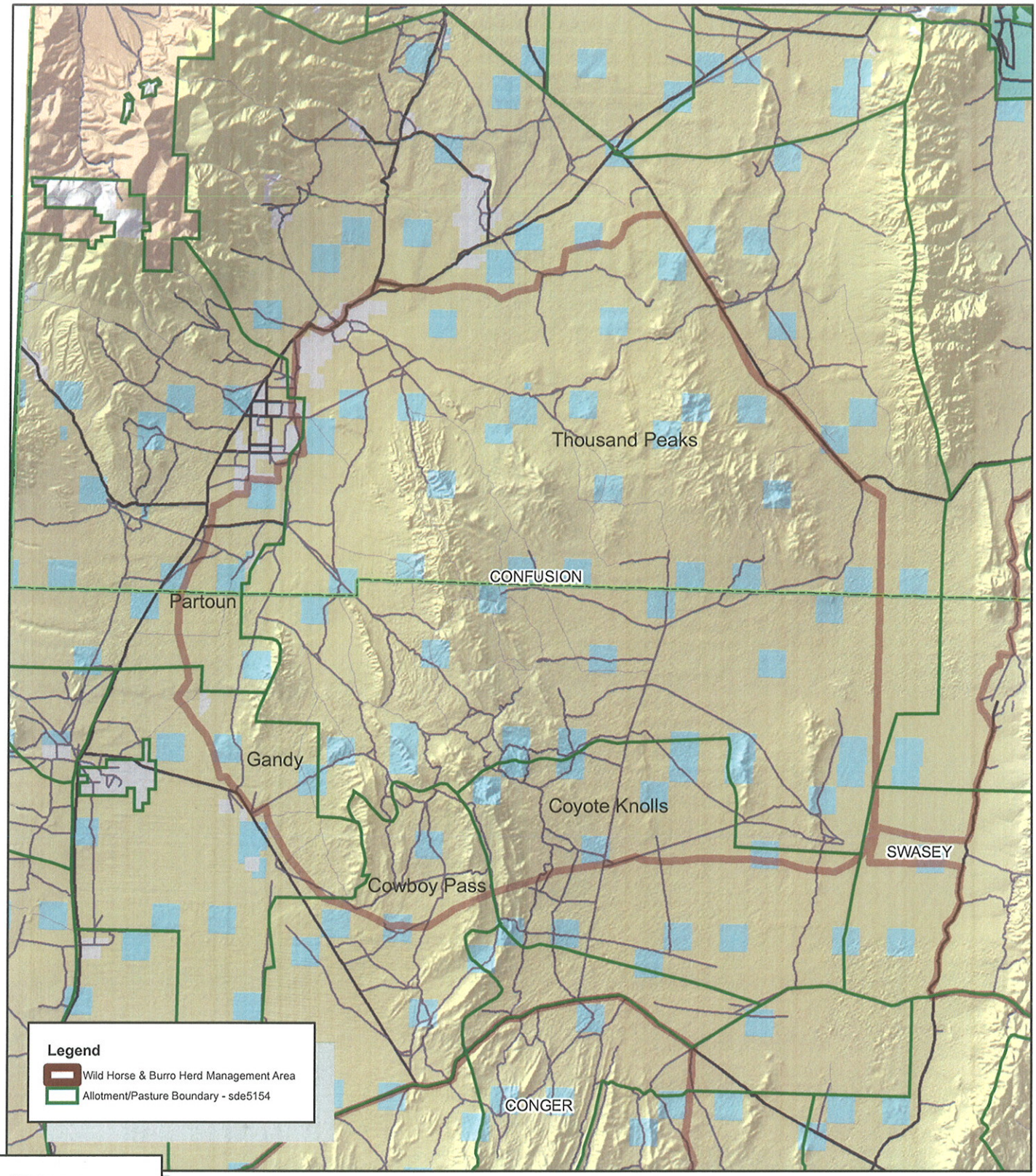
Most Typical Trial

Trial 7



APPENDIX D

Co fusion Herd Manager ent Area



N
W E
S

0 1.5 3 6 Miles

1:315,360

March 23, 2010

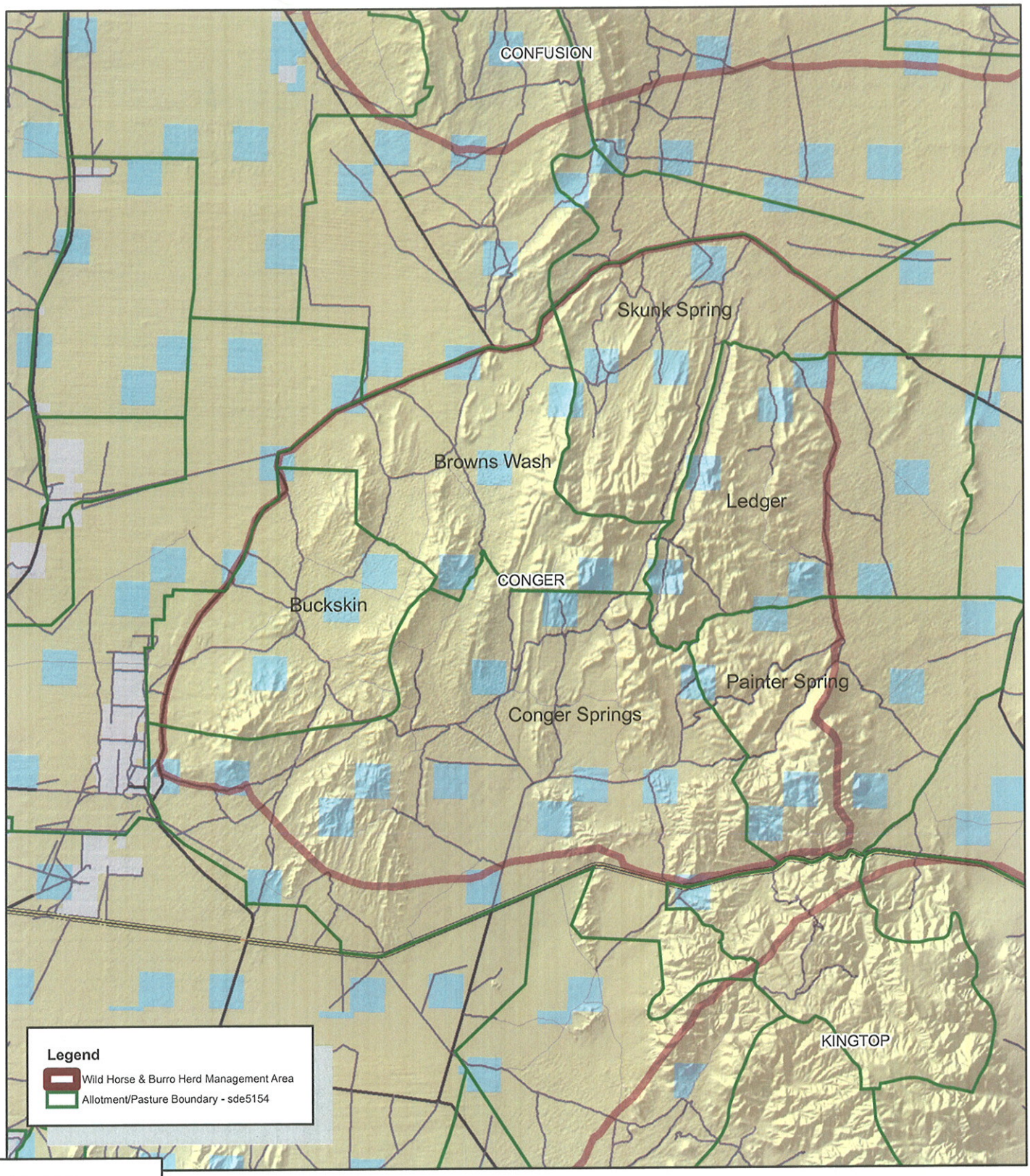
MAP 1

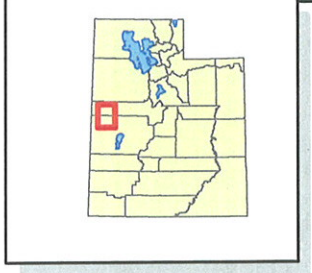
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
FILLMORE FIELD OFFICE

NATIONAL SYSTEM OF PUBLIC LANDS

This product may not meet BLM standards fo accuracy and content. Different data sources ar input scales may cause misalignment of data lay Transportation network has not been verified

Cor er Mtn Herd Manage ient Area





N
W E
S

0 1.25 2.5 5 Miles

1:252,288

March 23, 2010

MAP 2

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

NATIONAL SYSTEM OF PUBLIC LANDS

This product may not meet BLM standards fo accuracy and content. Different data sources ar input scales may cause misalignment of data lay Transportation network has not been verified

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Conger Complex Wild Horse Gather Plan

NEPA Log Number: DOI-BLM-UT-W020-2010-010-EA

File/Serial Number:

Project Leader: Eric Reid

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	The proposed action of two separate wild horse gathers over a period of two weeks would have a negligible, short-term effect on air quality.	/s/ George Cruz	5/6/2010
NI	Areas of Critical Environmental Concern	The Gandy Salt Marsh ACEC lies on the western perimeter of the Confusion Herd Management Area. Reduction of herd size will reduce any impacts by wild horses and should improve aquatic and riparian habitat at the marsh for least chub and Columbia spotted frog.	/s/SBonar	4/12/10
