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

Final Environmental Assessment
DOI-BLM-UT-C010-2010-0047-EA

NORTH HILLS WILD HORSE MANAGEMENT PLAN AREA (WHMPA)
WILD HORSE GATHER PLAN

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1.0 Purpose and Need for the Proposed Action

1.1 Introduction

This Environmental Assessment (EA) has been prepared to analyze the Bureau of Land Management (BLM) Cedar City Field Office's (CCFO) proposal to gather and remove 210 excess wild horses from within and outside the North Hills Wild Horse Management Plan Area (WHMPA) in or after December 2010.

This EA is a site-specific analysis of the potential impacts that could result from the implementation of the Proposed Action or alternatives to the Proposed Action. The EA assists the BLM CCFO in project planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether "significant" impacts could result from the analyzed actions. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI).

This document is tiered to the *Pinyon Management Framework Plan/Final EIS (MFP; 1983)* and the approved Herd Management Area Plan (HMAP) EA for the North Hills Wild Horse Management Plan Area (EA-UT-040-7-39; April 25, 1977). Should a determination be made that implementation of the Proposed Action or alternative actions would not result in "significant environmental impacts" or "significant environmental impacts beyond those already addressed in the MFP/EIS and MFP Record of Decision," a FONSI will be prepared to document that determination and a Decision Record issued providing the rationale for approving the chosen alternative.

1.2 Background

The North Hills HMA comprises approximately 49,900 acres of BLM-administered, state and private lands. The HMA is managed in cooperation with the United States Forest Service (USFS) - Dixie National Forest, Pine Valley Ranger District's North Hills Wild Horse Territory, which consists of approximately 24,029 acres. Together, the combined area is referred to as the North Hills Wild Horse Management Plan Area (WHMPA). The WHMPA is located in Iron and Washington Counties, about 2 miles northwest from Enterprise, Utah (See Map 1).

The Appropriate Management Level (AML) was established for the North Hills HMA and the USFS Wild Horse Territory together as a population range of (40-60) wild horses in the North Hills Wild Horse Management Plan (HMP)/EA (EA-UT-040-7-39; April 25, 1977) and was reaffirmed in the Pinyon MFP (1983) and the Dixie National Forest Land and Resource Management Plan (FLRMP; September 2, 1986). The HMP estimated that the wild horses use the BLM lands approximately 55% of the time and the USFS lands approximately 45% of the time. Since that period observations of field staff from the USFS and BLM have observed this estimate to be accurate. The estimated population and AMLs are separated at these percentages for reporting purposes. Based on the approximate time that the wild horses spend on the BLM and USFS lands, the AML for BLM-administered lands would be 22 -33 head and for Forest Service-administered lands the AML would be 18-27 head. The AML upper limit is the maximum number of animals which can grazed based on detailed analysis of the available water, forage, and other multiple uses. The WHMPA established site-specific management and monitoring objectives for the herd and its habitat.

Map 1 North Hills HMA and USFS Wild Horse Territory

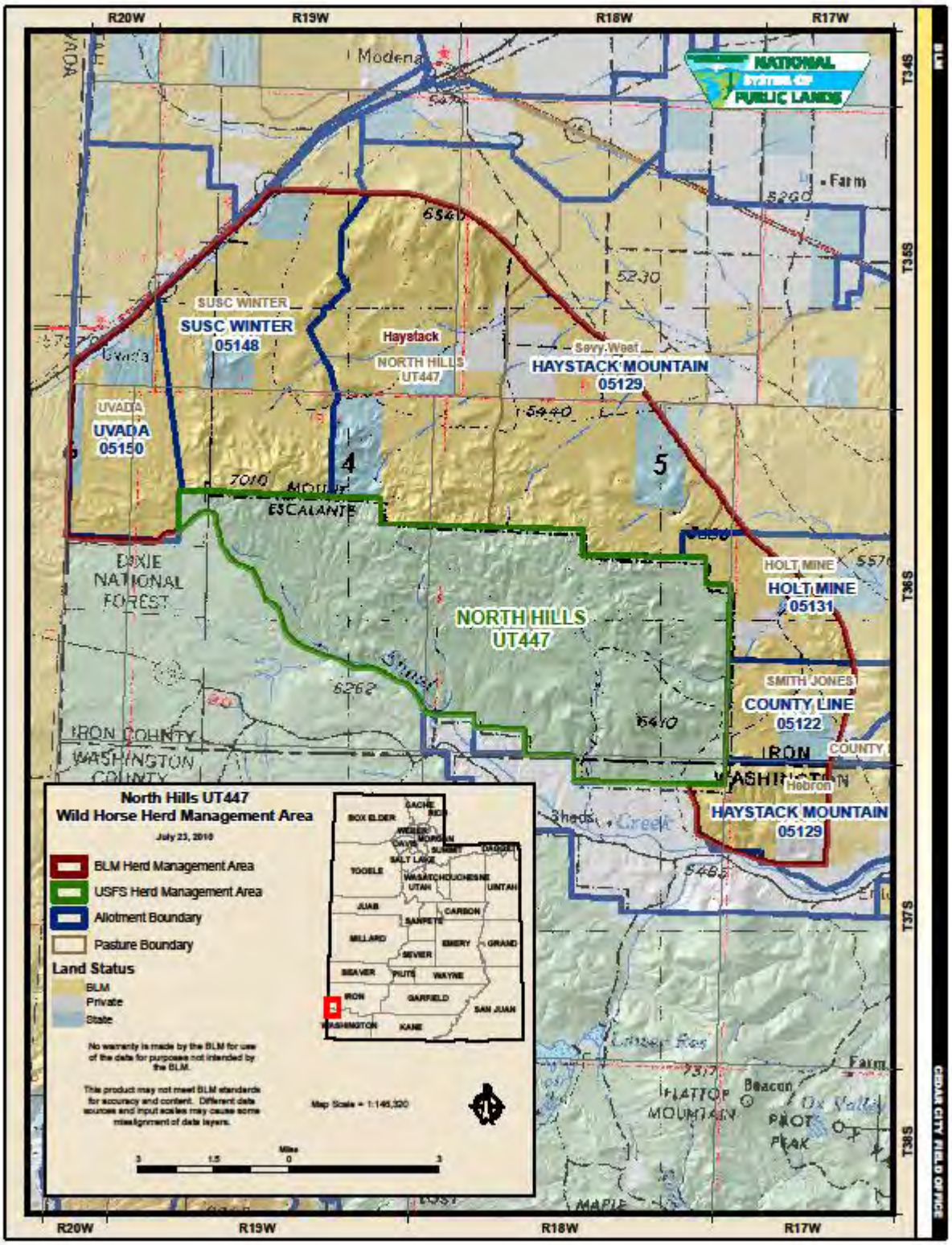

Table 1. Current AML for North Hills HMA and USFS Wild Horse Territory

HMA	Total Acres	Appropriate Management Level	Estimated Population	Proposed Removal	% of AML
North Hills HMA	**49,909 (BLM 40,629)**	22 -33	140	118	655%-424%
FS WH Territory	**24,029**	18-27	94	76	522%-348%
Outside	**0**	**0**	16	16	-
Total	**73,938**	**40-60**	250	210	625%-417%

The current estimated population of wild horses within the WHMPA is estimated at 250 wild horses. This number is based on an aerial survey direct count completed in January 2010. An estimated 90% of the total population was counted based on coverage, weather, terrain, tree cover, snow cover, and knowledge of the WHMPA/horses, estimating 208 head of wild horses at that time. It is now estimated that by addition of the spring of 2010 the foal crop and survival of these foals increased the estimated wild horse population within the WWHMPA by 20%. When the 20% increase of the 2010 spring foal crop is added to the population inventory, the current population in the WWHMPA is estimated at 250 head or 500% of AML (Appendix 8).

The last gather of this WHMPA occurred in July of 2007. At that time, 88 wild horses were gathered, 86 removed, and 2 released back to the range. Post-gather, about 50 wild horses with a sex ratio of 50%/50% males/females remained within the WHMPA. It is unclear how the population within the WHMPA jumped so rapidly in three years. There are several possible explanations for the rapid population increase; these are not limited to, but may include the following: (1) horses moved into the area from adjacent wild horse areas, (2) wild horses may have been captured illegally by members of the public in other wild horse areas and moved into this area (this illegal activity has been suspected in past years), (3) domestic or estray horses may have been released into the WHMPA, etc.

Based upon all the information available at this time, the BLM has determined that 210 excess wild horses exist within the WHMPA and need to be removed. This assessment is based on the following factors including, but not limited to, the following:

- A population inventory of wild horses in January 2010 showed the North Hills HMA and FS Wild Horse Territory to have 168 excess wild horses above the lower AML.
- Use by wild horses is exceeding the forage allocated for their use by five times.
- By comparison, livestock use has averaged only 44 % of that authorized over the last 10 years.
- Utilization monitoring, completed in 2010, documents Moderate to Heavy utilization by wild horses on key forage species within the HMA.

1.3 Purpose and Need for the Proposed Action

The purpose and need for the Proposed Action is to remove excess wild horses from within the North Hills WHMPA and to remove all horses that have moved outside the HMA or FS wild horse territory. Included would be application of fertility control to mares released following the gather and adjustment of sex ratios

to favor males. Any wild horses located outside the HMA or USFS Wild Horse Territory (in areas not designated for their use) would also be removed.

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 Proposed Action conforms to the Pinyon MFP, approved June 10, 1983. The MFP decision (RM 1.8, WH 1.1…) outlines: "Continued cooperative management of the North Hills herd with the Dixie National Forest in accordance with the existing management plan. Horses in this unit will be maintained between 40 and 60 horses as specified in the plan."

The MFP also states that the number of herd units and the population of each herd would depend on the results of monitoring studies, range condition, viewing opportunities, cooperative management, and range developments.

The Proposed Action is also in compliance with the Dixie National Forest FLRMP, approved September 2, 1986. This plan reaffirms management objectives for the North Hills WHMPA. The proposed action would not conflict with decisions throughout the FLRMP.

1.5 Relationship to Laws, Regulations, and Other Plans

In conformance with the policy developed by the BLM's Utah State Director and approved by the Secretary of Interior, the Proposed Action Alternative would be in compliance with the following:

Gathering excess wild horses is in compliance with Public Law 92-195 (WFRHBA) as amended by Public Law 94-579 (FLPMA), and Public Law 95-514 (Public Rangelands Improvement Act [PRIA] of 1978). WFRHBA, as amended, requires the protection, management, and control of wild free-roaming horses and burros on public lands. And the preparation and transport of wild horses will be conducted in conformance with all applicable state statutes.

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

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

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

43 CFR 4700.0-6 (e): Healthy excess wild horses for which an adoption demand by qualified individuals exists shall be made available at adoption centers for private maintenance and care.

43 CFR 4710.3-1 "Herd management areas shall be established [through the land use planning process] 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."

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

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

43 CFR 4740.1 "(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."

Under 43 CFR 4180, it is required that all BLM management actions achieve or maintain healthy rangelands.

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

Section 106 of the National Historic Preservation Act requires federal agencies to determine the possible effects of their actions on historic properties (those archaeological or historic sites eligible for or listed on the National Register of Historic Places). See 36 CFR 800 for a description of this process..

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

The proposed Action is also in conformance with Decision Records and Finding of No Significant Impacts for the EA-UT-040-7-39 Environmental Assessment Record, North Hills Wild Horse Management Plan (signed 4/25/77); EA-UT-044-93-29 North Hills Wild Horse Removal (signed 5/6/1993); EA-UT-044-00-22 North Hills Emergency Wild Horse Gather Plan (signed 8/10/00); EA-UT-042-02-07 North Hills Wild

Horse Gather Plan (signed 1/28/02); and DNA-UT-040-07-23 North Hills Wild Horse Gather (signed 7/10/07).

The proposed action complies with BLM Utah Riparian Management Policy (Instruction Memorandum [IM] UT-93-93, March 1993). This policy states that riparian areas will be maintained in or improved to "Proper Functioning Condition." In addition, the Proposed Action and No Action Alternative would comply with the following laws and/or agency regulations, other plans and are consistent with federal, state and local laws, regulations, and plans to the maximum extent possible.

- Taylor Grazing Act (TGA) of 1934
- FLPMA of 1976 (43 U.S.C. 1701 et seq.) as amended
- PRIA of 1978
- Endangered Species Act (ESA) of 1973, as amended
- Bald and Golden Eagle Protection Act of 1962
- BLM Manual 6840 – Special Status Species Management
- Migratory Bird Treaty Act
- Utah Comprehensive Wildlife Conservation Strategy (CWCS)
- Utah Partners in Flight Avian Conservation Strategy Version 2.0
- Birds of Conservation Concern 2002
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- IM 2008-50, Migratory Bird Treaty Act – Interim Management Guidance
- Protection, Management, and Control of Wild Free-Roaming Horses and Burros, Title 43 CFR 4700
- Standards of Quality for Waters of the State, R317-2-6, Utah Administrative Code, December, 1997
- Utah BLM Riparian Management Policy (IM UT-93-93) of 1993
- National Environmental Policy Act of 1969, as amended
- American Indian Religious Freedom Act of 1979
- Archaeological Resource Protection Act of 1979
- National Historic Preservation Act of 1966, as amended
- Appropriations Act, 2001 (114 Stat. 1009) (66 Fed. Reg. 753, January 4, 2001)
- United States Department of the Interior Manual (910 DM 1.3).
- Standards and Guidelines for Healthy Rangelands, 1997 (BLM-UT-GI-98-007-1020)
- Fundamentals of Rangeland Health, Title 43 CFR 4180
- North Hills Wild Horse Management Plan (1977)

1.6 Decision to be Made

The authorized officer would determine whether to implement all, part, or none of the proposed action as described in Section 2.2.1 to manage wild horses within the WHMPA. The authorized officer's decision would not set or adjust AML, or adjust livestock use, as these were set through previous decisions.

1.7 Scoping and Identification of Issues

Public Involvement was initiated on this Proposed Action on July 1, 2010 by posting on ENBB. Refer to section 8.0 Public Involvement to see comments and interest from the public and organizations.

Based on internal scoping and experience with previous gathers, the following issues have been identified:

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

- Projected population size and annual growth rate (Win Equus population modeling);
- Expected impacts to individual wild horses from handling stress;
- Expected impacts to herd social structure;
- Expected effectiveness of proposed fertility control applications;
- Potential effects to genetic diversity; and
- Potential impacts to animal health and condition.

2. Impacts to vegetation/soils, riparian/wetland, and cultural resources. Measurement indicators for this issue include:

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

3. Impacts to wildlife, migratory birds, and threatened, endangered, and special status species and their habitat. Measurement indicators for this issue include:

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

1.7.1 Critical Elements of the Human Environment and other Resources/Areas of Concern

Identification of issues for this assessment was accomplished by considering the resources that could be affected by implementation of one of the alternatives, through involvement with the public and input from the BLM interdisciplinary team.

Critical elements of the human environment, as identified in BLM Handbook 1790-1, Appendix 5, must be considered. Resources within the project area that may be affected must also be discussed. Those critical elements of the human environment and resources which are not present, or are not affected by the Proposed Action or alternatives, are included as part of the Interdisciplinary team checklist (Appendix 1). Rationale for dismissing specific resources or critical elements is also contained in Appendix 1.

Those critical elements of the human environment and resources which may be affected by the Proposed Action and/or alternatives are carried forward throughout this analysis, and are discussed briefly as follows.

1.7.1.1 Rangeland Health/Vegetation

Drought conditions and overpopulation of wild horses between 1999 and 2005 have reduced forage production in some of the key wild horse habitat areas. In 2008 and 2009 similar drought conditions and high populations occurred. Although livestock numbers were reduced and/or completely removed from the allotments in the North Hills HMA during the drought, in 2007, 2008, and 2009 excess wild horses overgrazed many areas during critical growth periods. This, along with the reduced vigor of the plants because of the drought, caused mortality of key forage species throughout the WHMPA. Inadequate residual vegetation (forage) and litter remaining on certain key use areas allowed soil loss and erosion. Appendixes 2-4 contain the Rangeland Health Standards and Guidelines.

1.7.1.2 Livestock Grazing

Portions of five (5) grazing allotments are part of the HMA. All of these allotments have livestock grazing privileges. No livestock grazing occurs on the USFS Wild Horse Territory. Of these, four (4) are cattle allotments (County Line, Holt Mine, SUSC, and Uvada) and one is a cattle and sheep allotment (Haystack Mountain). Overlap of areas of use between wild horses and livestock does occur on specific sites on all the allotments causing competition for forage, water, and cover. Wild horses, wildlife, and livestock compete directly for the same cover, water, and forage resources. Year-long wild horse grazing reduces forage availability for livestock. Grazing by excess wild horses during the critical growing season and during drought conditions can reduce forage production, vigor, reproduction, and availability for several years. Detailed information about the authorized livestock use within the HMA is provided in Term Grazing Permit Renewal EAs DOI-BLM-UT-C010-2009-0009-EA and EA-UT-040-07-04 for these allotments.

1.7.1.3 Soils

Under the current situation, with wild horses above AML and current livestock and wildlife levels, inadequate residual vegetation (forage) and litter remain on certain key use areas in the herd unit, as reflected in Rangeland Health Assessments from allotments within the herd area. Soils are compacted by wild horse trails, primarily those that traverse steep terrain going to and from water sources. Horses and other species also contribute to soil compaction within riparian areas, reducing oxygenation, percolation and retarding plant growth. All these factors, which are caused at least in part by excess numbers above AML, directly affect the soil's exposure to erosive elements such as wind and water. A reduction in horse numbers would allow additional vegetation to remain on these key areas, thus providing additional protection to the soil surface.

1.7.1.4 Wildlife including: (T & E, BLM Special Status Species and Migratory Birds)

High wild horse numbers may result in increased competition for forage with wildlife, particularly big game.

1.7.1.5 Wild Horses and Burros

Rangeland resources and wild horse health have been and are currently being affected within the North Hills WHMPA, due to drought and overpopulation. Excess wild horses above the AML have reduced available forage, resulting in increased competition for available resources. Wild horses have expanded outside of the WHMPA in search of forage, water, and cover. Some interchange between horses from the WHMPA and adjacent HMAs are occurring because of the excess numbers of wild horse currently in the area. The gather and removal of wild horses from the North Hills WHMPA would have direct and indirect impacts to individual animals and the social structure of bands in the area. Most impacts would be short term (under 1 year), but some would be long term (greater than a year). These impacts will be discussed within this EA.

1.7.1.6 Wetlands/Riparian Zones

The Riparian/wetland area around Nephi Spring is affected by excess wild horses within the North Hills WHMPA. The spring is located on USFS land. The over population of any grazing animal utilizing a riparian area will impact that area.

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:

- **Proposed Action – Selective Removal of Excess Animals (Low Point AML); Apply Two-Year Fertility Control, & 60% Male Sex Ratio**
- Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control
- Alternative C: No Action Alternative – Continuation of Existing Management

2.2 Description of Alternatives Considered in Detail

2.2.1 Proposed Action – Selective Removal of Excess Animals (Low Point AML); Apply Two-Year Fertility Control, & 60% Male Sex Ratio

The Proposed Action would gather and remove approximately 80-85% of the current population or approximately 210 excess wild horses within the North Hills WHMPA and apply population controls for up to 20 wild horses remaining in the WHMPA. If gather efficiencies exceed 85% wild horses, selective removal criteria would be used to return horses to the range. Of these, about 60% would be studs, with the remainder of these being mares treated with fertility control (Porcine Zona Pellucida [PZP-22]) prior to their return. If gather efficiencies do not allow for the attainment of the Proposed Action during the fall/winter of 2010/2011, the Color Country District will return to the North Hills HMA in 2012 or 2013 to remove any additional wild horses necessary, in order to achieve the low range of AML and allow the BLM to gather a sufficient number of wild horses so as to implement the population control component of the proposed action (fertility control treatments [PZP-22] and sex ratio adjustments for wild horses remaining in the WHMPA). Any follow-up gather activities in either 2012 or 2013, and regular scheduled gathers every 4 years after the achievement of AML, would be conducted in a manner consistent with those described for the fall/winter 2010/2011 gather. A follow-up gather would be implemented two years after the fall/winter 2010/2011 gather because the remaining and released wild horses would have a heightened response to human presence and be more difficult to gather in the year immediately following the fall/winter 2010/2011 gather. Funding limitations and competing priorities may also require pushing out the follow-up gather and population control component of the Proposed Action to later years.

A population inventory would be conducted in November of 2010 or within 12 months of any follow-up gather activities in 2012 or 2013 to more accurately determine the population of wild horses on the North Hills WHMPA and surrounding area. The estimated population of wild horses determined from these inventories would be used to adjust the number of excess wild horses that would be gather, removed, and treated with population controls in order to reach the lower AML.

Excess wild horses would be selected for removal from the range based on the following priority: age class 4 and younger would be removed first; animals ages 5-10 are the lowest priority for removal and would only be removed if needed to achieve AML; animals ages 11-19 would only be removed, if needed to achieve AML; and animals 20 and older should not be removed from the HMA unless specific exceptions prevent them from being turned back and left on the range. Animals displaying characteristics associated

with Spanish Barb descent, regardless of age, would be selected for release back to the range, unless the lower limit of AML could not be achieved without their removal. Herd health and characteristics data would be collected as part of continued monitoring of the wild horse herd.

Due to the mountainous terrain and heavy tree cover, it may not be possible to achieve the necessary gather efficiency for the proposed gather in the fall/winter of 2010/2011. Population gather projections show that at 80% gather efficiency (i.e, 80% of the current estimated population of 140 horses gathered), an insufficient number of wild horses may be gathered to allow for the release of horses back onto the range to implement fertility control and sex ratios adjustments and still achieve the low range of AML. It may, therefore, be necessary to return for a second, more limited, gather after the BLM completes a post-gather population inventory and the wild horses have had an opportunity to return to their normal routines. Because wild horses will remain skittish for a period following a gather, the BLM would return in 2012 or 2013 to complete the proposed action of bringing the wild horse population to low range AML and applying population controls to slow the rate of population growth among the North Hills WHMPA herd.

Wild horses residing outside the North Hills WHMPA would be gathered and removed. Approximately 15 head of wild horses reside outside the WHMPA. Excess wild horses have negatively impacted range conditions in the area. The primary gather technique would be the helicopter-drive trapping method. The use of roping from horseback could also be used, when necessary. Multiple gather sites (traps) would be used to gather wild horses both from within or outside the WHMPA. Bait or water trapping may be used at a later date, in order to achieve AML after the initial gather attempt or to remove animals causing public safety problems or those that are on fenced private lands. No trap sites would be set up in sage grouse leks, riparian areas, cultural resource sites, or Congressionally Designated Wilderness Areas. Gather sites would be located in previously disturbed areas. All trap sites, holding facilities, and camping areas on public lands would be recorded with Global Positioning System equipment and monitored during the next several years for noxious weeds. All gather and handling activities (including gather site selections) will be conducted in accordance with Standard Operating Procedures (SOPs), found in Appendices 5 and 6.

Other data, including sex and age distribution, reproduction, condition class information (using the Henneke rating system), color, size and other information may also be recorded.

Gathered wild horses would be transported to BLM holding facilities where they will be prepared for adoption and/or sale to qualified individuals who can provide them with a good home or to long term holding (grassland pastures).

Public observation of the gather activities on public lands will be allowed and would be consistent with BLM IM No. 2010-164 and in compliance with visitation protocols for scheduled and nonscheduled visitation found in Appendix 9.

2.2.2 Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control

Alternative B would be similar to Alternative A. Once approximately 210 excess wild horses are gathered and removed, the gather would conclude. No wild horses would be released with PZP -22 fertility control and sex ratios would not be adjusted. All wild horses residing outside the North Hills HMA and USFS Wild Horse Territory would be gathered and removed. All the wild horses would be transported to BLM holding facilities where they will be prepared for adoption and/or sale to qualified individuals who can provide them with a good home or to long term holding (grassland pastures). These actions would be the same as in the Proposed Action.

2.2.3 Alternative C: No Action Alternative – Continuation of Existing Management

Under the No Action Alternative, a gather to remove excess wild horses would be deferred. Damage to the range as a result of the current wild horse population would continue to increase as wild horse populations grow at an average rate of 20-25% per year. In two years, the wild horse population would exceed 360 head or 5 times over AML (upper limit). The BLM would continue vegetation and population monitoring. Wild horses currently residing outside the North Hills HMA and USFS Wild Horse Territories would remain outside the WHMPA boundaries impacting rangeland resources on BLM and USFS lands.

Considering the limited forage and water availability within the North Hills WHMPA, it is anticipated that selection of this alternative could result in a rapid decline in the physical condition of the wild horses in the near future from increasing competition for available forage and water.

The No Action Alternative would not be in conformance with existing law and regulation, including the 1971 Wild Free-Roaming Horses and Burros Act, which requires the authorized officer to remove the animals immediately upon determination that excess wild horses are present. However, the No Action Alternative is required by NEPA analysis to provide a baseline for impact analysis.

This alternative would not be in conformance with the North Hills WHMPA or Pinyon MFP, which states: "Continue cooperative management of the North Hills herd with the Dixie National Forest in accordance with the existing management plan. Horses in this unit will be maintained between 40 and 60 horses as specified in the plan."

2.3 Alternatives Considered but Dismissed from Detailed Analysis

An alternative considered but dismissed from detailed analysis was the use of bait and/or water trapping as the *primary* gather method. This alternative was dismissed from detailed study for the following reasons:

(1) access for vehicles necessary to safely transport gathered wild horses is limited;

(2) the presence of water sources on both private and public lands inside and outside the WHMPA cannot be limited through fencing in order to bait or water trap; and

(3) the size of the area at 73,900 acres is too large to use this method making it almost impossible to restrict wild horse access to only water trap sites to the extent needed to effectively gather and remove the excess animals.

For these reasons, this alternative was determined to not be an effective or feasible method for gathering wild horses from the North Hills WHMPA.

2.3.1 Gather and Remove Excess Wild Horses Ages 0-4 years and Apply Two-Year PZP on a Three Year Gather Cycle

An alternative proposal raised in scoping comments to gather as many wild horses within the WHMPA as possible, apply two-year PZP (PZP-22) to breeding age mares, and only remove excess horses ranging from 0 to 4 years old was modeled using a three year gather/treatment interval over a 10 year period. Based on this modeling, this alternative would not result in attainment of the AML ranges for the WHMPA and the wild horse populations would continue to have an average population growth rate of 5.1% to 13.2%, adding to the current wild horse overpopulation, albeit at a slower rate of growth than the No Action alternative. The number of horses that would have to be gathered and removed in this alternative would be greater than the proposed action. This alternative would not resolve the existing overpopulation of wild horses, resource concerns and rangeland deterioration would continue, and implementation of this

alternative would result in significantly increased gather and fertility control costs relative to the alternatives that remove excess wild horses to the AML range. For these reasons, this alternative was eliminated from detailed analysis.

2.3.2 Gather and Release Excess Wild Horses Every Two Years and Apply Two-Year PZP to Horses for Release.

Another alternative to gather a significant portion of the existing population (90%) and implement fertility control treatment only, without removal of excess horses was modeled using a two-year gather/treatment interval over a 10 year period. Based on WinEquus population modeling, this alternative would not result in attainment of AML for the WHMPA. And the wild horse population would continue to have an average population growth rate of 2% to 9.7% adding to the current wild horse overpopulation, albeit at a slower rate of growth than the No Action Alternative. The modeling reflected an average population size in 11 years of 303 to 459 wild horses under a two year treatment interval. This alternative would not decrease the existing overpopulation of wild horses, resource concerns and rangeland deterioration would continue, and implementation would result in significantly increased gather and fertility control costs relative to the alternatives that remove excess wild horses to the AML range. In addition to not achieving AML, the time needed to complete a gather would also increase over time, because the more frequently an area is gathered, the more difficult wild horses are to trap. They become very evasive and learn to evade the helicopter by taking cover in treed areas and canyons. Wild horses would also move out of the area when they hear a helicopter, thereby further reducing the overall gather efficiency. Frequent gathers would increase the stress to wild horses, as individuals and as entire herds. It would become increasingly more difficult over time to repeat gathers every two years to successfully treat a large portion of the population. For these reasons, this alternative was dropped from detailed study.

2.3.3 Remove or Reduce Livestock within the HMAs

This alternative would involve no removal of wild horses and instead address the excess wild horse numbers through the removal or reduction of livestock within the HMA. This alternative was not brought forward for detailed analysis because it is outside of the scope of the analysis, and is inconsistent with the Pinyon MFP, and the WFRHBA which directs the Secretary to immediately remove excess wild horses, and is inconsistent with multiple use management. Livestock grazing can only be reduced or eliminated following the process outlined in the regulations found at 43 CFR Part 4100 and would require an amendment to the Pinyon MFP. Such changes to livestock grazing cannot be made through a wild horse gather decision. The FS North Hill Wild Horse Territory does not have livestock grazing.

Livestock permit renewals were completed from 2007 – 2010 on the allotments within and adjacent to the North Hills HMA. Each of these renewals had Environmental Assessments and Decision Records completed. These decisions established stocking rates for livestock. The decisions also established seasons of use, areas of use, kind and class of livestock and management actions to improve livestock distribution. These management actions included the establishment of grazing systems, allowable use levels, salting and herding practices. Some livestock reductions were made in these decisions on allotments within the North Hills HMA. Livestock grazing continues to be evaluated for allotments and use areas within the North Hills HMA. Monitoring and evaluation of livestock grazing is in accordance with the Pinyon MFP's Rangeland Program Summary Section IV, 17, which states:

> "Rangeland studies and monitoring programs will be continued and/or initiated to determine if rangeland management objectives are being achieved and if proposed grazing use levels must be adjusted. This monitoring program will continue on all allotments. Particular attention will be given those areas where there is high resource conflict or there is the possibility of rapid

improvement or deterioration of the rangeland resources. The concentration of rangeland monitoring will be on those allotments in the "I" category.

The monitoring program will evaluate changes in range condition and trend which includes determination of plant vigor, plant character, plant density, plant phenology, ground cover and degree of forage utilization on key species. Four primary studies will be used in this evaluation: (1) actual grazing use, (2) forage utilization, (3) range trend, and (4) climate analysis. In addition, data on wildlife habitat, riparian vegetation, and watershed condition will be collected and used as needed. When results of studies are evaluated and it is determined that the objectives are not being achieved on a specific allotment, modifications could include changes in grazing systems, livestock numbers, season of use, additional rangeland developments, or any combination of these alternatives."

The BLM is currently authorized to remove livestock from the HMA, "if necessary to provide habitat for wild horses or burros, to implement herd management actions, or to protect wild horses or burros from disease, harassment or injury" under CFR 4710.5. This authority is usually applied in cases of emergency and not for general management of wild horses or burros in a manner that would be inconsistent with the land-use plan and the separate decisions establishing the appropriate levels of livestock grazing and wild horse use, respectively. Available data also indicates that wild horse use – including where livestock use has been excluded – has resulted in excessive vegetative utilization and impacts to rangelands that are recovering from wildfire.

2.3.4 Gathering the WHMPA to upper range of AML

A post-gather population size at the upper level of the AML range would result in the AML being exceeded with the next foaling season (summer 2011). This would be unacceptable for several reasons.

The AML represents "that „optimum number' of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range" (Animal Protection Institute, 109 IBLA 119;1989). The IBLA has also held that, "Proper range management dictates removal of horses before the herd size causes damage to the rangeland. Thus, the optimum number of horses is somewhere below the number that would cause resource damage" (Animal Protection Institute, 118 IBLA 63, 75; 1991).

The upper level of the AML established within the WHMPA represents the maximum population for which thriving natural ecological balance would be maintained. The lower level represents the number of animals to remain in the WHMPA following a wild horse gather, in order to allow for a periodic gather cycle, and to prevent the population from exceeding the established AML between gathers.

Additionally, gathering to the upper range of AML, would result in the need to follow up with another gather within one year (with resulting stress on the wild horse population), and could result in overutilization of vegetation resources and damage to the rangeland if the BLM is unable to gather the excess horses in the WHMPA on an annual basis. This alternative would not reduce the wild horse population growth rate of 20-25% in the North Hills WHMPA and the BLM would not be able to conduct periodic gathers and still maintain a thriving natural ecological balance. For these reasons, this alternative did not receive further consideration in this document.

2.3.5 Wild Horse Numbers Controlled by Natural Means

This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM and FS to prevent the range from deterioration associated with an overpopulation of wild horses. It is also inconsistent with the Pinyon MFP and the North Hills WHMPA, which directs that Cedar City Field Office BLM conduct gathers as necessary to achieve and maintain the AML. This alternative is not in compliance with the Dixie National Forest FLRMP. The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. Wild horses in the North Hills WHMPA are not substantially regulated by predators. In addition, wild horses are a long-lived species with documented foal survival rates exceeding 95% and they are not a self-regulating species. This alternative would result in a steady increase in numbers which would continually exceed the carrying capacity of the range until severe and unusual conditions that occur periodically-- such as blizzards or extreme drought-- cause catastrophic mortality of wild horses.

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 Proposed Action or No Action Alternatives. 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

The North Hills WHMPA is approximately 74,000 acres and is located within an east west trending mountain range approximately 2 miles northwest of Enterprise, Utah. The wild horses primarily use the lower elevation toe-slopes and canyons. The area is jointly managed with the adjacent USFS Wild Horse Territory. The BLM has management lead for the two areas. The soils within the area are sandy with considerable amounts of surface rock and scattered rocky outcrops within the canyons resulting in wild horses having difficulty traveling long distances and having to take circuitous routes between water and forage.

The WHMPA averages 5,500 to 6,000+ feet in elevation, and supports vegetation types of big sagebrush and pinyon and juniper trees. The pinyon and juniper trees dominate the WHMPA and is very dense with minimal under story forage. Open areas outside of the pinyon and juniper canopy are dominated by big sagebrush with Indian Ricegrass and needle-and-thread grass as the primary forage species. There are warm season grasses which supplement these cool season species.

The WHMPA has one reliable summer water source (Nephi Spring), which is located on the south boundary of the USFS Wild Horse Territory (on FS property). The water is a spring source with abundant water flow. The water is located in a canyon with rocky outcrops along the north side and a vegetation jumble of pinyon/juniper, big sagebrush, and riparian vegetation such as cottonwood and willow. The riparian area is heavily trampled and over grazed with non-riparian vegetation encroaching. Animal distribution to other portions of the WHMPA is hampered by topography and vegetative cover types. Scattered ponds exist throughout the WHMPA occasionally providing water to the horses. These ponds rely on large thunder storms or heavy winter run-off in order to provide water and are not reliable from month to month. Other developments are discussed in the livestock section.

There are approximately 250 wild horses within the HMA and Wild Horse Territory. Traditionally, the lack of forage within close proximity of the Nephi Spring is causing wild horses to begin using more areas outside of the HMA and Wild Horse Territory. The lack of water and forage during the summer months, combined with the distance the animals must travel over rocky ground, results in rapid physical deterioration of the animals. In addition, overlapping wildlife dependence for the same habitat as the wild horses necessitates actions to preserve their physical condition.

3.2 Description of Affected Resources/Issues

Identification of issues for this assessment was accomplished by considering the resources that could be affected by implementation of one of the alternatives, as well as public involvement and input from the BLM's interdisciplinary team. The public was invited to participate through posting of the proposal on the Utah BLM Environmental Notification Bulletin Board on July 1, 2010. A preliminary North Hills HMA Gather Plan EA was available to the public at the Cedar City Field Office, and on-line at http://www.ut.blm.gov/ or https://www.blm.gov/ut/enbb/ or http://www.blm.gov/ut/st/en/fo/cedar_city.html for a 30-day review/comment period beginning on September 24, 2010 and ending October 24, 2010 (see section 8.0 Public Involvement).

As required by regulation [43 CFR 4740.1(b)], a public hearing was held in Salt Lake City, Utah on June 9, 2010 to discuss the use of helicopters and motorized vehicles in managing Utah BLM's wild horses and burros. No comments were received at that meeting specific to the use of helicopters and motorized vehicles in the management wild horses and burros in Utah. No comments were received about this specific proposed action at that meeting. The critical elements and other constituents of the human environment incorporate most of the public's concerns as we currently understand them. The remaining concerns will be addressed under appropriate sections of this EA.

Critical elements of the human environment as identified in BLM Handbook 1790-1, Appendix 5 must be considered. Resources within the project area that may be affected must also be discussed. Those critical elements of the human environment and resources which are not present, or are not affected by the Proposed Action or alternatives, are included as part of the interdisciplinary team checklist (see Appendix 1). Rationale for dismissing specific resources or critical elements is also contained as part of this appendix. These critical elements and resources will not be discussed further.

Those critical elements of the human environment and resources which may be affected by the Proposed Action and/or alternatives are carried forward throughout this analysis, and are discussed briefly as follows.

3.2.1 Rangeland Health/Vegetation

Vegetation production and vigor has been reduced by drought (Standard and Guideline Studies). Drought is defined as prolonged dry weather generally when precipitation is less than 75% of average annual amount (Society for Range Management 1974). Precipitation is the most important single factor determining the type and productivity of vegetation in an area. Forage production increases rapidly as precipitation increases up to about 20 inches per year (Holechek, 1989). Slight reduction from normal precipitation can cause severe reductions in plant yield in areas with less than 12 inches of precipitation (Klages 1942). During the period from 2007-2009, average annual precipitation never exceeded 12 inches within North Hills WHMPA and averaged around 75% of the normal precipitation for that area.

The current drought cycle has had a tremendous influence on rangeland vegetation. As described above, year-long grazing by wild horses has put additional stress on key forage species already affected by drought. Some key forage species have been lost. Recovery could take 5 to 15 years, depending on how severely the drought affected a particular area. Two or more years of drought have far greater impact on vegetation than one year of drought followed by normal or above-normal precipitation.

The North Hills WHMPA supports multiple vegetation types including: Pinyon-Juniper (PJ), sagebrush, grasslands, and salt desert shrub (see Table 2 below). The PJ woodland type dominates the WHMPA and is very dense with minimal understory forage. Open areas outside the PJ canopy are dominated by big sagebrush with Indian ricegrass, wheatgrass, bluegrass, and squirreltail grass as the primary forage species.

Table 2 Vegetation Within the North Hills HMA.