NP	BLM Natural Areas	There are no BLM Natural Areas within or surrounding the proposed project location.	/s/SBonar	4/12/10
NI	Cultural Resources	No potential to affect NHP	/s/ Joelle McCarthy	6/1/10
NI	Greenhouse Gas Emissions	The proposed action of two separate wild horse gathers over a period of two weeks would have a negligible, short-term effect on greenhouse gas emissions.	/s/ George Cruz	5/6/2010
NI	Environmental Justice	Implementation of the proposed action would not have a noticeable impact on environmental justice in Millard and Juab Counties.	/s/ George Cruz	5/6/2010
NP	Farmlands (Prime or Unique)	There are no prime or unique farmlands that would be affected by the proposal.	/s/ Bill Thompson	4/20/2010
NI	Fish and Wildlife Excluding USFW Designated Species	General wildlife species, such as mule deer, antelope, mountain lion, coyote, rattle snakes, lizards and jack rabbits occur within the scope of the proposed action. Managing herd numbers will benefit wildlife overall by reducing competition and improving range condition.	/s/ James Priest	5/13/10
NI	Floodplains	There are no floodplains that may be adversely impacted and the proposed action is in compliance with Executive Order 11988 on Floodplain Management.	/s/ George Cruz	4/06/2010
NI	Fuels/Fire Management	No impact to Fuels/Fire	/s/JJohnson	4/12/10
NI	Geology / Mineral Resources/Energy Production	There no current mineral activities in the area. Any impacts form this activity to mineral activities are temporary and would be passed prior to any authorization of future mineral activity	/s/J Mansfield	05/06/2010