HMA Name	Vegetation Cover	Acres	Percent
NORTH HILLS	Juniper	37,647	51%
NORTH HILLS	Sagebrush	23,808	32%
NORTH HILLS	Pinyon-Juniper	8,112	11%
NORTH HILLS	Grassland	4,252	6%
NORTH HILLS	Salt Desert Shrub	108	0%
	Total	**73,927**	**100%**

When the 1999 to 2005 drought began, the SUSC allotments main forage species was Indian ricegrass. By 2005, the Indian ricegrass had been replaced by a warm season grass (curlygrass). Production of forage species was limited by the drought and some plants died, increasing the grazing on surviving forage species. No livestock used the allotment during this time but the wild horse population was over the AML during this time, and in fact, the wild horse population in the WHMPA was at the highest point since the passage of the Wild Horse and Burro Act of 1971. Heavy and severe utilization near water by wild horses and some wildlife (mule deer) contributed to the loss of cool season grass species, the increase in warm season grasses and the invasion of PJ.

Utilization studies that have been completed during the past 20 years, along with CCFO staff observations, suggest that as wild horse populations increase they contribute to the decrease of forage species. This is especially true in grassland, sagebrush/grassland, and seeded areas.

Four trend studies were set up within and adjacent to the North Hills HMA and USFS Wild Horse Territory by the Utah Division of Wildlife Resources (UDWR) to monitor vegetation for big game. The North Hills (30-62-08) and Sevy Hollow (30-53-98) studies are within the HMA. The Telegraph Draw Study (30-40-08) is within the Wild Horse Territory. The Northwest of Enterprise Study (30-52-08) is just outside the HMA. These studies were established in 1982 and 2003, depending on the study. All but the Sevy Hollow Study were last read in 2008. These studies are available at Utah Big Game Range Trend Studies website (http://wildlife.utah.gov/range/wmu30.htm). These studies describe the soils as being in a stable trend with browse trending slightly up and herbaceous species trending slightly down. These findings are also noted in the BLM frequency studies and the Rangeland Health Assessments that have been completed within the HMA. Frequency studies completed by the BLM on allotments that occur within the HMA suggest the trend is in general stable or static condition. It has been observed on the SUSC Allotment that grasses have converted from cool season to warm season during the 1999-2005 drought. However, the Telegraph Draw Study does have an upward trend on grasses. Additional

information on the vegetation studies have been summarized in Term Grazing Permit Renewal EAs DOI-BLM-UT-C010-2009-0009-EA and EA-UT-040-07-04.

Year-long grazing by wild horses has been one contributing factor to the downward trend of the grasses and the change from cool season grasses to warm season grasses. Horses, because they are territorial, are grazing the same areas repeatedly throughout the spring during critical growing periods for grasses. High populations of wild horses can reduce the available forage for not only the year the grasses are grazed, but also for years to come. Horses will graze the most desirable forage plants first before grazing on other species. Wild horses are capable of cropping forage much more closely than wild or domestic ruminants, causing a loss of the most desirable forage species and reducing plant diversity.

From 1996 to 2003, 2005, 2006, and 2008 to present the excess number of wild horses (numbers over AML) within the WHMPA reduced the amount of available forage for all grazing animals.

3.2.2 Livestock Grazing

Approximately 609 sheep AUMs and 4,101 cattle AUMs are permitted on five (5) allotments that have some portion of the allotment within the HMA (see Table 3 below). It is estimated that the portions of allotments within the HMA account for 1,766 cattle AUMs and 201 sheep AUMs.

Livestock preference as reflected in existing permits for the allotments that overlap North Hills HMA has remained essentially the same from 1983 to present. For the past ten years actual livestock use with the HMA or in the allotments has been substantially reduced or even eliminated during the years of drought. All of the livestock 10-year term permits have been renewed in the past four years. Adjustments to livestock grazing permits have included seasons-of-use, kind-of-livestock, AUM's, and numbers of livestock, in order to improve or maintain the vegetative condition on the allotments. As livestock grazing permits are evaluated, additional adjustments to the total number of AUM's of specified livestock grazing on each allotment, seasons-of-use, and kind-of-livestock may be made. Detailed information about the authorized livestock use within the HMA is provided in Term Grazing Permit Renewal EAs DOI-BLM-UT-C010-2009-0009-EA and EA-UT-040-07-04 for those allotments.

Table 3. Allotment Season of Use, Numbers, Kind of Livestock and AUM's in the four HMA's.

Allotment	Operator Display Name	Livestock Number	Livestock Kind	Grazing Begin	Period End	%PL	AUMs
County Line	Bracken Farms, Inc	82	cattle	04/15	10/15	84%	402
Haystack Mountain	Evans Beefmasters, Inc	497	cattle	12/01	05/16	87%	2375
	Phillip & Raelynn Garder	772	sheep	01/01	04/30	100%	609
Holt Mine	Terril & Julie Hunt	168	cattle	04/01	05/15	85%	211
		100	cattle	10/01	12/30	85%	254
SUSC	Terril & Julie Hunt	166	cattle	09/27	12/31	95%	500
Uvada	Orren Nash	66	cattle	05/16	11/15	90%	359
				TOTAL AUMs			**4,710**

During years of drought, the reduction in the amount of available forage and the utilization of forage by wild horses caused most operators to place a substantial portion of their grazing preference in non-use, as approved by the BLM. Reasons for non-use vary with the operator and area, but often include recognition that either there is not sufficient forage for both the present numbers of wild horses and the preference level of livestock grazing, and the economics of the range livestock industry are down.

Although voluntary reductions in cattle AUMs have been taken by permittees, horse numbers have remained at or above the upper AML levels throughout most of the drought years.

Wild horses will drive away livestock and wildlife from watering and feeding areas (Miller, 1981). When these resources become depleted, wildlife and wild horses will move to a new location, while livestock must be removed.

Livestock in these allotments depend on windmills, ponds, wells and water hauling during the periods they are on the allotment. The windmills are located on private and state lands. The BLM does not have water rights to the water at these windmills. Several ponds are scattered throughout the allotments and WHMPA. There is one well on the SUSC Allotment that has not been operated for several years. Most of the developments have been done for livestock grazing with additional benefits for wildlife and wild horses. These developments require maintenance annually from the livestock permittee before livestock are allowed on an allotment. When permittees do not turn any livestock on an allotment or area due to drought or other reasons, these developments are not maintained and fall into disrepair. This has resulted in reduced water sources for wild horses when they are most needed. The BLM has hauled water onto the HMA for wild horses several times during the past ten years.

Some fences have been damaged by wild horses in their natural movement and in their search for water. Most of these fences were in place before the passage of the Wild and Free Roaming Horse and Burro Act of 1971. These fences inhibit the natural and free roaming nature of the wild horses but are necessary for livestock management.

3.2.3 Soils

Under the current situation, with wild horses above AML and current livestock and wildlife levels, inadequate residual vegetation (forage) and litter remain on certain key use areas in the herd unit, as

reflected in Rangeland Health Assessments from allotments within the herd area. Wild horse trails, primarily those that traverse steep terrain going to and from water sources, are compacted by animal activity. Horses and other species also contribute to soil compaction within riparian areas, reducing oxygenation, percolation and retarding plant growth. All these factors, which are caused at least in part by excess numbers above AML, directly affect the soil's exposure to erosive elements such as wind and water. A reduction in horse numbers would allow additional vegetation to remain on these key areas, thus providing additional protection to the soil surface.

Soils within the WHMPA are variable but are generally alluvium (drainage bottoms) or colluvium (hillsides, base of slopes), which are derived from igneous parent materials. In general, these soils are not particularly fertile nor do they have a high water holding capacity, which is reflected in the vegetation community. Soils information was gathered from the Soil Survey of the Iron-Washington Area, Utah and parts of Iron, Kane, and Washington Counties (NRCS 2004 & 2005). Detailed soil information can be found at http://soils.usda.gov/survey and by following on-line prompts to the above soil survey.

A review of available data has been completed and none of the allotments associated with this HMA were found to contain critical or severe erosion condition class acreages. However, field examination of the County Line Allotment conducted in 2007 during rangeland health evaluations revealed a small area of approximately 82 public land acres (site write-up area C008) with a moderate departure from normal in hydrologic function and soil stability. Adjacent uplands were providing excessive overland and drainage flows and active gullying was occurring. Several factors are likely involved, including historic and possibly current grazing practices, loss of herbaceous understory and invasion by PJ trees. The active gullies number from 4 to 6, with gully depths approaching 10 to 12 feet in depth and six to eight feet across. Three small soil retention dams had been constructed at some time in the past, but had filled with sediment and had not been maintained recently. Water and sediment from adjacent uplands have continued to flow into these impoundment areas but with no storage capacity remaining, overflow has occurred, resulting in gullying downstream (EA-UT-040-07-04).

3.2.4 Wildlife including T & E, BLM Special Status Species and Migratory Birds

Threatened, Endangered and Candidate Species

No federally listed threatened or endangered species have been identified within the North Hills WHMPA and they will not be discussed further in this document.

Special Status Wildlife Species

BLM's 6840 Manual addresses the management of Special Status Species. Special status species are those species which are proposed for listing, officially listed as threatened or endangered, or are candidates for listing as threatened or endangered under provisions of the Endangered Species Act (ESA); those listed by a state in a category such as threatened or endangered implying potential endangerment or extinction; and, those designated by each BLM State Director as sensitive. Further guidance is provided in Utah BLM Instruction Memorandum No. UT-2007-078, which states that, "*By this Instruction Memorandum, Utah BLM adopts the existing Utah Division of Wildlife Resources (UDWR) Utah Sensitive Species List".*

The following list summarized the additional Special Status Wildlife Species (excluding species listed under ESA) recognized by management under BLM's 6840 Manual and Instruction Memorandum No. UT2007-078. The Utah Sensitive Species list is available at http://dwrcdc.nrutah.gov/ucdc/ViewReports/sslist.htm. These species are known to occur or have a high

probability of occurrences within the North Hills WHMPA.

Bald Eagle *(Haliaeetus leucocephalus)*: The bald eagle is a UDWR Sensitive Species (UDWR 2008) and was de-listed in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife (Federal Register/Vol. 72, No. 130 / Monday, July 9, 2007 / Rules and Regulations) in 2007.

Lowland riparian habitat provide primary breeding habitat (nesting) for bald eagles and agricultural lands are used as secondary breeding habitat (nesting or foraging). Bald eagles are rare winter visitors to the North Hills WHMPA. There are no known bald eagle winter roost sites or nest sites on or near the North Hills WHMPA.

Kit Fox *(Vulpes macrotis)*: The kit fox is a UDWR Sensitive Species (UDWR 2008). The kit fox was designated as a Tier II species in the Comprehensive Wildlife Conservation Strategy (UDWR 2005). Primary breeding habitat is high desert scrub.

Ferruginous Hawk *(Buteo regalis)*: The Ferruginous hawk is a UDWR Sensitive Species (UDWR 2008), Utah Partners in Flight Priority Species (Parrish et al. 2002), and Bird of Conservation Concern (USFWS 2002). The ferruginous hawk was designated as a Tier II species in the Comprehensive Wildlife Conservation Strategy (UDWR 2005). Primary breeding habitat is pinyon-juniper and secondary breeding habitat is shrubsteppe. Edges of pinyon-juniper woodland, utility structures (transmission poles), cliffs and isolated trees serve to provide nesting as well as perching structures for ferruginous hawk.

Pygmy rabbit *(Brachlagus idahoensis)*: The pygmy rabbit is a UDWR Sensitive Species (UDWR 2008). It is designated as a Tier II species in the Comprehensive Wildlife Conservation Strategy (UDWR 2005). Pygmy rabbits are considered sagebrush obligates and are reliant upon big sagebrush species for food and cover. Primary breeding habitat is shrubsteppe communities.

Mule Deer:

Mule deer habitat in the North Hills WHMPA has been identified as crucial winter range. During spring, summer and early fall, deer fed primarily on a variety of forbs and grasses, with light use on big sagebrush, black sagebrush and antelope bitterbrush. In fall and winter, deer shift their diets to shrubs including big sagebrush, black sagebrush, antelope bitterbrush, Gambel oak and curlleaf mountain mahogany.

Migratory Birds

The Migratory Bird Treaty Act (16 U.S.C. §703-712, July 3, 1918, as last amended in 1989) prohibits taking, killing, or possessing migratory birds including nests and eggs. In 2001, Executive Order 13186 was issued to outline responsibilities of federal agencies to protect migratory birds under the Migratory Bird Treaty Act (66 FR 3853-3856). Instruction Memorandum 2008-050 provides interim guidance to enhance coordination and communication towards meeting BLM's obligations to the Migratory Bird Treaty Act and Executive Order 13186.

Golden eagles may occur on the North Hills WHMPA year round. The SWreGAP Animal Habitat Model has shown know or probable winter habitat. A majority of the WHMPA would be used for foraging.

3.2.5 Wild Horses and Burros

The last removal of excess wild horses from the North Hills WHMPA was completed in July of 2007 when 88 horses were gathered and 86 were removed. Following the 2007 gather, two stallions were released back into the WHMPA. The un-gathered population was estimated at approximately 50 animals.

The current estimated population of wild horses within the WHMPA is estimated at 250 head. This number is based on an aerial survey direct count with an estimated count of 90% of the total population based on coverage, weather, terrain, tree cover, snow cover, and knowledge of the WHMPA/horses, which estimated the population at that time at 208 head of wild horse. The population inventory was conducted in January of 2010. It is estimated that in the spring of 2010 the foal crop and survival of those foals increased the estimated wild horse population within the WHMPA by 20%. When the 20% increase of the 2010 spring foal crop is added to the population inventory the current population in the WHMPA is estimated at 250 head or 500% of AML (BLM Wild Horse Gather and Population Inventory Files).

Rangeland resources and wild horse health have been and are currently being affected within the North Hills WHMPA, due to drought and overpopulation. Excess wild horses above the AML have reduced available forage, resulting in increased competition for available resources. Wild horses have expanded outside of the WHMPA in search of forage, water, and cover. Some interchange between horses from the WHMPA and adjacent HMAs are occurring because of the excess numbers of wild horse currently in the area. The gather and removal of wild horses from the North Hills WHMPA would have direct and indirect impacts to individual animals and the social structure of bands in the area. Most impacts would be short term (under 1 year), but some would be long term (greater than a year). These impacts will be discussed in this EA.

Moderate Utilization on Key Forage Species one mile from Nephi Spring.

The AML for the North Hills WHMPA was set in the North Hills WHMP and is in conformance with the

land use plans that allocated forage for wild horses, livestock, and wildlife. The BLM CCFO has attempted since the completion of the MFP in 1983 to maintain the wild horse population within the AML on the North Hills HMA. Since 1995 eight (8) gathers and removals have been conducted within the WHMPA in an attempt to keep the horse population within the AML. In 2003 and 2007 the population was down near the upper end of the AML. Gathers of wild horses within this WHMPA have proven difficult due to heavy tree cover, terrain, and horse movement. As the population increases, it becomes harder to gather the number of horses needed to reduce the population to within the AML.

Wild horse populations above AML compete for forage, water, and cover allocated to wildlife and livestock. High populations of wild horses impact riparian areas with increased trailing, vegetative use, and trampling. Wild horses will drive away livestock and native ungulates from watering and feeding areas (Miller 1981).

Because horses have a cecal digestive system and can cover longer distances than domestic ruminants, wild horses can remain in good health under forage conditions fatal to domestic ruminants (Holechek 1989). In 1999 through 2004, range conditions within the WHMPA became so bad that even though livestock use was reduced or eliminated on the BLM allotments and several hundred head of wild horses removed, health of some horses declined to critical conditions. Some horses were lost to starvation and dehydration during those years.

The overriding limiting factor for the carrying capacity of wild horses in the WHMPA is not the available forage, although this is a concern, but is the supply of reliable water during the summer months. Upland vegetation in proximity to water sources are used heavily by wild horses and wildlife, while vegetation in areas farther from water (i.e., greater than six miles) is used slightly or not at all. There are areas in the far northern part of the WHMPA that have adequate forage, but can only be used in the winter when snow is available or when summer thunder storms fill ponds. During drought conditions, as has occurred during 1999-2004 and the last few years, ponds have dried up early in the summer, concentrating wild horses on Nephi Spring and limiting the number of horses that the WHMPA could support. Livestock operators and the National Mustang Association have repaired and operated windmills within the WHMPA to sustain the current wild horse populations. The increased concentration of wild horses at these sites reduced vegetation and caused soil compaction. In 2010 early summer thunder storms filled ponds and allowed wild horses to disperse throughout the WHMPA. However, due to the high population of wild horses within the WHMPA, water hauling may need to occur before the proposed action to sustain wild horses.

The AML is not large enough to maintain a good genetic variability without introduction of horses from outside the WHMPA. A handful of horses from the different HMAs, including the Sulphur HMA, have been released into this WHMPA. This was done in accordance with recommendations from Dr. Gus Cothran's Genetic Analysis of the North Hills, UT Feral Horse Herd report (2002).

Population modeling was completed for the North Hills WHMPA using Version 3.2 of the WinEquus population model (Jenkins 2000) to analyze how the alternatives would affect the wild horse population. This modeling analyzed removal of excess wild horses with no fertility control, as compared to removal of excess wild horses with fertility control and sex ratio adjustments for released horses. The No Action (no removal) Alternative was also modeled. One objective of the modeling was to identify whether any of the alternatives "crash" the population or cause extremely low population numbers or growth rates. Minimum population levels and growth rates were found to be

within reasonable levels and adverse impacts to the population not likely. Graphic and tabular results are also displayed in detail in Appendix 7.

Table 4: **WinEquus Population Model Results for North Hills WHMPA**

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Alternative A Proposed Action (Remove to Low point of AML, Adjust Sex ratio 60-40 & Fertility Control)	**32-52**	**69-102**	**250-377**	**6.5-22.7**	**287-488**	**227-405**	**5-31**
Alternative B Remove Excess Animals (Low Point AML Without Fertility Control)	**38-51**	**74-91**	**251-346**	**9.8-25.6**	**243-382**	**229-361**	**0**
Alternative C No Action (No Removal & No Fertility Control)	246-382	540-1127	850-2294	11.9-22.3	0	0	0

3.3 Description of Affected Resources/Issues not addressed further

3.3.1 Wetlands/Riparian Zones

There are no riparian/wetland zones within the North Hills HMA on land administered by the BLM. However, the riparian/wetland area around Nephi Spring is affected by excess wild horses that occur within the North Hills WHMPA. The spring is located on USFS land on the southern boundary of the Wild Horse Territory. The spring is located in a canyon with rocky outcrops along the north side and a vegetative jumble of PJ trees, big sagebrush, and riparian vegetation such as cottonwoods and willows. The riparian area is heavily trampled and overgrazed with non-riparian vegetation encroaching. The spring is used by wildlife (mule deer, coyote, bobcats, and birds), and wild horses. No livestock or elk use this spring. The over population of any grazing animal utilizing a riparian area will impact that area. The riparian area located at Nephi Spring is currently being severely impacted from heavy grazing and trailing of wild horses. These impacts would be reduced and/or improved considerably by implementing the proposed action.

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 Proposed Action and/or the No Action Alternative. These include the direct impacts (which are caused by the action and occur at the same time and place) and indirect impacts (which are caused by the action and are later in time or farther removed in distance).

4.2 Predicted Effects of Alternatives

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

4.2.1 Rangeland Health/Vegetation

Impacts of Alternative A: The Proposed Action Alternative

Competition for forage and water between wild horses, and livestock would be directly reduced. A reduced number of wild horses within the North Hills WHMPA would improve and/or sustain rangeland health and keep use levels within management plan objectives.

A reduced demand for forage would help improve the vigor of vegetation, allow for seedling establishment, increase ground cover, and thereby maintain a thriving natural ecological balance. The recovery from the extended drought would be allowed to continue and should show improved vegetative trend of key forage species, if precipitation remains near or above long-term average levels. Long-term rangeland health would continue to be met within and/or improve within the allotments as key forage and riparian areas would receive less use, especially during time of drought when wild horse are hardest on vegetation near water. The riparian area on the FS would also be expected to make some improvement..

Reducing the wild horse population to within the AML would contribute to maintaining sufficient vegetation and litter within WHMPA to protect soil from erosion, meet plant physiological requirements, facilitate plant reproduction, and reduce potential for spread of noxious weeds.

There would be direct impacts to the vegetation immediately in and around temporary trap sites, and holding, sorting and animal handling facilities. Impacts are created by vehicle traffic and hoof action of penned horses can be locally severe in the immediate vicinity of the corrals or holding facilities. Keeping the sites approximately ½ acre in size would minimize the disturbance area. Since most trap sites and holding facilities are re-used during recurring wild horse gather operations, any impacts would remain site specific and isolated in nature. In addition, most trap sites or holding facilities are selected to enable easy access by transportation vehicles and logistical support equipment and would therefore, generally be near or on roads, pullouts, water haul sites or other previously disturbed flat spots.. These common practices would minimize the cumulative effects of these impacts.

The use of fertility control on wild horses during gathers would not impact rangeland resources and vegetation directly but would have indirect impacts, if wild horse populations were reduced or maintained within AML for longer periods of time. The lower wild horse populations or the increase in amount of time that populations are within the AML would extend the beneficial impacts describe in this section

above.

Impacts of Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control
Impacts would be the same as the proposed action. However, without slowing reproduction, a steady increase in the number of wild horses through natural foaling rates would result in impacts to vegetation. Removal of excess wild horses would be beneficial to vegetative resources but plant communities may not receive as much opportunity to recover as under the proposed action.

Impacts of Alternative C: The No Action Alternative
Under the No Action Alternative, wild horses would continue to increase in population size beyond the capacity of the habitat to provide water and forage. Heavy and severe use of vegetation resources by wild horses would continue and increase, resulting in further degradation of plant communities, increased soil erosion, and susceptibility to invasive species. Downward trends in key perennial species would be expected in conjunction with reductions in ecological condition and soil stability. The vegetative functional groups (i.e. grass, shrubs, trees etc.) would be changed as grasses are over utilized during critical growing seasons. Vegetation would also experience reduced production resulting in reduced forage availability to wildlife, livestock, and wild horses. Eventually rangeland health would be reduced below a threshold that would be difficult to recover from. Significant progress towards Pinyon MFP, Dixie National Forest FLRMP, and North Hills HMP objectives and Standards and Guidelines for Healthy Rangelands would not occur.

4.2.2 Livestock Grazing

Impacts of Alternative A: The Proposed Action Alternative
Livestock located near gather activities may be temporarily disturbed or displaced by the helicopter and the increased vehicle traffic during the gather operation. This displacement would be temporary and the livestock would move back into the area once gather operations moved. Past experience has shown that gather operations have little impacts on grazing cattle and sheep. No adjustments in permitted livestock use, active AUMs, season of use and/or terms and conditions would occur as a result of the Proposed Action. Direct impacts of the gather activities itself would be minor and short-term.

Indirect impacts to livestock grazing would be an increase in forage availability and quality, reduced competition for water and forage, and improved vegetative resources that would lead to a thriving ecological condition.

Impacts of Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control
Impacts would be the same as in the Proposed Action; however, wild horse populations may increase at a faster rate and exceed the high end of the AML sooner.

Impacts of Alternative C: The No Action Alternative
Livestock would not be displaced or disturbed due to gather operations under the No Action Alternative. However, forage conditions (quality and quantity) would continue to deteriorate on the range. As wild horse numbers increase, livestock grazing within the HMA may have to be further reduced in an effort to slow the deterioration of the range to the greatest extent possible or because rangeland conditions do not support the multiple uses for which the public lands are being managed.

4.2.3 Soils

Impacts of Alternative A: The Proposed Action Alternative

The proposed action would impact soil with minor trampling and disturbance occurring at trap sites and holding facilities. Any direct, indirect, and cumulative effects to soil resources resulting from the proposed action would be minor and short-term. The project implementation would stay on existing roads, combined with the relatively small areas used for gathering and holding operations.

Removing excess wild horses would make progress towards achieving a "thriving natural ecological balance." Implementation of the proposed action would reduce the wild horse population within the WHMPA to within the AML. It would reduce further impacts to soil resources and be in compliance with the WFRHBA and land use plan management objectives. Rangeland health and soil resources would improve with the reduced population in the long-term.

Overall, soil conditions are expected to improve after wild horse numbers are reduced. Fewer numbers of wild horses using the riparian systems would result in a lessening of soil compaction in those sensitive areas where the soils are most susceptible due to their higher moisture content. Compression-related impacts to biological soil crusts from horses would be lessened over the area with horse removal and crust cover on the highly calcareous soils would increase. Following wild horse removal, increased vegetative and biological soil crust cover should reduce wind and water erosion.

Impacts to soils with implementation of the Proposed Action would include disturbance around temporary trap sites, and holding and processing facilities. Impacts would be from vehicle traffic and the hoof action of penned horses, and would be locally severe in the immediate vicinity of the corrals or holding facilities. Generally, these activity sites would be small (less than one-half acre) in size. Soil compaction, localized wind erosion, and destruction of biological soil crusts where present, would occur at the trap sites. Since most trap sites and holding facilities would be re-used during recurring wild horse gather operations, any impacts would remain site-specific, such as access by transportation vehicles and logistical support equipment, and would generally be adjacent to or on roads, pullouts, water haul sites, or other previously disturbed flat spots. Vehicles used in the horse gather would also cause soil compaction and increased erosion in a small area. By adhering to the SOPs, adverse impacts to soils would be minimized.

Impacts of Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control

Impacts would be the same as in the proposed action. However, without slowing reproduction, a steady increase in the number of wild horses through natural foaling rates would have a more steady impact on soils. Removal of excess wild horses would be beneficial to soils, but soil resources may not get as much recovery as in the proposed action.

Impacts of Alternative C: The No Action Alternative

With the No Action Alternative, wild horse populations would continue to grow. Increased horse use throughout the WHMPA would adversely impact soils health, especially around riparian resources. As native plant health deteriorates and plants are lost, soil erosion would increase. Continued heavy wild horse use, especially around water sources, would cause further compaction, reduced infiltration, increased runoff and erosion, and loss of biological soil crusts. Compaction-caused impacts would be greatest on moist soils and soils with few coarse surface fragments. The greatest disturbance impacts to crusts would occur when the soils are dry and on highly calcareous sites. The shallow soils typical of this region cannot

tolerate much loss without losing productivity and thus, the ability to be re-vegetated with native plants. Invasive, non-native plant species would increase and invade new areas following increased soil disturbance and reduced native plant vigor and abundance. Wild horses likely transport weed propagules, and this transport would increase as horse numbers increase. This would lead to both a shift in plant composition towards weedy species and an irreplaceable loss of topsoil and productivity due to erosion. With the No Action Alternative, the severe localized trampling associated with trap sites would not occur, but this alternative would not make progress towards achieving and maintaining a thriving natural ecological balance.

4.2.4 Wildlife

Impacts of Alternative A: The Proposed Action Alternative

Wildlife

Activities using helicopters can have short-term effects on wildlife from noise and activity. Fertility control would likely decrease the wild horse population and lessen the competition between wildlife and wild horses for forage. Gather activities could potentially displace sensitive species in the short-term but would have long term beneficial effects. Some wildlife present in or near trap sites or holding facilities would be temporarily displaced. Wildlife and wildlife habitat would be indirectly affected by the Proposed Action as it pertains to resulting improvements in resource health from the removal of wild horses. Implementing the Proposed Action would reduce utilization on key forage species, improving the quantity and quality of forage available to wildlife and decrease competition for water sources.

Special Status Wildlife Species

Impacts from grazing on BLM/Sensitive Species would include competition for habitat, competition for forage, and destruction and degradation of habitat. Wild horses would compete with wildlife species for habitat that is suitable for nesting and burrowing in upland habitats such as sagebrush/grasslands.

During the North Hills gather, there is the potential that wild horses might trample and collapse underground dens and burrows of species such as the kit fox and pygmy rabbit. If occupied dens are collapsed, the inhabitants could be crushed and killed, if they are not killed, additional stress and energy would be expended to dig out the collapsed burrow or den. Temporary displacement may occur during the gather however, the impacts are expected to be minimal to kit fox and pygmy rabbit.

Bald eagles have been known to occur within the North Hills WHMPA; however, no winter roost sites have been identified in the area. It should be noted that if a new bald eagle winter roost site is discovered on public land during the gather, the BLM will monitor the site. Removal of wild horses from the North Hills WHMPA would have no direct impact on bald eagles.

Kit fox would likely use the North Hills WHMPA, however based on the season of gather, no kit fox dens would be occupied and thus, impacts would likely be low.

Potential habitat for the pygmy rabbit is primarily big sagebrush communities and washes, so the occurrence of pygmy rabbits in the North Hills gather area is likely. There is a slight possibility that those site-specific species, such as the pygmy rabbit could be trampled. Trap/holding facilities/staging areas would be placed in previously disturbed areas. If a new trap or holding facility is identified, a wildlife site inventory may be required prior to the gather.

Mule Deer

Direct impacts would consist primarily of disturbance and short-term displacement of mule deer by the low-flying helicopter and construction of the temporary trap/holding facilities. A reduction/removal of the wild horse population would decrease competition for available forage, cover, space and water between mule deer and wild horses.

Migratory Birds
Because the proposed gather would not occur during the nesting season, typically April – July, the gather would likely have a low potential for disturbance to individual nesting birds and no potential for impact to migratory bird populations.

Impacts of Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control
Wildlife impacts under this alternative would be similar to those identified in the Proposed Action.

Impacts of Alternative C: The No Action Alternative
Special Status Wildlife Species
Under the No Action Alternative impacts would continue between BLM/State Sensitive species and wild horses: such as competition for forage, and destruction and degradation of habitat. Wild horses would compete with wildlife species for habitat that is suitable for nesting, foraging and burrowing.

Mule Deer
Competition between wild horses and mule deer would continue and probably increase as the horse population increases. Downward trends in key perennial species would be expected in conjunction with reduction in ecological condition. As this occurs, vegetation would also experience reduced production levels resulting in reduced forage available to mule deer.

Migratory Birds
The No Action Alternative would have no direct impact to migratory birds since the gather would not take place. Indirect impacts would be decreased forage and cover, which would cause a loss of habitat for some species of migratory birds.

4.2.5 Wild Horses

Impacts of Alternative A: The Proposed Action Alternative
The Proposed Action would remove excess wild horses within the WHMPA and outside the North Hills WHMPA boundary. Under this alternative, excess wild horses would be removed to the lower range of the AML. The sex ratio of animals released back to the range following the gather would be slightly adjusted in favor of males and fertility control would be applied to all breeding age mares that are released. Successful implementation of this alternative requires an 85-90% gather rate in order to have enough animals available for release post-gather. Historically, gather efficiencies have averaged about 80% on this WHMPA. At this level of efficiency, all the wild horses gathered would need to be removed in order to restore population size to within the established AML. If gather efficiencies do not allow for the attainment of the Proposed Action in the winter of 2010, the Cedar City Field Office will return to the North Hills WHMPA in 2012 or 2013 to gather wild horses from the WHMPA in order to achieve the desired goal of reaching the low range of AML, as well as to gather a sufficient number of remaining horses to implement fertility control treatments and make sex ratio adjustments to control future population growth.

Assuming enough animals could be gathered in the winter of 2010 or in a follow-up gather in 2012 or 2013 to allow animals to be released post gather, all mares selected for release would be treated with a two-year PZP-22 or similar vaccine and released back to the range. Mares would be selected to maintain a diverse age structure, herd characteristics and conformation (body type). Immunocontraceptive treatments would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, see Appendix 6). 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 WHMPA, and none are expected to have long term consequences from the fertility control injections.

Studs selected for release would be released to increase the post-gather sex ratio to approximately 60% studs in the remaining herds. Studs would be selected to maintain a diverse age structure, herd characteristics and body type (conformation).

Decreased competition for forage, coupled with reduced reproduction as a result of fertility control should result in improved health and condition of mares and foals and in maintaining healthy range conditions over the longer-term. Additionally, reduced reproduction rates would be expected to extend the time interval between gathers and reduce disturbance to individual animals as well as herd social structure over the foreseeable future.

This would reduce damage to the range from the current overpopulation of wild horses and allow vegetation resources time to recover over the next 4-5 years, without the need for additional gathers once the proposed action is complete. As a result, there would be fewer disturbances to individual animals and the herd, and a more stable wild horse social structure would be provided.

Removal of excess wild horses would also improve herd health. Less competition for forage and water resources would reduce stress and promote healthier animals. Mares would continue to foal normally following the gather.

Impacts to individual animals may occur as a result of handling stress associated with the gather, gather, processing, and transportation of animals. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individuals from this impact is infrequent but does occur in one half to one percent of wild horses gathered in a given gather. Other impacts to individual wild horses include separation of members of individual bands of wild horses and removal of animals from the population. The impacts to individual animals from a follow-up gather are expected to be the same as those from the winter 2010 gather.

Indirect impacts can occur to horses after the initial stress event, and may include increased social displacement, or increased conflict between studs. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries may occur, and typically involve biting and/or kicking bruises, which do not break the skin.

Temporary Holding Facilities During Gathers
Wild horses gathered would be transported from the trap sites to a temporary holding corral within the WHMPA in goose-neck trailers or straight-deck semi-tractor trailers. At the temporary holding corral, the wild horses will be aged and sorted into different pens based on sex. The horses will be provided ample supply of good quality hay and water. Mares and their un-weaned foals will be kept in pens together. All horses identified for retention in the WHMPA will be penned separately from those animals identified for removal as excess. All mares identified for release will be treated with fertility control vaccine in accordance with the SOPs for Fertility Control Implementation in Appendix 6.

At the temporary holding facility, a veterinarian, when present, will provide 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 foot, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA).

Transport, Short Term Holding, and Adoption Preparation
Wild horses removed from the range as excess would be transported to the receiving short-term holding facility in a goose-neck stock trailer or straight-deck semi-tractor trailers. Trucks and trailers used to haul the wild horses will be inspected prior to use to ensure wild horses can be safely transported. Wild horses will be segregated by age and sex when possible and loaded into separate compartments. Mares and their un-weaned foals may be shipped together depending on age and size of foals. Mare and un-weaned foals are not separated for longer than 12 hours. 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 die during transport.

Upon arrival, 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 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 foot, and other severe congenital abnormalities) that was not diagnosed previously at the temporary holding corrals at the gather site would be humanely euthanized using methods acceptable to the 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. Recently captured wild horses, generally mares, in very thin condition may have difficulty transitioning to feed. A small percentage of animals can die during this transition; however, some of these animals are in such poor condition that it is unlikely they would have survived if left on the range.

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, 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 transport. Injury or mortality during the preparation process is low, 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% (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 die accidentally during sorting, handling, or preparation.

Adoption

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse for one year and the horse and facilities are inspected. After one year, the applicant may take title to the horse at which point the horse becomes the property of the applicant. Adoptions are conducted in accordance with 43 CFR § 5750.

Sale with Limitation

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 at least 3 times. The application also specifies that all buyers are not to sell to slaughter buyers or anyone who would sell the animals to a commercial processing plant. Sale of wild horses is conducted in accordance with the 1971 WFRHBA and congressional limitations.

Long Term Pastures

During the past 3 years, the BLM has removed 19,414 excess wild horses or burros from the Western States. Most animals not immediately adopted or sold have been transported to long-term grassland pastures in the Midwest.

Potential impacts to wild horses from transport to adoption, sale or Long Term Pastures (LTP) are similar to those previously described. One difference is that when shipping wild horses for adoption, sale or LTP, animals may be transported for a maximum of 24 hours. Immediately prior to transportation, and after every 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 2 pounds of good quality hay per 100 pounds of body weight with adequate bunk space to allow all animals to eat at one time. The rest period may be waived in situations where the anticipated travel time exceeds

the 24-hour limit but the stress of offloading and reloading is likely to be greater than the stress involved in the additional period of uninterrupted travel.

Long-term grassland pastures are designed to provide excess wild horses with humane, and in some cases 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 current adoption or sale demand (because of age or other factors such as economic recession), are currently located on private land pastures in Oklahoma, Kansas, and South Dakota. Establishment of LTP was subject to a separate NEPA and decision-making process. Located in mid or tall grass prairie regions of the United States, these LTP are highly productive grasslands compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 10-11 acres per animal). Of the animals currently located in LTP, less than one percent is age 0-4 years, 49 percent are age 5-10 years, and about 51 percent are age 11+ years.

Mares and sterilized stallions (geldings) are segregated into separate pastures except at one facility where geldings and mares coexist. Although the animals are placed in LTP, they remain available for adoption or sale to qualified individuals; and foals born to pregnant mares in LTP are gathered and weaned when they reach about 8-12 months of age and are also made available for adoption. The LTP contracts specify the care that wild horses must receive to ensure they remain healthy and well-cared for. Handling by humans is minimized to the extent possible although regular on-the-ground observation by the LTP contractor and periodic counts of the wild horses to ascertain their well being and safety are conducted by BLM personnel and/or veterinarians. A very small percentage of the animals may be humanely euthanized if they are in very poor condition due to age or other factors. Although horse residing on LTP facilities live longer, on the average, than wild horses residing on public rangelands, natural mortality of wild horses in LTP 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).

Euthanasia and Sale Without Limitation

While euthanasia and sale without limitation has been limited by Congressional appropriations, it is allowed under the WFRHBA. Neither option is available for horses under the Department of the Interior's fiscal year 2010 budgetary appropriations.

Wild Horses Remaining or Released into the WHMPA following Gather

Under the Proposed Action, the post-gather population of wild horses would be about 40 wild horses, which is the low range of the AML for the North Hills WHMPA. Reducing population size would also ensure that the remaining wild horses are healthy and vigorous, and not at risk of death or suffering from starvation due to insufficient habitat coupled with the effects of frequent drought (lack of forage and water).

The wild horses that are not captured may be temporarily disturbed and move into another area during the gather operations. With the exception of changes to herd demographics, direct population wide impacts have proven, over the last 20 years, to be temporary in nature with most if not all impacts disappearing within hours to several days of when wild horses are released back into the HMA. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

As a result of lower density of wild horses across the WHMPA following the removal of excess horses, competition for resources would be reduced, allowing wild horses to utilize preferred, quality habitat. Confrontations between stallions would also become less frequent, as would fighting among wild horse bands at water sources. Achieving the AML and improving the overall health and fitness of wild horses could also increase foaling and foaling survival rates over the current conditions.

The primary effects to the wild horse population that would be directly related to this proposed gather would be to herd population dynamics, age structure or sex ratio, and subsequently to the growth rates and population size over time.

The remaining wild horses not captured would maintain their social structure and herd demographics (age and sex ratios). No observable effects to the remaining population associated with the gather impacts would be expected except a heightened shyness toward human contact.

Impacts to the rangeland as a result of the current overpopulation of wild horses would be reduced under the two gather and removal alternatives. Fighting among stud horses would decrease since they would protect their position at water sources less frequently; injuries and death to all age classes of animals would also be expected to be reduced as competition for limited forage and water resources is decreased.