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Hydrologic Conditions	This proposal will not adversely directly or indirectly impact hydrologic conditions in the project area or result in any cumulative effects on hydrologic conditions within or outside the project area.	/s/ George Cruz	5/6/2010
NI	Invasive Species/Noxious Weeds	See attachment for mitigation	/s/RBProbert	4/20/10
NI	Lands/Access	The project, as described, would not affect access to the public lands.	/s/ Teresa Frampton	4/6/2010
PI	Livestock Grazing	Removal of excess horses would benefit the livestock grazing program through reduced competition for vegetation and water resources.	/s/ Paul Caso	5/10/10
NP	Migratory Birds.	Given the low magnitude and short duration of the proposed action, no impacts to migratory birds are anticipated. Migratory birds may benefit from the reduction of herd numbers.	/s/ James Priest	5/13/10
NI	Native American Religious Concerns	Letters were sent to tribes on May 7, 2010. The Paiute Tribe of Utah sent a letter back stating they had no comments or concerns. Phone calls were made to the other tribes. Betsy Chapoose and Ed Navanjo were contacted and expressed no concerns. Corrina Bow and the Skull Valley Tribe could not be contacted.	/s/ Joelle McCarthy	6/01/10
NI	Paleontology	There are no known scientifically significant paleontological resources that would be impacted by this activity; there would be no impact to those resources in any case.	/s/J Mansfield	05/06/2010
PI	Rangeland Health Standards	The previous analysis indicated that the potential for soil erosion would be reduced (standard #1) and riparian areas would receive less grazing pressure which would reduce impacts to these riparian areas (standard #2) and would contribute to the maintenance of desired species (standard #3). Therefore, the potential for maintenance of Rangeland Health would be increased by removing wild horses to keep their numbers on the HMA within the appropriate management level. If no action is taken, rangeland health will deteriorate in areas where wild horses spend most of their time. Riparian vegetation would be affected and soil erosion would increase as palatable vegetation is removed from the range.	/s/ Paul Caso	5/10/10
NI	Recreation	There are no developed recreational sites or SRP activity that would be affected by the proposed activity.	/s/SBonar	4/12/10
NI	Socio-Economics	This is not the type of project that has a noticeable impact on socio-economics in Juab or Millard Counties.	/s/ George Cruz	5/6/2010
NI	Soils	The proposed action would contribute to the maintenance of sufficient vegetation and litter to protect soil from erosion.	/s/ Bill Thompson	4/8/2010
NP	Threatened, Endangered or Candidate Plant Species	There are still no known federally-listed plant species within the proposed wild horse gather operation.	/s/DWhitaker	6/1/10
NP	Threatened, Endangered or Candidate Animal Species	There are no known federally listed fish or wildlife species known to occur within or near the proposed action.	/s/ James Priest	5/13/10
NP	Wastes (hazardous or solid)	There are no know waste	/s/BCrosland	4/12/10
NI	Water Resources/Quality (drinking/surface/ground)	There would be no impacts to water resources/quality.	/s/ Paul Caso	5/6/10

Determi-nation	Resource	Rationale for Determination*	Signature	Date
NI	Wetlands/Riparian Zones	Reduction of the numbers of wild horses by implementation of the proposed action would result in reduced use of riparian vegetation by wild horses. Disturbance of riparian areas is not anticipated.	/s/ Bill Thompson	4/20/2010
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers within the proposed project location per PL111.11	/s/SBonar	4/12/10
NI	Wilderness/WSA	There are no designated wilderness areas within the field office area. The proposed project is not located within a WSA: therefore WSAs will not be affected.	/s/SBonar	4/12/10
NP	Woodland / Forestry	No impact to foresrty	/s/BCrosland	4/12/10
NI	Vegetation Excluding USFW Designated Species	As in the previous analysis, there are no anticipated negative impacts to range vegetation from the proposed Confusion horse gather. Very little ground disturbance is proposed. In addition, no special status plant species are known in the areas of the proposed trap sites.	/s/DWhitaker	6/1/10
NI	Visual Resources	The area within the proposed project area falls within VRM Class IV, and the proposed action would meet with VRM Class IV management criteria.	/s/SBonar	4/12/10
PI	Wild Horses and Burros	The removal of the 250 excess horses from the Confusion HMA and 230 excess horses from the Conger Mtn HMA will bring the populations within the established AMLs and allow for healthy rangelands, viable herds and long term sustainability.	/s/Eric Reid/	4/26/2010
NP	Areas with Wilderness Characteristics	There have been no wilderness characteristics identified within the project area.	/s/SBonar	/4/12/10