Indirect individual impacts are those impacts which occur to individual wild horses after the initial stress event, and may include spontaneous abortions in mares, and 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 skirmish which occurs among older studs following sorting and release into the stud pen, which lasts less than two minutes and ends when one stud retreats. Traumatic injuries usually do not result from these conflicts. These injuries typically involve a bite and/or kicking with bruises which don't break the skin. Like direct individual impacts, the frequency of occurrence of these impacts among a population varies with the individual.

Spontaneous abortion events among pregnant mares following capture is also rare, though poor body condition can increase the incidence of such spontaneous abortions. Given the timing of this gather, spontaneous abortion is not considered to be an issue for the proposed gather.

A few foals may be orphaned during gathers. This may occur due to:
- The mare rejects the foal. This occurs most often with young mothers or very young foals;
- The foal and mother become separated during sorting, and cannot be matched;
- The mare dies or must be humanely euthanized during the gather;
- The foal is ill, weak, or needs immediate special care that requires removal from the mother; or
- The mother does not produce enough milk to support the foal.

Oftentimes, foals are gathered that were already orphans on the range (prior to the gather) because the mother rejected it or died. These foals are usually in poor, unthrifty condition. Orphans encountered during gathers are cared for promptly and rarely die or have to be euthanized. Nearly all foals that would be gathered would be over four months of age and some would be ready for weaning from their mothers. In private industry, domestic horses are normally weaned between four and six months of age.

Gathering the wild horses during the fall/winter reduces risk of heat stress, although this can occur during any gather, especially in older or weaker animals. Adherence to the SOPs as well and techniques used by the gather contractor help minimize the risks of heat stress. Heat stress does not occur often, but if it does, death can result.

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. The 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 5). Animals that are euthanized for non-gather related reasons include those with old injuries (broken hip, leg) that have caused the animal to suffer from pain or which prevent them from being able to travel or maintain body condition; old animals that have lived a successful life on the range, but now have few teeth remaining, are in poor body condition, or are weak from old age; and wild horses that have congenital (genetic) or serious physical defects such as club foot, or sway back and should not be returned to the range.

Impacts of Alternative B: Remove Excess Animals (Low Point AML) Without Fertility Control

Impacts from this alternative would be similar to the Proposed Action, however there would be no horses released, no sex ratios would be adjusted, and fertility control would not be applied. AMLs may be achieved but would exceed the high end of AMLs sooner than the proposed action.

Impacts of Alternative C: The No Action Alternative

If No Action is taken, excess wild horses would not be removed from within or outside the North Hills WHMPA at this time. The animals would not be subject to the individual direct or indirect impacts as a result of a gather operation in December 2010. Over the short-term, individuals in the herds would be subject to increased stress and possible death as a result of increased competition for water and forage as the wild horse population continues to grow. The number of areas experiencing severe utilization by wild horses would increase over time. This would be expected to result in increasing damage to rangeland resources throughout the WHMPA. Trampling and trailing damage by wild horses in/around riparian areas and water sources would also be expected to increase, resulting in larger, more extensive areas of bare ground. Competition for the available water and forage between wild horses, domestic livestock, and native wildlife would increase.

Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes and do not have the ability to self-regulate their population size. Predation and disease have not substantially regulated wild horse population levels within or outside the North Hills WHMPA. Some mountain lion predation occurs, but does not appear to be substantial. Coyote are not prone to prey on wild horses unless young or extremely weak. Other predators such as wolf or bear do not exist within the WHMPA. As a result, there would be a steady increase in wild horse numbers for the foreseeable future, which would continue to exceed the carrying capacity of the range. Individual horses would be at greater risk of death by starvation and lack of water. The population of wild horses would compete for the available water and forage resources, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as they protect their position at scarce water sources, as well as injuries and death to all age classes of animals.

Significant loss of the wild horses in the WHMPA due to starvation or lack of water would have obvious consequences to the long-term viability of the herd. Continued decline of rangeland health and irreparable damage to vegetative, soil and riparian resources, would have obvious impacts to the future of the WHMPA and all other users of the resources, which depend upon them for survival. As a result, the No Action Alternative would not ensure healthy rangelands, would not allow for the management of a healthy, self-sustaining wild horse population, and would not promote a thriving natural ecological balance.

As populations increase beyond the capacity of the available habitat, more bands of horses would leave the boundaries of the WHMPA in search of forage and water. This alternative would result in increasing numbers of wild horses in areas not designated for their use, would be contrary to the Wild Free-Roaming Horse and Burro Act and would not achieve the stated objectives for wild horse herd management areas, to "prevent the range from deterioration associated with overpopulation," and "preserve and maintain a thriving natural ecological balance and multiple use relationship in that area."

4.2.6 Public Health and Safety

Affected Environment

In recent gathers, members of the public have increasingly traveled to the public lands to observe BLM's gather operations. Members of the public can inadvertently wander into areas that put them in the path of wild horses that are being herded or handled during the gather operations, creating the potential for injury to the wild horses or burros and to the BLM employees and contractors conducting the gather and/or handling the horses as well as to the public themselves. Because these horses are wild animals, there is always the potential for injury when individuals get too close or inadvertently get in the way of gather activities.

The helicopter work is done at various heights above the ground, from as little as 10-15 feet (when herding the animals the last short distance to the gather corral) to several hundred feet (when doing a recon of the area). While helicopters are highly maneuverable and the pilots are very skilled in their operation, unknown and unexpected obstacles in their path can impact their ability to react in time to avoid members of the public in their path. These same unknown and unexpected obstacles can impact the wild horses or burros being herded by the helicopter in that they may not be able to react and can be potentially harmed or caused to flee which can lead to injury and additional stress. When the helicopter is working close to the ground, the rotor wash of the helicopter is a safety concern by potentially causing loose vegetation, dirt, and other objects to fly through the air which can strike or land on anyone in close proximity as well as cause decreased vision.

During the herding process, wild horses or burros will try to flee if they perceive that something or someone suddenly blocks or crosses their path. Fleeing horses can go through wire fences, traverse unstable terrain, and go through areas that they normally don't travel in order to get away, all of which can lead them to injure people by striking or trampling them if they are in the animal's path.

Disturbances in and around the gather and holding corral have the potential to injure the government and contractor staff who are trying to sort, move and care for the horses and burros by causing them to be kicked, struck, and possibly trampled by the animals trying to flee. Such disturbances also have the potential for similar harm to the public themselves.

Public observation of the gather activities on public lands will be allowed and would be consistent with BLM IM No. 2010-164 and in compliance with visitation protocols for scheduled and nonscheduled visitation found in Appendix 9.

Environmental Impacts

Proposed Action
Public safety as well as that of the BLM and contractor staff is always a concern during the gather operations and would be addressed through Observation Protocols that have been used in recent gathers to ensure that the public remains at a safe distance and does not get in the way of gather operations. Appropriate BLM staffing (public affair specialists and law enforcement officers) will be present to assure compliance with visitation protocols at the site. These measures minimize the risks to the health and safety of the public, BLM staff and contractors, and to the wild horses themselves during the gather operations.

Alternative B – Impacts would be the same as described for the Proposed Action.

No Action Alternative
There would be no gather related safety concerns for BLM employees, contractors and the general public as no gather activities would occur.

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 North Hills HMA and the USFS Wild Horse Territory.

4.3 Past and Present Actions

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

Table 1. Cumulative Impact Analysis

Project --Name/Description	Status		
	Past	Present	Future
Wild Free-Roaming Horse and Burro Act of 1971	X		
Wild Horse and Burro issues, issuance of Multiple use decisions AML adjustments and planning	X	X	X
North Hills WHMPA Gather and Removals	X	X	X
Historic Livestock Grazing (1870 to 1934)	X		
Taylor Grazing Act (1934)	X		

Livestock Grazing Permit Renewals and authorizations (County Line, Holt Mine, SUSC, Uvada, Haystack Mountain Allotments.)	X	X	X
Wildlife Management	X	X	X
Vegetation Manipulation (Manipulation of vegetation from one type (P/J) to another (shrub/grassland) through the use of machines, hand cutting, planting, burning, and other approved methods.)	X	X	X
Wildfires/Wildfire Suppression and Rehabilitation	X	X	X
Recreation	X	X	X
Energy Development (Powerlines, Pipelines, Wind Energy, etc.)	X		X
Range Improvements (Water developments, fences, seedings, etc.)	X	X	X
Land Use Plans (Pinyon Management Framework Plan and Future Land Use Plans)	X	X	X

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

Past actions include establishment of wild horse Herd Management Areas, wild horse territories, establishment of AML for wild horses, wild horse gathers, Energy Development, livestock grazing and recreational activities throughout the area. Some of these activities have increased infestations of invasive plants, noxious weeds, and pests and their associated treatments.

4.3.1 Rangeland Health/Vegetation/Livestock Grazing

Livestock grazing in the region has evolved and changed considerably since it began in the 1870s, and is one factor that has created the current environment. At the turn of the century, large herds of livestock grazed on unreserved public domain in uncontrolled open range. Eventually, the range was stocked beyond its capacity, causing changes in plant, soil and water relationships. Some speculate that the changes were permanent and irreversible, turning plant communities from grass and herbaceous species to brush and trees. Protective vegetative cover was reduced, and more runoff brought erosion, rills and gullies.

In response to these problems, livestock grazing reform began in 1934 with the passage of the Taylor Grazing Act. Subsequent laws, regulations, and policy changes have resulted in adjustments in livestock numbers, season-of-use changes, and other management changes. Given the past experiences with livestock impacts on resources on Public Lands, as well as the cumulative impacts that could occur on the larger ecosystem from grazing on various public and private lands in the region, management of livestock grazing is an important factor in ensuring the protection of Public Land resources.

The effects of historic livestock grazing within the allotments led to a determination in the Pinyon Management Framework Plan to manage the allotments as follows:

Intensive Management Allotments: Haystack Mountain
Maintenance Management Allotments: SUSC Winter
Custodial Management Allotments: County Line, Holt Mine, and Uvada

Past range improvements including fences, ponds, wells etc. have been completed in the allotments. Range improvements are valuable to livestock managers, allowing permittees to control livestock distribution and limiting concentrations.

4.3.2 Wildfires/Vegetative Manipulation

Wildfires are common throughout southern Utah. Wildfire suppression activities and rehabilitation efforts are often associated with the occurrence of wildfires. Manipulation of vegetation from one type (P/J) to another (shrub/grassland) through the use of machines, hand cutting, planting, burning, and other approved methods has occurred throughout the area adjacent to the WHMPA. Rehabilitation of areas consumed by wildfires, and vegetative manipulation has occurred in and around the WHMPA. These activities have had long term beneficial impacts to the vegetative resources in the area. Ground cover and forage species have increased in the areas where these activities have occurred. The increase in forage species have been of benefit to the wild horses, wildlife and livestock that use the area.

4.3.3 Soils

Most of the soils work that has been completed within the field office area is related to vegetation treatment projects where soil conditions generally improve over time. Many of the livestock grazing rotation systems and allotment management plans that have been developed within the Pinyon Planning Unit have indirectly benefitted the soil resource. Utilization levels established in recently completed grazing permit renewal efforts should show positive results for soil conditions given some time. Some structural projects such as rock gabions have been placed in eroding gullies and riparian washes for stabilization of very localized situations in the past. The effects of wild horses on soils have been cumulative with wildlife and livestock use in the past. Again, the level of impact from each category of grazer is unknown. Alternatives A and B which include gather and removal of wild horses from the HMA, would help to lessen cumulative impacts. While the No Action alternative would obviously increase the impacts.

At the present time, impacts that wild horses are having on the soil resource are cumulative primarily with livestock and wildlife impacts. The primary impacts are compaction through trailing throughout the gather area and trampling in Nephi Spring on the USFS Wild Horse Territory. Cattle are the primary livestock and mule deer are the most likely wildlife species where trailing, trampling, etc. would be noted. Other activities which are soil disturbing in the gather area would include such things as vegetation treatments, fire rehabilitation efforts, dirt and off road travel, powerline and pipeline construction, etc.

4.3.3 Wildlife

PAST

Historic grazing (wild horses, livestock, and wildlife) has resulted in decreased habitat values for wildlife within the North Hills WHMPA. In areas where the native understory vegetation has been depleted or vegetation disturbance has occurred cheatgrass has increased and in some locations has become the dominant species. Invasive species such as annual cheatgrass deplete the quality of the habitat to meet wildlife needs.

PRESENT

Direct impacts are expected to be minimal as a result of timing and duration of the gather, however some impacts could occur. Removal of the wild horses down to the lower AML would reduce competition between mule deer and wild horses. Direct competition between wild horses, mule deer and other wildlife would continue to occur for perennial grasses, forbs, water and shelter.

Declines in migratory bird populations are becoming well documented through cooperative efforts among conservation groups, federal, and state agencies and can be attributed to many factors such as habitat fragmentation (breeding and non-breeding habitat), alteration of vegetative communities, urban expansion, natural disasters and brood parasitism. Migratory birds are also impacted by human disturbance associated with land use and recreational activities.

4.3.4 Wild Horses

In 1971 Congress passed the WFRHBA which placed wild and free-roaming horses, that were not claimed for individual ownership, under the protection of the secretaries of Interior and Agriculture. The act provided protection, but no appropriation for the management of wild horses. In 1976 the FLPMA gave the BLM the authority to use motorized equipment in the capture of wild free-roaming horses as well as continued authority to inventory the public lands. In 1978, the PRIA was passed which gave the BLM a direction for management as well as approved appropriation authority for management of wild and free-roaming horses on public lands.

In 1971, Herd Areas were identified as areas being occupied by wild horses. Herd Management Areas (HMAs) were established in the 1980s through the Pinyon MFP.

The CCFO has records of nine (9) wild horse gathers and removals that have occurred since 1971 within the North Hills WHMPA, resulting in the removal of approximately 550 wild horses from area. The average population increase in the North Hills WHMPA has been between 17-20% a year with the exception of 2009 to 2010 where excess horses from outside of the WHMPA came into the area.

4.3.5 Recreation

Common recreational activities in the WHMPA include occasional ATV riding, hiking, hunting, wildlife and wild horse viewing. Cumulative impacts are not likely to impact these recreational activities. Improved wildlife habitat as a result of achieving AML in the North Hills WHMPA may lead to greater opportunity for viewing or hunting wildlife. Wild horse viewing may be reduced due to decreased concentrations of wild horses in areas accessible to the public.

4.4 Reasonably Foreseeable Future Actions (RFFA)

4.4.1 Rangeland Health/Vegetation/Livestock Grazing

Livestock grazing is expected to continue at similar stocking rates, season of use, kind of livestock and utilization objectives as developed in recent permit renewals. Continuing to graze livestock in a manner consistent with grazing permit terms and conditions would be expected to achieve, maintain, and make significant progress towards achieving Land Health Standards.

Production, line-intercept, frequency, and utilization data would continue to be collected for future rangeland management actions. Rangeland Health Assessments for allotments associated with this area would be completed again within the next 10 years.

In the future permit renewals and livestock grazing evaluations would be completed on the County Line, Holt Mine, SUSC, Uvada, and Haystack Mountain Allotments on a 10-year cycle. Changes to the permitted livestock use on each of these allotments would be made at that time. Issuance of grazing

permits would be completed through appropriate NEPA analysis.

Range improvement projects may be proposed in the future. Water developments and fences aid in distributing livestock. Water developments would provide an additional water source to wild horses. Construction of fences within North Hills HMA could inhibit the free-roaming nature of wild horses. All future range improvement projects would be analyzed through site specific NEPA analysis within a multiple-use concept.

Wildfires and wildfire rehabilitation could impact livestock grazing within the County Line, Holt Mine, SUSC, Uvada, and Haystack Mountain Allotments. Forage loss as a result of wildfires may result in temporary reductions in livestock permitted use to allow for recovery of vegetative resources. Wildfire rehabilitation activities may also result in burned areas being closed off to livestock grazing until vegetation conditions meet fire rehabilitation objectives.

4.4.2 Soils

RFFA's that would affect soils include grazing permit renewals which allow continued use of livestock grazing five allotments (73,687 public land acres). It is likely that permits would include best management practices for vegetation, including implementation of terms and conditions to (in most cases) lessen the amount of grazing utilization that would be allowed to occur. Range improvement projects are anticipated to be analyzed through the permit renewal process. These would have the effect of disturbing soil surfaces. Wildlife contribute the same type of effects that wild horses have on soils. Any on road or off-road travel is a soil compacting activity, which cumulatively, could be substantial. Other RFFA's in the gather area most likely to affect the soil resource are road construction related to mining or right-of-way (ROW) development, including such things as major powerlines, pipelines, wind farms, etc. Agency initiated projects such as fire rehabilitation and vegetation treatments (decreased fuel loading, stewardship contracts, etc.) are anticipated in the future and these would also create cumulative impacts to soils.

4.4.3 Wildlife

Past, present and future projects with regards to properly planned vegetation and wildlife habitat improvement, invasive weed treatment, and range improvement are beneficial for wildlife. These projects generally ensure the quality of habitat and forage for wildlife species.

Direct competition between wild horses, mule deer and other wildlife will continue to occur for perennial grasses, forbs, water and shelter.

Wild horse populations have and would continue to influence the available forage for wildlife. As wild horse populations increase the competition between wildlife and wild horses for limited resources would increase. As wild horses and wildlife are managed within the population goals and appropriate management levels (AML) this competition would be reduced.

Abundance of small bird, mammal and reptile populations can be reduced because of habitat alteration. Wild horses can reduce the vegetation cover required to support adequate prey populations however, lower ground cover makes prey more easily seen and captured by owls.

4.4.4 Wild Horses

In the future, the BLM CCFO would continue to inventory wild horse populations within the established WHMPA. Wild horses would continue to be an integral component of public lands, managed within a

multiple-use concept within HMAs.

Population data collected during the Proposed Action would enable Wild Horse Specialists to monitor the herds and make management decisions to maintain genetic diversity within the North Hills WHMPA with historical or desirable herd characteristics, and population demographics. Future removals within the North Hills WHMPA would utilize this information and provide baseline data for future NEPA analysis.

Over the next 10-15 year period, reasonably foreseeable future actions include gathers about every four years to remove excess wild horses in order to manage population size within the established AML range. Cumulatively over the next 10-15 years, fewer gathers should result and less frequent disturbance to individual wild horses and the herd's social structure would occur. Individual and herd health would be maintained. Population control methods could also be implemented during future gathers. Any future wild horse management would be analyzed in appropriate environmental documents following site-specific planning with public involvement.

Other reasonably foreseeable future actions include the transport, handling, care, and disposition of the excess wild horses removed from the range. Initially wild horses would be transported from the capture/temporary holding corrals to a designated BLM short-term holding corral facility. From there, the animals would be made available for adoption or sale to individuals who can provide a good home, or to long-term holding pastures in the Midwest.

Wildfires and wildfire rehabilitation could impact wild horse habitat within the North Hills WHMPA. Wild horses may be displaced during wildfires and concentrate in non-burned areas until green-up occurs within the burn at which time it is not uncommon for wild horses, livestock, and wildlife to concentrate in these areas. It is not uncommon to exclude burned areas from grazing until vegetation is allowed to recover. Wild horse management decisions within the North Hills WHMPA regarding wildfire and wildfire rehabilitation efforts would depend on the extent of habitat loss incurred.

The removal area contains a variety of resources and supports a variety of uses. Any alternative course of wild horse management has the opportunity to affect and be affected by other authorized activities ongoing in and adjacent to the area. Future activities which would be expected to contribute to the cumulative impacts of implementing the Proposed Action include: future wild horse gathers, continuing livestock grazing in the allotments within the area, development of range improvements, continued development of mineral extraction, oil and gas exploration, new or continuing infestations of invasive plants, noxious weeds, and pests and their associated treatments, and continued native wildlife populations and recreational activities historically associated with them. The significance of cumulative effects based on past, present, proposed, and reasonably foreseeable future actions are determined based on context and intensity.

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

Impacts of Alternative A: The Proposed Action Alternative

Cumulative effects expected when incrementally adding either of the action alternatives to the area of potential effect 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. Application of fertility control and/or 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 WHMPA could lead to increased difficulty and greater costs to gather horses in the future as released horses learn to evade the helicopter.

Cumulatively, there should be more stable wild horse populations, less competition for limited forage and water resources, healthier rangelands, and wild horses, and fewer multiple use conflicts in the area over the short and long-term. Over the next 10-20 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 B: Remove Excess Animals (Low Point AML) Without Fertility Control

Impacts from this alternative would be similar to the Proposed Action. Not as many horses would be returned to the WHMPA post gather, no sex ratios would be adjusted, and fertility control would not be applied. AMLs may be achieved but would exceed the high end of AMLs sooner than the proposed action increasing the number of gathers required to maintain the wild horse population within the AML.

Impacts of Alternative C: The No Action Alternative

Under the No Action Alternative, the wild horse population could exceed 500 head in four years. Increased movement outside the WHMPA would be expected as greater numbers of horses search for food and water. Heavy to excessive utilization of the available forage would be expected and the water available for use could become increasingly limited. Emergency removals could be expected in order to prevent individual animals from suffering or death as a result of insufficient forage and water. 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.

5.0 Monitoring and Mitigation Measures

Proven measures to mitigate impacts of the gather on wild horses and on rangeland resources, along with monitoring are incorporated into the Proposed Action through SOPs, which have been developed over time. These SOPs (see Appendices 5 and 6) represent the "best methods" for reducing impacts associated with gathering, handling, and transporting wild horses and for collecting herd data. Hair samples to compare to the genetic baseline for the North Hills WHMPA wild horses may be collected; additional samples will be collected during future gathers (in 10-15 years) to determine trend. Should monitoring indicate genetic diversity is not being adequately maintained, 2-10 mares and/or studs from HMAs in similar environments would be added every generation (every 8-10 years) to avoid inbreeding depression/maintain acceptable genetic diversity. Ongoing resource monitoring, including climate (weather), and forage utilization, population inventory, and distribution data will continue to be collected.

6.0 List of Preparers

Those responsible for completing this EA are listed as part of the Interdisciplinary Team Record (see Appendix 1).

Chad Hunter (BLM CCFO Rangeland Management/Wild Horse Specialist) – Team Leader, Vegetation, Livestock Grazing, Wild Horses

Sheri Whitfield (BLM CCFO Wildlife Biologist) – Special Status Species (T&E), Wildlife

Kevin Wright (BLM CCFO Rangeland Management Specialist) – Riparian/Wetlands, Livestock Grazing

Jessica Bulloch (BLM CCFO Natural Resource Specialist) – Rangeland Standards and Guidelines, Livestock Grazing, Invasive Species

Craig Egerton (BLM CCFO Natural Resource Specialist) – Rangeland Standards and Guidelines, soils, Forestry, Water resources

Kent Dastrup (BLM CCFO GIS Specialist) – GIS Support, Maps, Tables

7.0 Consultation and Coordination

The Utah State Office initiated public involvement at a public hearing about the use of helicopters and motorized vehicles to capture and transport wild horses (or burros) on June 9, 2010 at the BLM's Salt Lake Field Office in Salt Lake City, Utah. This specific gather was addressed at that public meeting as well as other gathers that may occur within the state of Utah over the next 12 months. This meeting was advertised in papers and radio stations statewide. The meeting was attended by 12 members of the public and media. No comments were received at that meeting specific to the use of helicopters and motorized vehicles in the management of wild horses and burros in Utah. No comments were received about this proposed action or the alternatives in this document. The BLM reviewed its SOPs in response to the views and issues expressed at the hearing and determined that no changes to the SOPs were warranted.

Additional public involvement includes the posting of this EA on July 1, 2010 on the Utah BLM ENBB. A preliminary EA was posted on the ENBB, BLM Utah home website, BLM Cedar City website, and distributed to interested parties for a 30-day comment period.

7.1 Persons, Groups, & Agencies Consulted

Ronald G. Torgerson
State of Utah School and Institutional Trust Lands Administration (SITLA)

Gus Warr
BLM-USO-Wild Horse and Burro State Lead

Ben Noyes
BLM-Ely District Office-Wild Horse and Burro Specialist

Alan Shepherd
BLM-WYSO-Wild Horse and Burro State Lead

Bevan Killpack
District Ranger United States Forest Service (USFS) –
Dixie National Forest, Pine Valley Ranger District

Randy Russell
Range Management Specialist United States Forest Service (USFS) –
Dixie National Forest, Pine Valley Ranger District

Dorena Martineau
Paiute Indian Tribe of Utah –Cultural Resources

The United States Forest Service (USFS) – Dixie National Forest, Pine Valley Ranger District participated in the development and review of this EA. The proposed action is in accordance with Dixie National Forest FLRMP, approved September 2, 1986 and would assist in achievement of objectives for the North Hills wild horse territory.

8.0 Public Involvement

The Utah State Office initiated public involvement at a public hearing about the use of helicopters and motorized vehicles to capture and transport wild horses (or burros) on June 9, 2010 at the BLM's Salt Lake Field Office in Salt Lake City, Utah. This specific gather was addressed at that public meeting as well as other gathers that may occur within the state of Utah over the next 12 months. This meeting was advertised in papers and radio stations statewide. The meeting was attended by 12 members of the public and media. No comments were received at that meeting specific to the use of motorized helicopters and motorized vehicles in the management of wild horses and burros in Utah. No comments were received about this proposed action or the alternatives in this document. The BLM reviewed its SOPs in response to the views and issues expressed at the hearing and determined that no changes to the SOPs were warranted.

Additional public involvement includes the posting of this proposed action on the Utah BLM Environmental Bulletin Board (ENBB) July 1, 2010. A preliminary North Hills HMA Gather Plan EA was available to the public at the Cedar City Field Office, and on-line at http://www.ut.blm.gov/ or https://www.blm.gov/ut/enbb/ or http://www.blm.gov/ut/st/en/fo/cedar_city.html for a 30-day review/comment period beginning on September 24, 2010 and ending October 24, 2010. The comments received during this period are summarized and addressed below.

No.	Commenter	Comment	BLM Response
1.	Individual	Opposed to gather. Holding facilities that horses are transported to do not have shelters. A facility in Utah currently has an outbreak of strangles.	Comments are outside the scope of the analysis. Horses are not transported to holding facilities with current strangles outbreaks.
2.	Iron County Commission	Supports gather activities to keep populations within Appropriate Management Levels (AML).	Comment Noted.
3.	Iron County	Encourage BLM to use	Comment Noted.

	Commission	Fertility Control.	
4.	Iron County Commission	Would like BLM to gather wild horses from within wilderness areas and/or use other forms of gathering techniques to reduce herd size in these areas.	There are no wilderness areas within this WHMPA. See Checklist in Appendix 1. Horses are gathered from wilderness areas, but trap sites are not normally placed within these areas.

Two individuals associated with the American Wild Horse Preservation Campaign notified the CCFO on October 20, 2010 of a problem accessing the preliminary EA on CCFO home page website http://www.blm.gov/ut/st/en/fo/cedar_city.html. The problem was corrected within 12 hours of notification of the problem. The problem was corrected within 12 hours of notification of the problem. This website had been checked on website had been checked as was working on Sunday October 17, 2010. The two individuals were notified within 8 hours of the call of how to access the EA on the two websites in the Dear Reader letter. The two websites that were in the notification to the public in a Dear Reader letter were working throughout the comment period, so when these two individuals requested an extension of the comment period the extension was denied.

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10.0 Appendices

Appendix 1

ID TEAM CHECKLIST TEMPLATE
INTERDISCIPLINARY TEAM CHECKLIST

Project Title: North Hills Wild Horse Management Plan Area Wild Horse Gather Plan

NEPA Log Number: DOI-BLM-UT-C010-2010-0047-EA

File/Serial Number:

Project Leader: Chad Hunter

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.

Determi-nation	Resource	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	Air quality in the area is good as is typical of relatively undeveloped areas of the western U.S. Nothing in the proposal would affect current conditions.	C. Egerton	7/12/10
NP	Areas of Critical Environmental Concern	None within Field Office boundaries.	C. Hunter	7/21/10
NP	BLM Natural Areas	None within Field Office boundaries.	C. Hunter	7/21/10
NI	Cultural Resources	This gather will have **no effect** to significant cultural resources. The corral location will be located on an area of existing disturbance, such as road or a wash. The possibility of finding intact cultural resources in these areas is minimal to non-existent. If an existing disturbed area cannot be located for the corral area, a cultural resource inventory will take place prior to the gather. If cultural resources are located during this inventory, the corral area will be moved to another location, which does not contain cultural resources.	N. Thomas	7/12/10
NI	Greenhouse Gas Emissions	All alternatives except no action would involve burning fossil carbon based fuels (which would produce byproducts such as CO2, water vapor, etc.) to conduct removal operations. Emission levels would be so minor as to be unmeasurable. Ongoing research has identified the potential effects of so-called "greenhouse gas" (ghg) emissions (including CO2, methane, nitrous oxide, water vapor and several trace gasses) on global climate. The release of these gasses during activities related to wild horse management is cumulative with other local, regional and global releases. The lack of	C. Egerton	07/12/10

		scientific tools to predict climate change on regional or local scales limits the ability to quantify potential future impacts as a result of this singular proposal or cumulatively with other activities within the analysis area with any confidence. On a regional scale, selection of any alternative would not contribute substantially to local ghg emissions.		
NI	Environmental Justice	No minority or economically disadvantaged groups would be affected	Chad Hunter	7/8/10
NP	Farmlands (Prime or Unique)	There are likely soils in the herd unit capable of being prime or unique farmlands, however only when irrigation water is supplied. Where there is no irrigation water supplied, there are no prime or unique farmlands present.	C. Egerton	7/14/10
NP	Fish and Wildlife Excluding Threatened, Endangered, Candidate and Sensitive Species	The area is identified as crucial mule deer winter range. The North Hills WHMPA is identified as blue grouse habitat. Elk have been known to use the North Hills WHMPA but is not identified as crucial range.	Sheri Whitfield	7/14/10
NI	Floodplains	Nothing in the proposal would affect the functioning of a floodplain, therefore the action is consistent with Executive Order 11988.	C. Egerton	7/14/10
NI	Fuels / Fire Management	There would be no impacts to Fire/Fuels Management.	M. Mendenhall	7/8/10
NI	Geology / Mineral Resources/Energy Production	The brevity and superficial nature of the proposed action precludes it from having any substantial impact on any mineral resources or ongoing mineral exploration/development activity that may be present in the proposed project area.	Ed Ginouves	7/9/10
PI	Hydrologic Conditions	Hydrologic conditions are variable throughout the WHMPA, but in general are thought to be relatively good. Specific soil information for these allotments may be found in the NRCS soils survey for Iron County. A review of available data has been completed and none of these allotments contain critical or severe erosion condition class acreages. Field examination of the County Line Allotment in 2007 during rangeland health evaluations revealed a small area (site write-up area C008) with a moderate departure from normal in soil stability. Active gullying was occurring. It is unknown how much wild horses contribute to this particular problem, but it is suspected to be minimal. See EA text under “soils” for more details.	C. Egerton	07/14/10

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Invasive Species/Noxious Weeds	As long as there is a stipulation (as in the SOPs) of the use of weed free hay during any bait trapping, and for any feeding purposes of wild horses and/or domestic horses at the gather site or at holding areas on public land.	J. Bulloch	714/10
NI	Lands/Access	Any pending or authorized lands and realty actions in the wild horse gather area would not be substantially affected by the proposed action.	B. Johnson	7/12/2010
PI	Livestock Grazing	Livestock and wild horses compete directly for vegetative, water, and cover resources. Higher populations of wild horses mean more competition with livestock. Wild horse	Chad Hunter	7/8/10

		populations that are within AML reduce competition. When wild horse populations are above AML the livestock numbers must be reduced to not over utilize the vegetative and water resources.		
NI	Migratory Birds	Gather activities would occur outside the migratory bird nesting season.	Sheri Whitfield	7/14/10
NI	Native American Religious Concerns	The Paiute Indian Tribe of Utah and the appropriate band have reviewed the project and have no objection to the project going forward and request they be informed of any changes or updates to the project.	Rachel Tueller	7/13/10
NI	Paleontology	The surficial geology of the lands in the proposed project area fall within Class 1 and Class 2, very low and low potential, respectively, for vertebrate or scientifically significant invertebrate fossils. That, together with the superficial nature of any surface disturbance activity associated with the proposed projects precludes any impact to paleontological resources.	Ed Ginouves	7/9/10
PI	Rangeland Health Standards	This is addressed as part of the rangeland heath/vegetation section of the ea and in other resource sections such as riparian.	Chad Hunter	7/8/10
NI	Recreation	Recreation in the project area is dispersed, and some displacement may occur during gather operations, however impacts will not be substantial. Coordination is necessary with the Utah Division of Wildlife Resources to notify public of operations, and to avoid conflicts during hunting season.	E. Burghard	08/06/10
NI	Socio-economics	The proposed action will not in its self change the socio-economics of the area.	Chad Hunter	7/8/10
PI	Soils	Under the current situation (horses above AML), inadequate residual vegetation (forage) and litter remain on certain key use areas in the herd unit. This directly affects the soil's exposure to erosive elements such as wind and water. A reduction in horse numbers would allow additional vegetation to be produced and to remain on these key areas, thus providing additional protection to the soil surface. See EA text.	C. Egerton	7/14/10
NP PI	Threatened, Endangered, Candidate or Sensitive Animal Species	There are no TEC animal species identified within the North Hills WHMPA. Special Status species that potentially occur within the North Hills WHMPA include; bald eagle, burrowing owl, ferruginous hawk, kit fox, pygmy rabbit and short-eared owl. New trap sites established in undisturbed areas would need to be cleared for special status animal species.	S. Whitfield	7/14/10
NP NP	Threatened, Endangered, Candidate or Sensitive Plant Species	The CCFO does not have any Threatened, Endangered or Candidate plant species. There are no known Special Status plant species that occur within the North Hills WHMPA. New trap sites established in undisturbed areas would need to be cleared for special status plant species. The only known special status plant that occurs in the area is Astragalus oophorus var. lonchocalyx which occurs on private land adjacent in the WHMPA.	Sheri Whitfield	7/8/10

NI	Wastes (hazardous or solid)	The proposal should not produce any hazardous or solid wastes. Should any release occur, all State and Federal regulations shall be followed.	R. Peterson	7/22/10
NI	Water Resources/Quality (drinking/surface/ground)	Project proposal would not substantially impact water quality. Project stipulations would minimize adverse impacts to water quality resulting from water trapping operations. It would be desirable to remove horses as soon as practical from any water trap areas. While surface waters in the herd management area are likely meeting water quality standards for most waters, a reduction in wild horse numbers would further improve water quality (sedimentation and fecal coliforms).	C. Egerton	7/12/10
NP/PI	Wetlands/Riparian Zones	There are no riparian/wetland zones within the North Hills HMA in land administered by the BLM. The riparian area on the FS is addressed in the EA.	K Wright	7/12/10
NP	Wild and Scenic Rivers	None within Field Office boundaries.	E. Burghard	7/21/10
NP	Wilderness/WSA	The proposed project area contains no wilderness study areas, or designated wilderness.	E. Burghard	08/06/10
NI	Woodland / Forestry	No substantial impacts are anticipated on forest/woodland vegetation via gather activities. The proposed action would reduce animal impacts to vegetation in the area and thereby contribute to improved vigor, etc. of understory species, but really little impact on overstory (woodland) species.	Craig Egerton	7/12/10
PI	Vegetation Excluding Threatened, Endangered, Candidate and Sensitive Species	Removing excess wild horses will benefit vegetative communities.	Chad Hunter	7/22/10
NI	Visual Resources	The proposed action includes only minor temporary disturbance. The action will not measurable impact visual resources.	E. Burghard	08/06/10
PI	Wild Horses and Burros	See proposed action and EA	Chad Hunter	7/8/10
NI	Areas with Wilderness Characteristics	Placement of gather sites in previously disturbed areas, and along existing roads would ensure no impacts to areas which may have wilderness characteristics.	E. Burghard	08/06/10

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

Appendix 1.
Fundamentals of Rangeland Health

The Fundamentals of Rangeland Health stated in 43 CFR 4180 are:

1. Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity and the timing and duration of flow.

2. Ecological processes, including the hydrologic cycle, nutrient cycle and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

3. Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established Bureau of Land Management objectives such as meeting wildlife needs.

4. Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

The fundamentals of rangeland health combine the basic precepts of physical function and biological health with elements of law relating to water quality, and plant and animal populations and communities. They provide direction in the development and implementation of the standards for rangeland health.

Appendix 2.
Utah Standards for Rangeland Health (1997)

<u>Standard 1</u>. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.

As indicated by:

a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.

b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.

c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community [DPC], where identified in a land use plan, or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions.

<u>Standard 2.</u> Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

As indicated by:

a) Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events. Vegetative cover adequate to protect stream banks and dissipate streamflow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.

b) Vegetation reflecting: Desired Plant Community, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover and other habitat needs for dependent animal species.

c) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.

d) Active floodplain.

<u>Standard 3.</u> Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved.

As indicated by:

a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.

b) Habitats connected at a level to enhance species survival.

c) Native species reoccupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of nonnative species.

d) Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community [DPC], where identified in a land use plan conforming to these Standards, or (2) where the DPC is identified a community that equally sustains the desired level of productivity and properly functioning ecological processes.

Standard 4. BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM Lands will support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and groundwater. [1]

As indicated by:

a) Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.

b) Macro-invertebrate communities that indicate water quality meets aquatic objectives.

[1] BLM will continue to coordinate monitoring water quality activities with other Federal, state and technical agencies.

Appendix 3.
Utah Guidelines for Grazing Management (1997)

1. Grazing management practices will be implemented that:

(a) Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions;

(b) Promote attainment or maintenance of proper functioning condition riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle and energy flow;

(c) Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow;

(d) Maintain viable and diverse populations of plants and animals appropriate for the site;

(e) Provide or improve, within the limits of site potentials, habitat for Threatened or Endangered Species;

(f) Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species;

(g) Encourage innovation, experimentation and the ultimate development of alternatives to improve rangeland management practices;

(h) Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the Standards.

2. Any spring or seep developments will be designed and constructed to protect ecological process and functions and improve livestock, wild horse and wildlife distribution.

3. New rangeland projects for grazing will be constructed in a manner consistent with the Standards. Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.

4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas or other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.

5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, cannot achieve ecological objectives
as well as nonnative species, and/or (d) cannot compete with already established native species.

6. When rangeland manipulations are necessary, the best management practices, including biological processes, fire and intensive grazing, will be utilized prior to the use of chemical or mechanical manipulations.

7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations.