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

CONCURRENCE

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
FILLMORE FIELD OFFICE
35 East 500 North
Fillmore, UT 84631
http://enbb.blm.interwebdesign.com

IN REPLY REFER TO:

8100
(UT- 010)
June 1, 2010

Attn: Ms. Lori Hunsaker
Deputy State Historic Preservation Officer
Utah State Historical Society
300 Rio Grande
Salt Lake City, Utah 84101-1182

PART I. Project Description

County: Juab and Millard
Project Number: U-10-BL-0259b

The following undertaking is located in: Salt Lake Meridan, T. 14S R. 16 W sec.7 and T 19S R 17W sec. 19

USGS Topographic: Conger Mountain and Middle Range South

Project Name: Conger Complex Horse Gather

This undertaking involves: The BLM proposes to remove approximately 230 horses from the Conger Mountain Horse Management Area and approximately 250 from the Confusion Horse Management Area to bring the population numbers within the set Appropriate Management Level. Techniques for gathering and removal of horses would include helicopter round up, roping, water and bait trapping.

This undertaking:

- ☐ (1) is a non-routine interstate and/or interagency project or program
- ☐ (2) directly affects a National Register eligible or listed property
- ☐ (3) has been determined by BLM, the SHPO or the Council to be highly controversial
- ☐ (4) is one of the following: a land exchange, land sale, Recreation and Public Purpose lease, or transfer
- ☒ (5) is one which we wish to bring to your attention

PART II. Determination of Eligibility to the National Register of Historic Places.

BLM requests your concurrence on the determination of effect:

DETERMINATION OF ELIGIBILITY					DETERMINATION OF EFFECT ON HISTORIC PROPERTIES	
SITE NUMBER	NOT ELIGIBLE	NEED DATA	ELIGIBLE	ELIGIBILITY CRITERIA	NO HISTORIC PROPERTIES AFFECTED	NO ADVERSE AFFECT

A narrative discussing not eligible, need data, and eligible cultural resources is attached.

PART II. Determination of Eligibility to the National Register of Historic Places.
BLM request your concurrence on the following determinations of effect.

The BLM has determined this project will have no effect to Historic Properties. Any additional trap sites will be inventoried prior to use.

Please review the enclosed documentation, then sign and return this letter with your comments within ten working days.

BUREAU OF LAND MANAGEMENT, FILLMORE FIELD OFFICE

5-29-10

BY FIELD OFFICE ARCHAEOLOGIST DATE

6/1/10

BY FIELD OFFICE MANAGER DATE

UTAH STATE HISTORIC PRESERVATION OFFICER

☐ Concur ☐ Do Not Concur

DATE

COMMENTS:

COVER PAGE
Must Accompany All Project Reports

Submitted to Utah SHPO

Project Name: Conger Complex Horse Gather
Project Number.: U-10-BL-0259b
Report Date: 5-28-2010 County(ies): Millard and Juab

Principal Investigator: Joelle McCarthy Field Supervisor(s): Joelle McCarthy

Records search completed at what office(s)? Fillmore Field Office
Record search date(s): 5-18-2010

Acreage Surveyed

Intensive: 10 Recon/Intuitive:

USGS Map Reference(s): Conger Mountain and Middle Range South 7.5' series

Sites Reported	Count	Smithsonian Site Numbers
Archaeological Sites		
Revisits (no inventory form update)	0	
Revisits (updated IMACS site inventory form attached)	0	
New recordings (IMACS site inventory form attached)	0	
Total Count of Archaeological Sites	0	
Historic Structures (USHS 106 site info form attached)	0	
Total National Register Eligible Sites	0	

----------Checklist of Required Items----------

1. ☒ 1 copy of the Final Report
2. ☒ Copy of 7.5' Series USGS Map with Surveyed/Excavated Area Clearly Identified.
3. ☐ Completed IMACS Site Inventory Forms, Including
   - ☐ Parts A and B or C,
   - ☐ The IMACS Encoding Form,
   - ☐ Site Sketch Map,
   - ☐ Photographs
   - ☐ Copy of the appropriate 7.5' Series USGS Map w/ the Site Location Clearly Marked and Labeled with the Smithsonian Site Number
4. ☒ Completed "Cover Sheet" Accompanying Final Report and Survey Materials
   (Please make certain all of your checked items are attached.)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
UTAH STATE OFFICE

U.S. Dept. of the Interior
Bureau of Land Management
Utah State Office

Summary Report of Cultural Resources Inspection

State Proj. No: U-10-BL-0259b

1. Report Title: Conger Complex Horse Gather

2. Report Date: 5-28-10 3. Date(s) of Survey: 5-18-10

4. Development Company: BLM

5. Responsible Institution: BLM

6. Responsible Individuals
   Principal Investigator: Joelle McCarthy
   Field Supervisor: Joelle McCarthy
   Report Author(s): Joelle McCarthy

7. BLM Field Office: Fillmore Field Office 8. County(ies): Juab and Millard

9. Fieldwork Location:
   USGS Map: Conger Mountain and Middle Range South 7.5'
   Salt Lake Meridan, T 14 S, R 16 W, Sec. 7 and T 19S R 17W sec. 19

10. Record Search:
    Location of Records Searched: Fillmore Field Office

    Date of Record Search: 5-18-2010

11. Description of Proposed Project: The BLM proposes to remove approximately 230 horses from the Conger Mountain Horse Management Area and approximately 250 from the Confusion Horse Management Area to bring the population numbers within the set Appropriate Management Level. Techniques for gathering and removal of horses would include helicopter round up, roping, water and bait trapping.

12. Description of Examination Procedures: The gather locations were inventoried by the BLM archaeologist. A Trimble GPS unit was used to plot the location of the surveys. Additional trap sites may be necessary during the gather. If those locations are not already inventoried, the BLM archaeologist will accompany the Wildhorse and Burro Specialist to the location to clear if before and activities take place.

13. Area Surveyed:

		BLM	OTHER FED	STATE	PRIVATE
Linear Miles	Intensive:				
	Recon/Intuitive:				
Acreage	Intensive:	10			
	Recon/Intuitive:				

14. Sites Recorded:

		BLM		OTHER FED		STATE		PRIVATE	
		#	Smithsonian Site Numbers	#	Smithsonian Site Numbers	#	Smithsonian Site Numbers	#	Smithsonian Site Numbers
Revisits (no IMACS form)	NR Eligible	0		0		0		0	
	Not Eligible	0		0		0		0	
Revisits (updated IMACS)	NR Eligible	0		0		0		0	
	Not Eligible	0		0		0		0	
New Recordings (IMACS)	NR Eligible	0		0		0		0	
	Not Eligible	0		0		0		0	

Total Number of Archeological Sites: 0
Historic Structures (USHS Form): 0

Total National Register Eligible Sites: 0

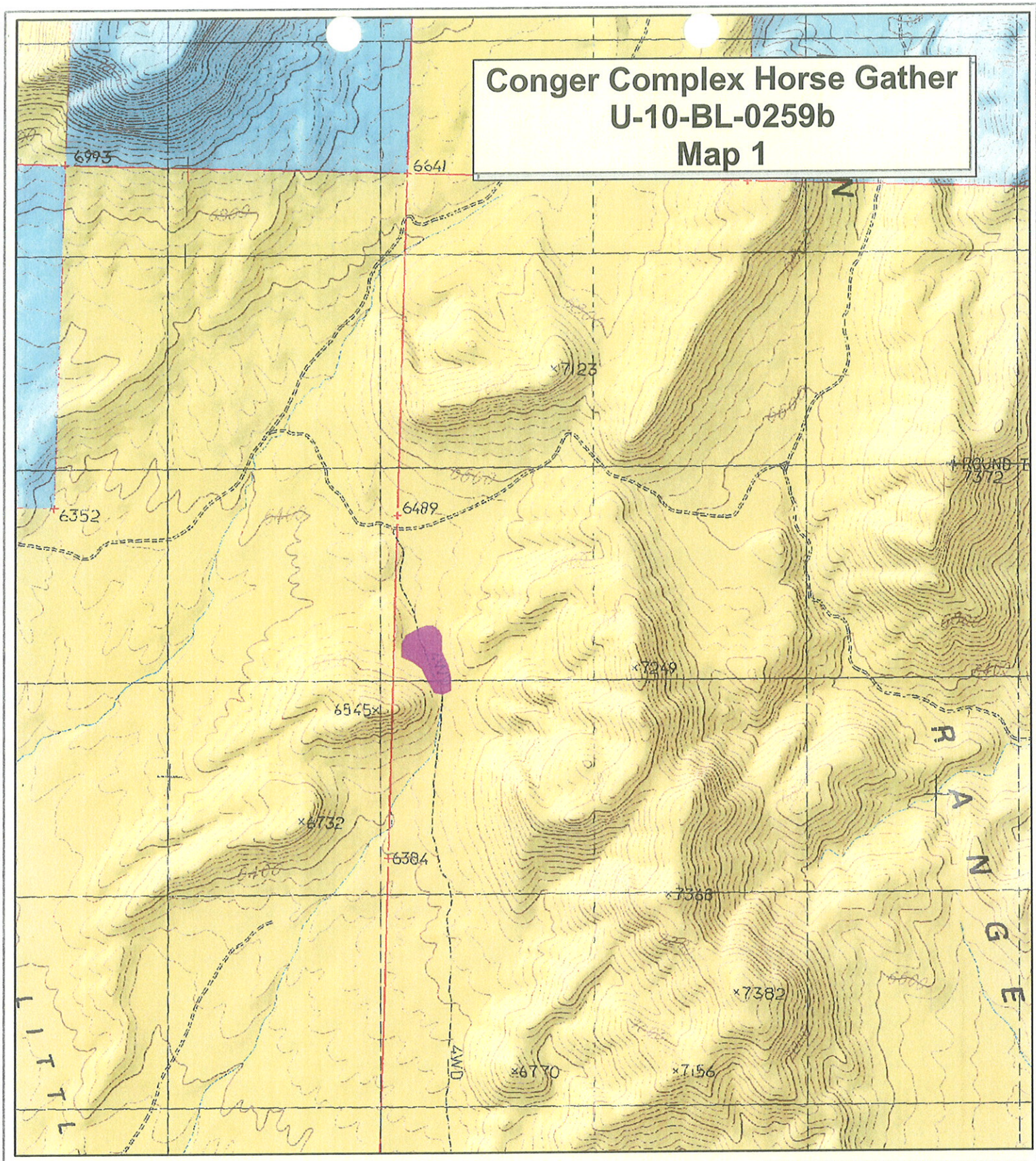
15. Description of Findings: No cultural material was observed along within the project area