8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein and other supplements) for the purpose of substituting for inadequate natural forage will not be conducted on BLM lands other than in (a) emergency situations where no other resource exists and animal survival is in jeopardy, or (b) situations where the Authorized Officer determines such a practice will assist in meeting a Standard or attaining a management objective.

9. In order to eliminate, minimize or limit the spread of noxious weeds, (a) only hay cubes, hay pellets or certified weed-free hay will be fed on BLM lands, and (b) reasonable adjustments in grazing methods, methods of transport and animal husbandry practices will be applied.

10. To avoid contamination of water sources and inadvertent damage to non-target species, aerial application of pesticides will not be allowed within 100 feet of a riparian/wetland area unless the product is registered for such use by the EPA.

11. On rangelands where a standard is not being met, and conditions are moving toward meeting the standard, grazing may be allowed to continue. On lands where a standard is not being met, conditions are not improving toward meeting the standard or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer pursuant to CFR 4180.2(c).

12. Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a Standard, and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility.

13. Rangelands that have been burned, seeded or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows: (1) burned rangelands, whether by wildfire or prescribed burning, will not be grazed for a minimum of one complete growing season following the burn; and (2) rangelands that have been seeded or otherwise chemically or mechanically treated will not be grazed for a minimum of two complete growing seasons.

14. Conversions in kind of livestock (such as from sheep to cattle) will be analyzed in light of Rangeland Health Standards. Where such conversions are not adverse to achieving a Standard, or they are not in conflict with BLM land use plans, the conversion will be allowed.

Appendix 4.
Standard Operating Procedures for Conducting Wild Horse Gathers

(Methods for Humane Capture of Wild Horses from the North Hills HMA)
(FLPMA – 16 USC 1338a, Wild Horse and Burro Handbook – H-4710-1, 43 CFR 4700)

The gather method employed for this capture operation requires that horses be herded to a trap of portable panels and on extremely rare occasions to ropers who, after roping the animal, will bring it to the trap or have a trailer taken to the roped animal. Gathering would be conducted by using agency personnel or contractors experienced in the humane capture and handling of wild horses. The same rules apply whether a contractor or BLM personnel are used. The following stipulations and procedures will be followed during the contract period to ensure the welfare, safety and humane treatment of the wild horses in accordance with the provisions of 43 CFR 4700.

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

a. Helicopter Drive Trapping

This capture method will involve driving horses into a pre-constructed trap using a helicopter. The trap is constructed of portable steel panels consisting of round pipe. Wings are constructed off the ends of the panel trap to aid in funneling horses into the trap. The wings are constructed of natural jute, (or similar netting which will not injure a horse), which is hung on either trees or steel T-posts. This sort of wing forms a very effective visual barrier to the horses that they typically will not run through. When the trap is ready for use, a helicopter will start moving horses toward the trap and into the wings.

In heavily wooded areas, it may be necessary to use wranglers in support of the helicopter to move the horses. The helicopter will act more as a spotter for the ground crew in this situation.

The contractor/BLM shall attempt to keep bands intact except where animal health and safety become considerations which would prevent such procedures. The contractor/BLM shall ensure that foals shall not be left behind.

At least one saddle-horse should be immediately available at the trap site to perform roping if necessary. Roping shall be done as determined by the Contracting Officer's Technical Representative (COTR) or Project Inspector (PI). Under no circumstances shall animals be tied down for more than one hour.

Domestic saddle horses may also be used to assist the helicopter pilot (on the ground) during the gather operation, by having the domestic horse act as a pilot (or "Judas") horse on the ground, leading the wild horses into the trap site. Individual ground hazers and individuals on horseback may also be used to assist in the gather.

b. Helicopter Assisted Roping

Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. Under no circumstances shall horses or burros be tied down for more than one hour.

Roping shall be performed in such a manner that bands will remain together. Foals shall not be left

behind.

2. Other Non-Helicopter Capture Methods

a. Water Trapping

This method involves setting up a trap around a well used water source and employing a self-closing gate with a triggering device or finger gates. Finger gates can be used only with the prior approval and under the supervision of the COTR/PI. Water traps equipped with trip wires would be checked every 10 hours for trapped animals. Water traps may also be manually closed using a pull rope, which requires personal to be at the trap site to close the gate.

It may be necessary to exclude access to other neighboring water sources to encourage use by the target population at the trap site. All exclosures constructed for the purpose of the gather would be flagged and highly visible to the horses, wildlife, and the public. The wires, twine, and flagging would be promptly removed following completion of the trapping.

All water traps and exclosures would be constructed (whenever possible) to accommodate wildlife access points. These points would be where wildlife could get to water by going underneath the panels, such as along trails, washes or low spots.

Placement of portable corral panels would be permitted during foaling season to allow wild horses to become accustomed to them.

b. Bait Trapping

Bait trapping using hay or other enticements may be used as an additional or alternative method of capture. This method would involve setting up a panel trap in an area accessible to the horses and feeding of enticements in the trap over a period of time to habituate the target animal to the bait. Once virtually all horses (or burros) in an area were coming in to the bait, they would be trapped. The principal limitation of this method is that forage must be limited or the bait must be more desirable than the surrounding forage.

c. Net Gunning

The net-gunning aerial capture technique uses weighted nets to individually capture wild animals.
Net gun capture is a valuable tool when specific animals are targeted for restraint, relocation or removal. The technique is not applicable when a large number of animals require capture.

When using nets, drug and electrical immobilization are rarely required. Individual animals are located, herded by the pilot as slowly as possible into an open area and then are netted from the helicopter using weighted, soft mesh net. As the horse or burro becomes tangled in the net they become somewhat disoriented and further slow down. Some animals come to a complete standstill when surrounded by the net. Others become tangled to the point where they roll onto the ground.

Immediately after netting an animal the crew members approach the animal. The horse or burro is rolled onto its side, cross-hobbled and blindfolded. A muzzle is used in cases where an animal acts aggressive. The net is then rolled away from the horse or burro and the animal can be handled for collection of biological samples. If transport is required, the hobbled, blindfolded animal is rolled into a soft canvas bag. The bag is laced closed with a strong nylon rope. The rope is attached to a hook on the belly of the helicopter and the animal is transported to the destination. Transport time to small, portable corrals is usually under 10 minutes per animal.

Once at the destination, the horse or burro is gently lowered into the small, portable corral. The ground crew unhooks the transport rope and removes the bag from around the animal. The blindfold and hobbles are removed. The horse or burro immediately gets onto their feet, appearing only slightly disoriented.

d. Chemical Capture

The chemical capture technique has similar benefits to the net gunning technique in the fact that individual animals may be captured. Chemical capture is a valuable tool when specific animals are targeted for restraint, relocation or removal. The technique is not applicable when a large number of animals require capture.

When using chemical capture a drug will be administer through the use of a dart gun and dart. The dart will be loaded with a chemical recommended by a veterinarian and approve by the BLM Authorized Officer on site. The dart is then shot out of a gun using the appropriate propellant for that gun. As the dart impacts the animal the chemical is released and the animal is subdued by the chemical. The use of this method is limited to within 100 yards or the range of the dart gun. The chemical can be administered from the ground or by air.

Once the animal is subdued by the chemical ground crews must imminently approach the animal and hobble or halter the animal. As the chemical wears off and the animal case once again move with normal function saddle horses may be used to move the animal where it can be loaded into a trailer. If the animal is already in a location where it can be loaded then the animal may be tied down for no longer then 1 hour and loaded directly into the trailer.

3. Stipulations for Portable Corral Traps/Exclosures

Capture traps would be constructed in a fashion to minimize the potential for injury to wild horses or burros and BLM/contractor personnel. Gates would be wired open at all unmanned trap sites, and would be left closed only when needed to hold horses or burros inside. Trapped horses or burros would not be held inside the traps for a period exceeding 10 hours, unless provided with feed (weed free hay) and water.

The Utah Division of Wildlife Resources would be notified as soon as possible if any wildlife became injured during capture operations. Wildlife caught inside traps would be released immediately.

4. Contract Helicopter, Pilot and Communications

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.

When refueling, the helicopter shall remain a distance of at least 1,000 feet or more from animals, vehicles (other than fuel truck), and personnel not involved in refueling.

The COTR/PI shall have the means to communicate with the contractor's pilot at all times. If communications cannot be established, the Government will take steps as necessary to protect the welfare of the animals. The necessary frequencies used for this contract will be assigned by the COTR/PI when the radio is used. The contractor shall obtain the necessary FCC licenses for the radio system.

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

All incidents/accidents occurring during the performance of any delivery order shall be immediately reported to the COTR.

5. Non-Contract Helicopter Operations

An Aircraft Safety Plan and flight hazard analysis will be appropriately approved and filed and copies distributed to the necessary individuals prior to commencing the removal operation. Daily flight plans will also be filed. If a BLM contract helicopter is used, all BLM, Aircraft Safety and Operations standards will be adhered to.

There will be daily briefings with the helicopter pilot, Authorized Officer and all personnel involved in the day's operation. The purpose of this meeting is to discuss in detail all information gathered during the familiarization flight such as hazards, location of horses, potential problems, etc. Discuss any safety hazards anticipated for the coming day's operation or any safety problems observed by the Authorized Officer or anyone else, outline the plan of action, delineate course of actions, specifically position the hazers and their responsibilities, logistics, and timing. After each flight, removal personnel will discuss any problems and suggest solutions. This may be accomplished over the radio or on the ground as the need dictates.

A flight operations plan will be filed with the Cedar City Interagency Dispatch Center. This plan will describe the area to be flown and the expected time frames of flight operations. A weather forecast will be acquired from the dispatcher. There will be no flights on days of high or gusty, erratic winds or days with poor visibility.

Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation.

An operation or contractor's log will be maintained for all phases of the operation. The log will be as detailed as possible and will include names, dates, places and other pertinent information, as well as, observations of personnel involved.

6. Animal Handling and Care

Prior to any gathering operations, the COTR/PI will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine whether the proposed activities will necessitate the presence of a veterinarian during operations. If it is determined that capture efforts necessitate the services of a veterinarian, one would be obtained before capture would proceed.

The contractor will be apprised of the all conditions and will be given instructions regarding the capture and handling of animals to ensure their health and welfare is protected.

The Authorize Officer and pilot may take a familiarization flight identifying all natural hazards (rims, canyons, winds) and man-made hazards in the area so that helicopter flight crew, ground personnel, and wild horse safety will be maximized. Aerial hazards will be recorded on the project map.

No fence modifications will be made without authorization from the Authorized Officer. The contractor/BLM shall be responsible for restoration of any fence modification which has been made.

If the route the contractor/BLM proposes to herd animals passes through a fence, opening should be large enough to allow free and safe passage. Fence material shall be rolled up and fence posts will be removed or sufficiently marked to ensure safety of the animals. The standing fence on each side of the gap will be well flagged or covered with jute or like material.

Wings shall not be constructed out of materials injurious to animals and must be approved by the Authorized Officer.

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

Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COTR.

Branded or privately owned animals captured during gather operations will be handled in accordance with state estray laws and existing BLM policy.

Capture methods will be identified prior to issuance of delivery orders. Regardless of which methods are selected, all capture activities shall incorporate the following:

a. Trap Site Selection

The Authorized Officer will make a careful determination of a boundary line to serve as an outer limit within which horses will be herded to a selected trap site. The Authorized Officer will insure that the pilot is fully aware of all natural and manmade barriers which might restrict free movement of horses. Topography, distance, and current condition of the horses are factors that will be considered to set limits to minimize stress on horses.

Gather operations will be monitored and restricted (if necessary) to assure the body condition of the horses are compatible with the distances and the terrain over which they must travel. Pregnant mares, mares with small colts, and other horses would be allowed to drop out of bands which are being gathered if required to protect the safety and health of the animals.

All trap and holding facility locations must be approved by the Authorized Officer prior to construction. The situation may require moving of the trap. All traps and holding facilities not located on public land must have prior written approval of the landowner.

Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the Authorized Officer, to relieve stress to the animals caused by specific conditions at the time of the gather (i.e. dust, rocky terrain, temperatures, etc.).

b. Trap/Facility Requirements

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:

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.

All loading chute sides shall be fully covered with plywood (without holes) or like material. The loading chute shall also be a minimum of 6 feet high.

All runways shall be of sufficient length and height to ensure animal and wrangler safety and may 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.

If a government furnished portable chute is used to restrain, age, or to provide additional care for animals, it shall be placed in the runway in a manner as instructed by or in concurrence with the Authorized Officer.

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

When holding facilities are used, and alternate pens are necessary to separate mares with small foals, animals which will be released, sick and injured animals, and estrays from the other animals or to facilitate sorting as to age, number, size, temperament, sex, and condition; they will be constructed to minimize injury due to fighting and trampling. In some cases, the Government will require that animals be restrained for determining an animal's age or for other purposes. In these instances, a portable restraining chute will be provided by the Government. Either segregation or temporary marking and later segregation will be at the discretion of the COTR.

If animals are held in the traps and/or holding facilities, a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day will be supplied. 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.

Separate water troughs shall be provided at each pen where animals are being held. Water troughs shall be constructed of such material (e.g. rubber, rubber over metal) so as to avoid injury to animals.

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

7. Treatment of Injured or Sick; Disposition of Terminal Animals

The contractor/BLM shall restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction shall be done by the most humane method available. Authority for humane destruction of wild horses (or burros) is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Euthanasia is in accordance with BLM policy as expressed in Instructional Memorandum No. 2006-023.

Any captured horses that are found to have the following conditions may be humanely destroyed:

a. The animal shows a hopeless prognosis for life.
b. Suffers from a chronic or incurable disease.
c. Requires continuous care for acute pain and suffering.
d. Not capable of maintaining a Henneke body condition rating of one or two.
e. Has an acute or chronic injury, physical defect or lameness that would not allow the animal to live and interact with other horses, keep up with its peers or exhibits behaviors which may be considered essential for an acceptable quality of life constantly or for the foreseeable future.
f. Suffers from an acute or chronic infectious disease where State or Federal animal health officials order the humane destruction of the animal as a disease control measure.

The Authorized Officer will determine if injured animals must be destroyed and provide for destruction of such animals. The contractor/BLM may be required to dispose of the carcasses as directed by the Authorized Officer.

The carcasses of the animals that die or must be destroyed as a result of any infectious, contagious, or parasitic disease will be disposed of by burial to a depth of at least 3 feet.

The carcasses of the animals that must be destroyed as a result of age, injury, lameness, or non-contagious disease or illness will be disposed of by removing them from the capture site or holding corral and placing them in an inconspicuous location to minimize visual impacts. Carcasses will not be placed in a drainage regardless of drainage size or downstream destination.

8. Motorized Equipment

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 Authorized Officer with a current safety inspection (less than one year old) of all tractor/stock trailers used to transport animals to final destination.

Vehicles 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.

Only stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities. Only stock trailers, or single deck trucks shall be used to haul animals from temporary holding facilities to final destination(s). Sides or stock racks of transporting vehicles shall be a minimum height of 6 feet 6 inches from the vehicle floor. Single deck trucks with trailers 40 feet or longer shall have two (2) partition gates

providing three (3) compartments within the trailer to separate animals. The compartments shall be of equal size plus or minus 10 percent. Trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate animals. The compartments shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have at the minimum a 5 foot wide swinging gate. The use of double deck trailers is unacceptable and will not be allowed.

Vehicles used to transport animals to the final destination(s) shall be equipped with at least one (1) door at the rear end of the vehicle, which is capable of sliding either horizontally of vertically. The rear door must be capable of opening the full width of the trailer. All 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 the trailer must be strong enough, so that the animals cannot push their hooves through the sides. Final approval of vehicles to transport animals shall be held by the Authorized Officer.

Floors of vehicles, trailers, and the loading chute shall be covered and maintained with materials sufficient to prevent the animals from slipping.

Animals to be loaded and transported in any vehicle or trailer shall be as directed by the Authorized Officer and may include limitations on numbers according to age, size, sex, temperament, and animal condition. The minimum square footage per animal is as follows:

11 square feet/adult horse (1.4 linear foot in an 8 foot wide trailer)
06 square feet/horse foal (0.75 linear foot in an 8 foot trailer)

The Authorized Officer shall consider the condition of the animals, weather conditions, type of vehicles, distance to be transported, or other factors when planning for the movement of captured animals. The Authorized Officer shall provide for any brand and/or inspection services required for the captured animals.

Communication lines will be established with personnel involved in off-loading the animals to receive feedback on how the animals arrive (condition/injury etc.). Should problems arise, gathering methods, shipping methods and/or separation of the animals will be changed in an attempt to alleviate the problems.

If the Authorized Officer determines that dust conditions are such that animals could be endangered during transportation, the contractor/BLM will be instructed to adjust speed and/or use alternate routes.

Periodic checks by the Authorized Officer will be made as animals are transported along dirt roads. If speed restrictions are in effect the Authorized Officer will at times follow and/or time trips to ensure compliance.

9. Special Stipulations.

Private landowners or the proper administering agency(s) would be contacted and authorization obtained prior to setting up traps on any lands which are not administered by BLM. Wherever possible, traps would be constructed in such a manner as to not block vehicular access on existing roads.

If possible, traps would be constructed so that no riparian vegetation is contained within them. Impacts to riparian vegetation and/or running water is located within a trap (and available to horses) would be mitigated by removing horses from the trap immediately upon capture. No vehicles would be operated on riparian vegetation or on saturated soils associated with riparian/wetland areas.

Whenever possible, gathering would be conducted when soils are dry or frozen and conditions are optimal for

safety and protection of the horses and wranglers. Also, whenever possible, scheduling of gathers would be done to minimize impacts with big game hunting seasons.

Gathers would not be conducted 6 weeks on either side of peak foaling season, which for this gather is April 15th, to reduce the chance of injury or stress to pregnant mares or mares with young foals.

The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. No unnecessary flying would occur over big game on their winter ranges or active fawning/calving grounds during the period of use.

Standard operating procedures in the setting-up and construction of traps will avoid adverse impacts to wildlife species, including threatened, endangered, or sensitive species.

Weed free hay will be used for bait trapping, and feeding purposes of wild horses and/or domestic horses at trap sites. Hay feed at Temporary Holding Facilities placed on federal lands will be certified weed free hay or approved by the authorized officer on site.

10. Herd Health and Viability Data Collection

The following information will be collected from each animal captured: age, sex, color, overall health, pregnancy or nursing status.

In addition, blood or hair samples may be collected from individuals within the herd. Certain other activities including immunocontraceptive research, radio collaring, respiratory disease, and freeze marking may be conducted.

a. Population Management Plan/Selective Addition or Removal

Blood samples may be taken for the purposes of furthering genetic ancestry studies and incorporation into the Population Management Plans which will be developed for each HMA/complex.

On occasion, it may be necessary to enhance and maintain genetic diversity a few animals with compatible characteristics may be introduced from other HMAs. Introduced animals will be taken from areas with similar habitat.

b. Immunocontraceptive Research

When the immunocontraceptive vaccine is used, delivery of the vaccine will be conducted by trained individuals, using approved delivery methods. The vaccine will be administered to the large muscle on the hip and/or as the approved delivery methods directs.

c. Respiratory Disease Research

Serum and nasal samples may be taken from all saddle horses and Judas horses within 48 hours before or after the first day of each gather. Swabs would be used to collect samples of nasal discharge or of the material drainage from the abscess from clinically ill wild horses during routine restraint. Data gathered from this research would be used in future management of wild horse during gathering and holding.