16. Collection Yes ☐ No ☒

(If Yes) Curation Facility: Accession Number(s):

17. Recommendations: The project may proceed as planned. If any cultural material is discovered while implementing the project, work will stop and a cultural resources specialist will be notified immediately. The FFO has made a determination of No Histroic Properties Affected.

Conger Complex Horse Gather
U-10-BL-0259b
Map 1



T 19 S, R 16 W Section 7
Conger Mountain
Millard County, Utah

0 337.5 675 1,350 Meters

1:24,000

5-28-2010

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

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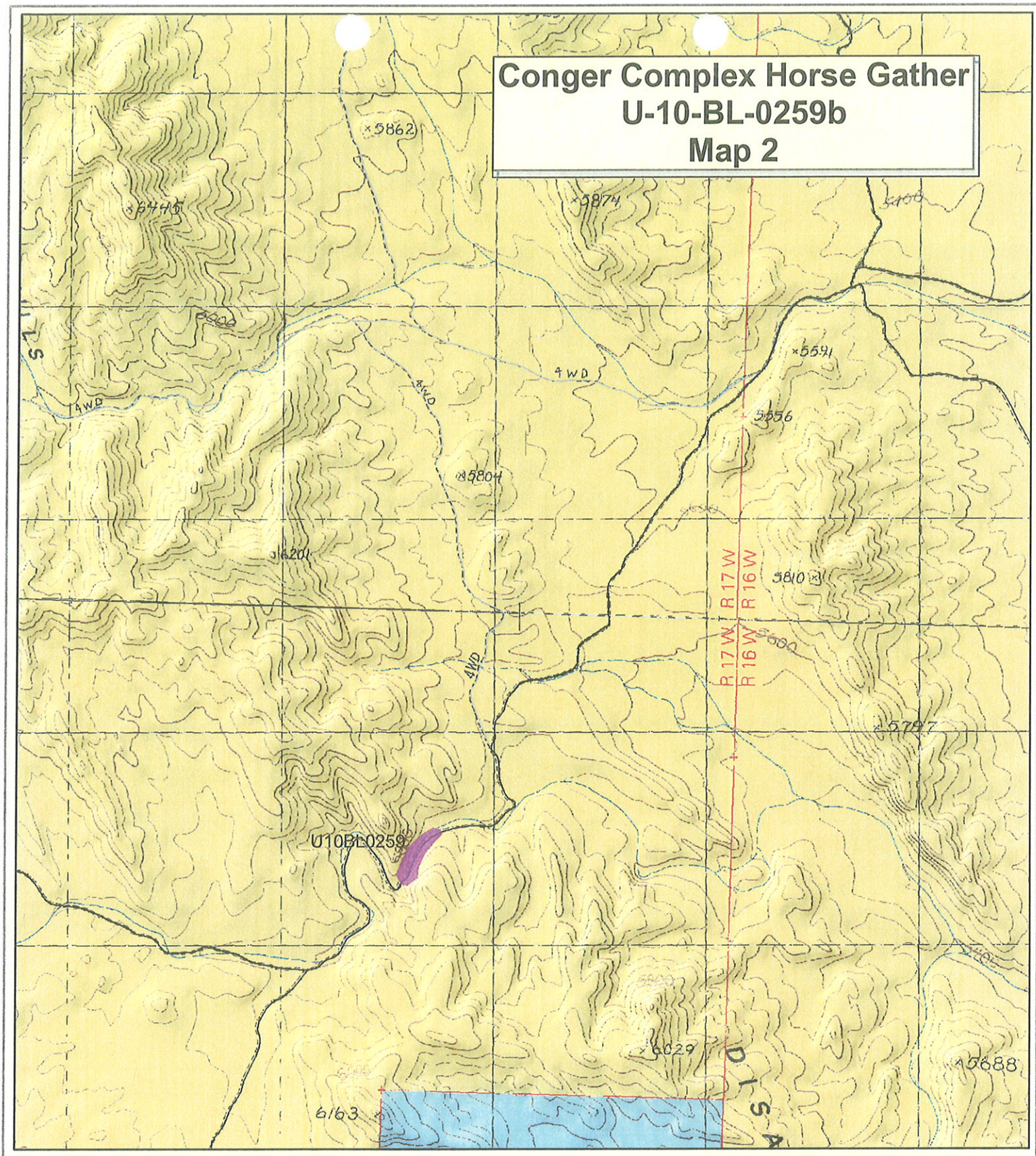

T 19S, R 17W Section 19
Middle Range South
Juab County, Utah

0 330 660 1,320 Meters

1:24,000

1 June 2010

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

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Bureau of Land Management
Fillmore Field Office
Fillmore, Utah

Cultural Resource Inventory of the proposed **2010 Confusion Gather** has been **waived** for the following reasons:

1. ___ Natural conditions are such, or previous natural ground disturbance has modified the surface so extensively that the chance of finding any evidence of cultural properties is negligible.

2. ___ Human activity within the last 50 years has created a new land surface to such an extent as to eradicate locatable traces of cultural properties.

3. ___ Existing Class II or comparable inventory data are sufficient to indicate that the specific environmental situation did not support human occupation or use to a degree that would make further inventory information useful or meaningful.

4. ___ Inventory at the Class III level of intensity has previously been performed, and records adequately documenting the location, methods, results, and reliability of the inventory are available.

5. __X__ The nature of the proposed action is such that no impact or surface disturbance can be expected on cultural deposits.

Horse gathers occur within previous disturbed areas and recover quickly after use.

12-15-09

Joelle McCarthy, Archaeologist

BUREAU OF LAND MANAGEMENT
Fillmore Field Office, Utah

AREA OF CRITCAL ENVIRONMENTAL CONCERN (ACEC) EVALUATION REPORT

Preparer: James Priest **Date Prepared:** 12-23-09 **EA/Case File Number:**
Project Name: Confusion Heard Gather
Project Proponent: BLM
Type of Project: Wild Horse Gather
Project Location: Confusion Herd Management Area
State: Utah **County:** Millard / Juab **Nearest Town:** Gandy
1:100,000 Topo Map: Fish Springs / Tule Valley
Land Form: western Utah basin-range; **Elevation:** 5, 200 ft.
Vegetative Type: west desert shrub - steppe
Description of Field Work and Date: none
Nearest Water Source and/or Riparian Habitat: Gandy Salt Marsh; Bishop Springs; various seeps and springs
Reference Sources: House Range ROD October 1987; Warm Springs April 1987; Endangered Species Act; Manual 6840 – Special Status Species Management; BLM Best Management Practices for Raptors and their Associated Habitat in Utah 2006; IM 2008-050, Migratory Bird Treaty Act – Interim Management Guidelines.

KNOWN OCCURRENCE OF FEDERALLY LISTED SPECIES:(If yes, state the species and known occurrence on an attachment.)

YES NO

[ ] [X] Federally threatened or endangered fish and/or wildlife species or habitat are known to occur within or near the project area.

[X] [ ] Special Status fish and/or wildlife species or habitats are known to occur within or near the project area.

IMPACT EVALUATION:

YES NO

[ ] [X] The project may affect Federally listed threatened, endangered, or candidate fish and/or wildlife species.

[ ] [X] The project may adversely affect Special Status fish or wildlife species.

RECOMMENDATION: (check one)

YES NO

[ ] [ ] The project may be approved as proposed.

[X] [ ] The project may be approved with the attached special stipulations/mitigation measures.

Signed: /s/ James Priest Date: 12-23-09
Wildlife Biologist

KNOWN OCCURRENCE OF A DESIGNATED ACEC:

The Gandy Salt Marsh ACEC lies near the parameters of the Confusion Herd Management Area. The 2,270 ACEC was designated in 1993 for its unique biological, riparian and threatened/endangered species values.

DIRECT, INDIRECT AND CUMULATIVE IMPACTS

The Gandy Salt Marsh is a unique community of springs and riparian habitat in the arid Snake Valley of western Utah. Two BLM special status species, the Columbia spotted frog (*Rana luteiventris*) and the least chub (*Iotichys phegethontis*) are known to occur within this community.

Proposed Action

The proposed action will involve the gathering and removal of 185 head of wildhorse from the Confusion Herd Management Area. The purpose of these periodic gathers is to reduce herd numbers to desired Appropriate Management Levels (AMLs) between 60 – 115 animals. By managing the herd to desired levels, herd health is improved and impacts to the range are minimized. The operation involves the use of traps, crews, trucks, trailers and a helicopter to round up the animals.

The Gandy Salt Marsh is not directly impacted by the proposed action but may benefit by the reduction of herd numbers. Indirectly the quality and function of the salt marsh for least chub and Columbia spotted frog may be improved by reducing the number head of wild horses that may use the salt mash for water and forage.

No Action Alternative

Under the No Action Alternative, herd numbers will continue to increase left unchecked and may reduce the quality and function of the aquatic and riparian habitat for least chub and Columbia spotted frog.

STIPULATIONS / MITIGATION MEASURES

1. The proposed action is to avoid/minimize any undue or significant impacts to the riparian habitat that will degrade or reduce the function and availability of food, cover, water and space. If habitat is degraded by activities beyond that anticipated, the BLM biologist is to be informed so that possible mitigation measures can be developed to rehabilitate the site.

2. Reference the Fish and Wildlife Biological Evaluation Report for additional applicable stipulations/mitigation measures.

Noxious Weed Clearance Fillmore Field Office

Date: 12/15/09 **Examiner:** R.B. Probert

Project Name: Confusions Wild Horse Gather

Project Location: See Proposal

County:

General Comments and Background: Noxious weeds are those exotic plant species having noxious characteristics and are of economic and/or environmental significance. Noxious weeds are designated and regulated by various State and Federal laws.

Invasive weeds are exotic species that have become naturalized in a location to levels that total control is infeasible due to extensive weed establishment and/or treatment costs.

In Millard County the following species have been identified and documented: White top also known as Hoary Cress (Cardaria draba), Squarrose knapweed (Centaurea virgata), Russian knapweed (Centaurea repens), Scotch thistle (Onopordum acanthium), Musk thistle (Carduus nutans), Perennial pepperweed (Lepidium latifolium), Spotted knapweed Centaurea maculosa, and Purple loosestrife (Lythrum salicaria).

In Juab County the following species have been identified and documented: White top also known as Hoary Cress (Cardaria draba), Squarrose knapweed (Centaurea virgata), Russian knapweed (Centaurea repens), Scotch thistle (Onopordum acanthium), Musk thistle (Carduus nutans), Leafy spurge (Euphorbia esula), Perennial pepperweed (Lepidium latifolium), Spotted knapweed Centaurea maculosa, Purple loosestrife (Lythrum salicaria), and Dalmation toadflax (Linaria genistifolia).

Presently these species have not been documented within Juab or Millard counties. They are a concern due to locations in surrounding areas. Species of concern are Black henbane (Hyoscyamus niger), Camelthorn (Alhagi pseudalhagi), Yellow starthistle (Centaurea solstitialis), Diffuse knapweed (centaurea diffusa), and Poison hemlock (Conium maculatum).

Noxious Weeds Located Within Project Area: There are no known noxious weeds located within the project area.

Mitigation: To eliminate the spread of noxious/ invasive weeds throughout the field office area one or both mitigation measures will be implemented:

1- (x) Equipment will be cleaned prior to entering the proposed project area to minimize the introduction of noxious/invasive weeds in other areas.
2- (x) Any animals/livestock used would be fed certified weed free forage.
3- ( ) Equipment will be cleaned prior to exiting the project area.

Date// 12/15/09

Signature// R. B. Robert

Threatened, Endangered & Sensitive Plant Clearance
Fillmore Field Office

DATE: December 18, 2009 **EXAMINER:** David Whitaker

PROJECT NAME: Conger Complex Wild Horse Gather 2010

PROJECT LOCATION: Conger and Confusion HMAs in the area of the Conger Mountains and the Confusion Range north of Cowboy Pass.

RESOURCE AREA: Fillmore Field Office

VEGETATION TYPE:

Description of Field Work: Literature search of the Fillmore BLM library and Richfield Field Office information.

Reference Sources: -Utah's Rare Plants Revisited (Great Basin Naturalist Vol.45, No.2)
-Plants From Millard County (BYU 1980)
-MX Final Report 1980
-1991 Habitat Survey, House Range R.A.
-1991 Habitat Survey, Warm Springs R.A.
-others

General Comments:
BLM land within the Fillmore Field Office contains no plant species that are federally listed as Threatened, Endangered, or Proposed as such. Therefore, there is no effect on any threatened or endangered plant population.

There are several plants designated as BLM sensitive species in the Fillmore Field Office area. However, none of these plant species are known to occur within the proposed wild horse trap areas. As such, no impacts to those species are anticipated.

If any sensitive species are discovered during construction activities or the project life which may be affected or disturbed, all activities that may affect this resource will cease and notification will be made to the TES plants specialist in the Fillmore Field Office.

Threatened, Endangered, or Sensitive Plants Yes___ No X

(List if Yes):

DMW

APPENDIX E

southern
utah
wilderness
alliance

BY ELECTRONIC MAIL (Eric_Reid@blm.gov)

Mr. Eric Reid
Bureau of Land Management
Fillmore Field Office
35 East 500 North
Fillmore, UT 84631

April 27, 2010

Re: Conger Complex Wildhorse Gather DOI-BLM-UT-W020-2010-010-EA

Greetings:

The Southern Utah Wilderness Alliance appreciates the opportunity to submit comments on the proposed Conger Complex Wildhorse Gather. SUWA members regularly use and enjoy Utah's spectacular public lands in the project area, particularly the region surrounding the proposed wilderness areas of Tule Valley, King Top, and Painted Rock Mountain. We are very interested in public lands issues such as this proposed wildhorse gather.

We agree that this wildhorse gather should take place. It is critical for this region that the wildhorse population is maintained within the set Appropriate Management Level (AML). Because the wildhorse population has exceeded the set AML, we agree that the population must be reduced. It is absolutely necessary, however, that this project is done without the use of off-road vehicles.

Sincerely,

/s/ Greg Osborne

Greg Osborne
Legal Intern