11. Public Participation

Prior to conducting a gather a communications plan or similar document summarizing the procedures to follow when media or interested public request information or viewing opportunities during the gather should be prepared.

The public must adhere to guidance from the agency representative and viewing must be prearranged.

12. Safety

Safety of BLM employees, contractors, members of the public, and the wild horses will be given primary consideration. The following safety measures will be used by the Authorized Officer and all others involved in the operation as the basis for evaluating safety performance and for safety discussions during the daily briefings:

A briefing between all parties involved in the gather will be conducted each morning.

All BLM personnel, contractors and volunteers will wear protective clothing suitable for work of this nature. BLM will alert observers of the requirement to dress properly (see Wild Horse and Burro Operational Hazards, BLM File 4720, UT-067). BLM will assure that members of the public are in safe observation areas.

The handling of hazardous, or potentially hazardous materials such as liquid nitrogen and vaccination needles will be accomplished in a safe and conscientious manner by BLM personnel or the contract veterinarian.

13. Responsibility and Lines of Communication

The local WH&B Specialist / Project Manager from the CCFO, have the direct responsibility to ensure the contractor's compliance with the contract stipulations.

Gather Research Coordinator (GRC) from the CCFO, will have the direct responsibility to ensure compliance with all data collection and sampling. The GRC will also ensure appropriate communication with Field Office Manager, WO260 National Research Coordinator, College of Veterinary Medicine at Texas A&M University, and Animal Plant Health Inspection Service (APHIS).

The CCFO Assistant Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, Salt Lake Regional Wild Horse Corrals and Delta Wild Horse Corrals.

All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

14. Glossary

Appropriate Management Level - The number of wild horses and burro which can be sustained within a designated herd management area which achieves and maintains a thriving natural ecological balance keeping with the multiple-use management concept for the area.

Authorized Officer - An employee of the BLM to whom has been delegated the authority to perform the duties described in these Standard Operating Procedures. See BLM Manual 1203 for explanation of delegation of

authority.

Census - The primary monitoring technique used to maintain a current inventory of wild horses and burros on given areas of the public lands. Census data are derived through direct visual counts of animals using a helicopter.

Contracting Officer (CO) - Is the individual responsible for an awarded contract, deals with claims, disputes, negotiations, modifications, payments and appoints COTRs and PIs.

Contacting Officers Technical Representative (COTR) - Acts as the technical representative for the CO on a contract. Ensures that all specifications and stipulations are met. Reviews the contractor's progress, advises the CO on progress, problems, costs, etc. Is responsible for review, approval, and acceptance of services.

Evaluation - A determination based on studies and other data that are available as to if habitat and population objectives are or are not being met and where an overpopulation of wild horses and burros exists and whether actions should be taken to remove excess animals.

Excess Wild Horses or Burros - Wild free-roaming horses or burros which have been removed from public lands or which must be removed to preserve and maintain a thriving ecological balance and multiple-use relationship.

Gather Research Coordinator (GRC)- A BLM employee that is designated by the Field Office Manager prior to each gather, who identifies potential problem areas in research data collection, determines need for additional field assistance to meet sampling requirements, ensures compliance with all data sampling, and communicants and coordinates all data gather during a gather with the Field Office Manager, WO260 National Research Coordinator, Colorado State University Center of Veterinary Epidemiology and Animal Disease and Surveillance Systems (CSU-CVEADSS), and Animal Plant Health Inspection Service (APHIS).

Genetically Viable - Fitness of a population as represented by its ability to maintain the long-term reproductive capacity of healthy, genetically diverse members.

Health Assessment - Evaluation process based on best available studies data to determine the current condition of resources in relation to potential or desired conditions.

Healthy Resources - Resources that meet potential or desired conditions or are improving toward meeting those potential or desired conditions.

Herd Area - The geographical area identified as having been used by wild horse and burro populations in 1971, at the time of passage of the Wild Free-roaming Horse and Burro Act.

Herd Management Area - The geographical area as identified through the land use planning process established for the long-term management of wild horse and burro populations. The boundaries of the herd management area may not be greater than the area identified as having been used by wild horse and burro populations in 1971, at the time of passage of the Wild Free-roaming Horse and Burro Act.

Invasive Weeds - Introduced or noxious vegetative species which negatively impact the ecological balance of a geographical area and limit the areas potential to be utilized by authorized uses.

Metapopulation (complex) - A population of wild horses and burros comprised of two or more smaller, interrelated populations that are linked by movement or distribution within a defined geographical area.

Monitoring - Inventory of habitat and population data for wild horses and burros and associated resources and other authorized rangeland uses. The purpose of such inventories is to be used during evaluations to make determinations as to if habitat and population objectives are or are not being met and where an overpopulation of wild horses and burros exists and whether actions should be taken to remove excess animals.

Multiple Use Management - A combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals watershed, domestic livestock, wild horses, wild burros, wildlife, and fish, along with natural, scenic, scientific, and historical values.

Project Inspector - Coordinates with the COTR assigned to a contract to support his/her responsibility for review, approval, and acceptance of services.

Research - Science based inquiry, investigation or experimentation aimed at increasing knowledge about wild horses and burros conducted by accredited universities or federal government research organizations with the active participation of BLM wild horse and burro professionals.

Science Based Decision Making - Issuance of decisions affecting wild horses and burros, associated resources and other authorized rangeland uses incorporating best available habitat and population data and in consultation with the public.

Studies - Science based investigation of specific aspects of wild horse and burro habitat or populations in supplement to established monitoring. These investigations would not be established following rigid experimental protocols and could include drawing blood on animals to study genetics, disease and general health issues and population dynamics such as reproduction and mortality rates and general behavior.

Thriving Natural Ecological Balance - An ecological balance requires that
wild horses and burros and other associated animals be in good health and reproducing at a rate that sustains the population, the key vegetative species are able to maintain their composition, production and reproduction, the soil resources are being protected, maintained or improved, and a sufficient amount of good quality water is available to the animals.

Appendix 5.
Standard BLM Operating Procedures for Fertility Control Treatment

The following management and monitoring requirements are part of the proposed action:

The 22 month pelleted Porcine zona pellucida (PZP) vaccine would be administered by trained BLM personnel.

The fertility control drug would be administered with two separate injections: (1) a liquid dose of PZP is administered using an 18 gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14 gauge needle. These are loaded on the end of a trocar (dry syringe with a metal rod) which is loaded into the jabstick which then pushes the pellets into the breeding mares being returned to the range. The pellets and liquid are designed to release the PZP over time similar to a time release cold capsule.

Delivery of the vaccine would be as an intramuscular injection while the mares are restrained in a working chute. 0.5 cubic centimeters (cc) of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid and pellets would be propelled into the left hind quarters of the mare, just below the imaginary line that connects the point of the hip and the point of the buttocks.

All treated mares would be freeze-marked with two 3.5-inch letters on the left hip for treatment tracking purposes. The only exception to this requirement is that each treated mare can be clearly and specifically identified through photographs or markings. This step is to enable researchers to positively identify the animals during the research project as part of the data collection phase.

At a minimum, estimation of population growth rates using helicopter or fixed wing surveys would be conducted the year preceding any subsequent gather. During these surveys it would not be necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of mares).

Population growth rates of herds selected for intensive monitoring would be estimated every year post-treatment using helicopter or fixed wing surveys. During these surveys it would not be necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of mares). During routine HMA field monitoring (on-the-ground), if data on mare to foal ratios can be collected, these data should also be shared with the NPO for possible analysis by the USGS.

A PZP Application Data sheet would be used by the field applicators to record all the pertinent data relating to identification of the mare (including a photograph if the mares are not freeze-marked) and date of treatment. Each applicator would submit a PZP Application Report and accompanying narrative and data sheets would be forwarded to the NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken would be maintained at the field office.

A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and state along with the freeze-mark applied by HMA.

Appendix 7

Population Model

North Hills 2010 Population Modeling

To complete the population modeling for the North Hills Herd Management Area, version 1.40 of the WinEquus program, created April 2, 2002, was utilized.

Objectives of Population Modeling

Review of the data output for each of the simulations provided many use full 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 that was supplied with the Winn Equus population for the Garfield HMA.

Sex ratio at Birth:
43% Females
57% Males

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

Year 1: 94%, Year 2: 82%, Year 3: 68%

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

Contraception Criteria

(Alternative I)

Age	Percentages for Fertilty Treatment
1	0%
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 Proposed Action and all alternatives:

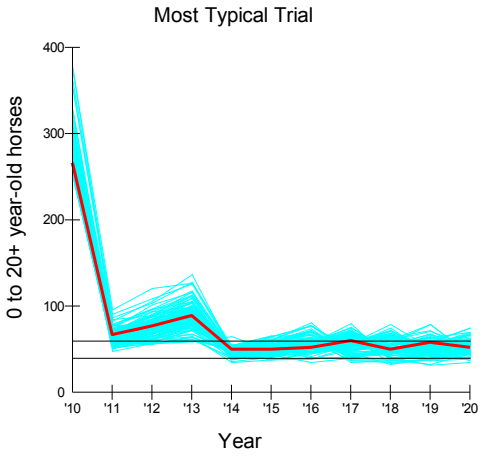
- Starting year: 2010
- Intial Gather Year: 2010
- Gather interval: regular interval of three years
- Gather for fertility treatment regardless of population size: No
- Continue to gather after reduction to treat females: Yes
- Sex ratio at birth: 57% males
- Percent of the population that can be gathered: 80%
- Minimum age for long term holding facility horses: Not Applicable
- Foals are not included in the AML
- Simulations were run for 10 years with 100 trials each

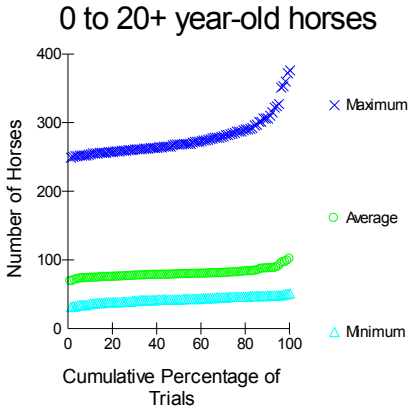
The following table displays the population modeling parameters utilized in the model:

Population Modeling Parameters Modeling Parameter	Alternative A Proposed Action (Remove to Low point of AML, Adjust sex ratio 60-40 & Fertility Control)	Alternative B Remove Excess Animals (Low Point AML) Without Fertility Control)	Alternative C No Action (No Removal & No Fertility Control)
Management by removal, 60:40 adjustment in sex ratio, and fertility control	**Yes**	**No**	**N/A**
Management by removal only	**No**	**Yes**	**N/A**
Threshold Population Size Following Gathers	**60**	**60**	**N/A**
Target Population Size Following gather	**40**	**40**	**N/A**
Gather for fertility control regardless of population size	**No**	**No**	**N/A**
Gather 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**

Results- Alternative A: Proposed Action – Selective Removal of Excess Animals (Low Point AML); Apply Two-Year Fertility Control, & 60% Male Sex Ratio

Population Size



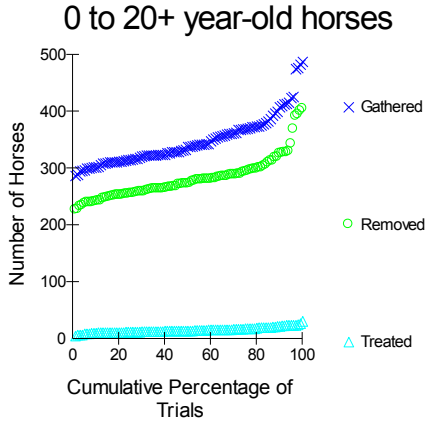


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	32	69	250
10th Percentile	37	74	256
25th Percentile	40	76	260
Median Trial	43	79	269
75th Percentile	47	82	287
90th Percentile	49	88	309
Highest Trial	52	102	377

* 0 to 20+ year-old horses

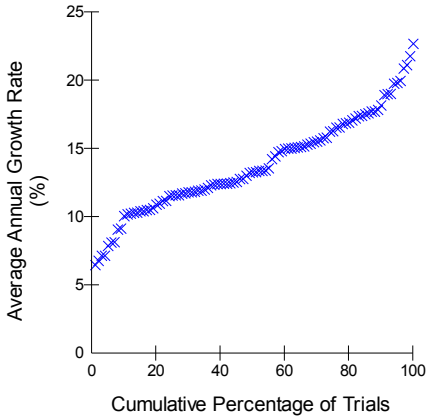
In 11 years and 100 trials, the lowest number 0 to 20+ year-old horses ever obtained was 32 and the highest was 377. In half the trials, the minimum population size in 11 years was less than 43 and the maximum was less than 269. The average population size across 11 years ranged from 69 to 102.



Totals in 11 Years*

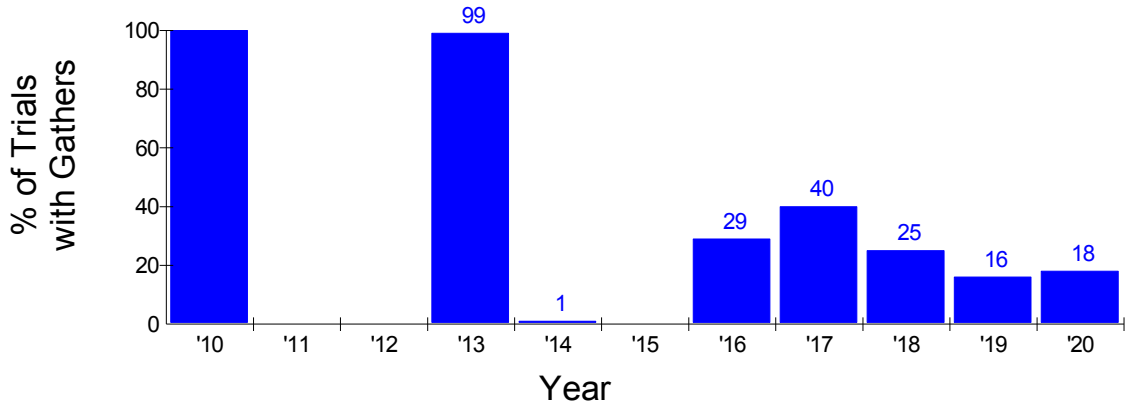
	Gathered	Removed	Treated
Lowest Trial	287	227	5
10th Percentile	302	242	10
25th Percentile	316	256	12
Median Trial	338	274	14
75th Percentile	370	294	18
90th Percentile	409	326	22
Highest Trial	488	405	31

* 0 to 20+ year-old horses



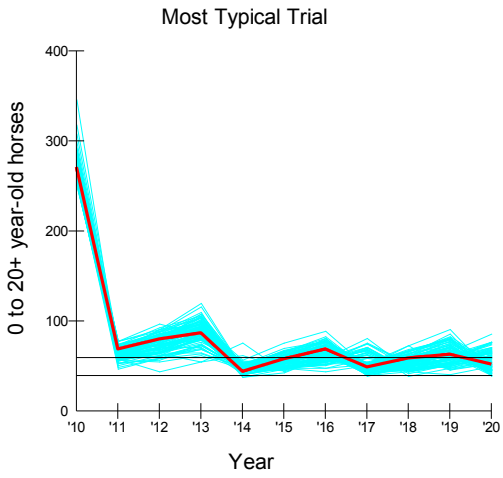
Average Growth Rate in 10 Years

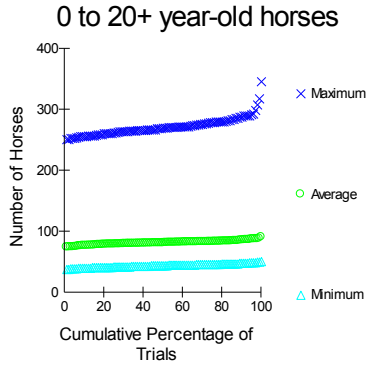
Lowest Trial	6.5
10th Percentile	10.1
25th Percentile	11.6
Median Trial	13.3
75th Percentile	16.4
90th Percentile	18.6
Highest Trial	22.7



Results Alternative B Remove Excess Animals (Low Point AML) Without Fertility Control

Population Size



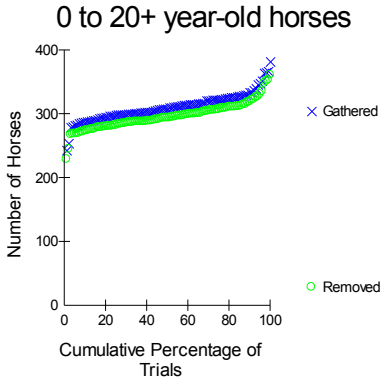


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	38	74	251
10th Percentile	40	77	256
25th Percentile	42	79	262
Median Trial	44	81	270
75th Percentile	46	83	279
90th Percentile	48	86	289
Highest Trial	51	91	346

* 0 to 20+ year-old horses

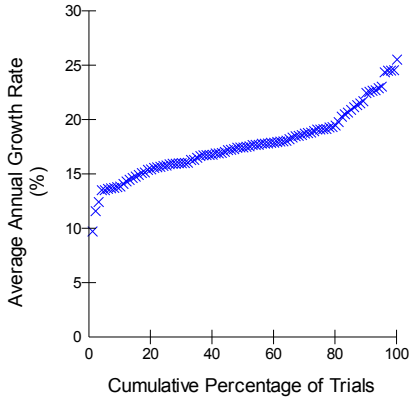
In 11 years and 100 trials, the lowest number 0 to 20+ year-old horses ever obtained was 38 and the highest was 346. In half the trials, the minimum population size in 11 years was less than 44 and the maximum was less than 270. The average population size across 11 years ranged from 74 to 91.



Totals in 11 Years*

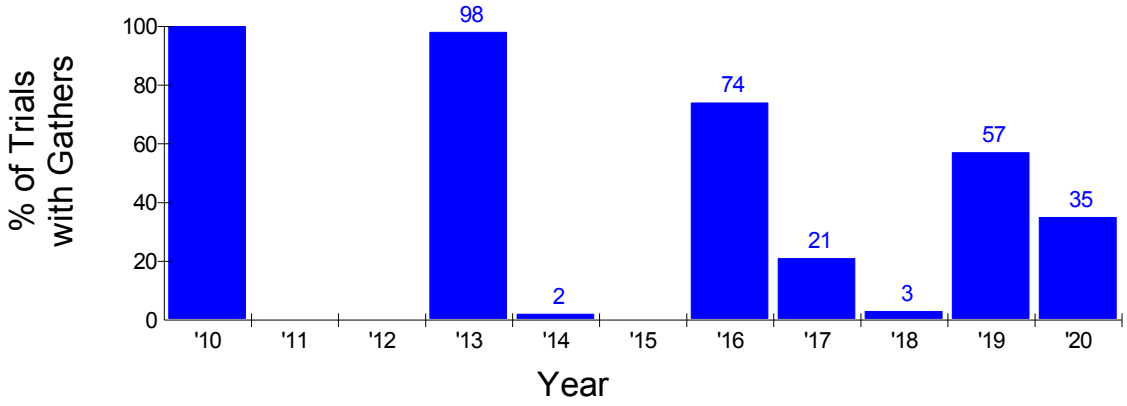
	Gathered	Removed
Lowest Trial	243	229
10th Percentile	288	274
25th Percentile	298	283
Median Trial	309	294
75th Percentile	322	308
90th Percentile	334	320
Highest Trial	382	361

* 0 to 20+ year-old horses



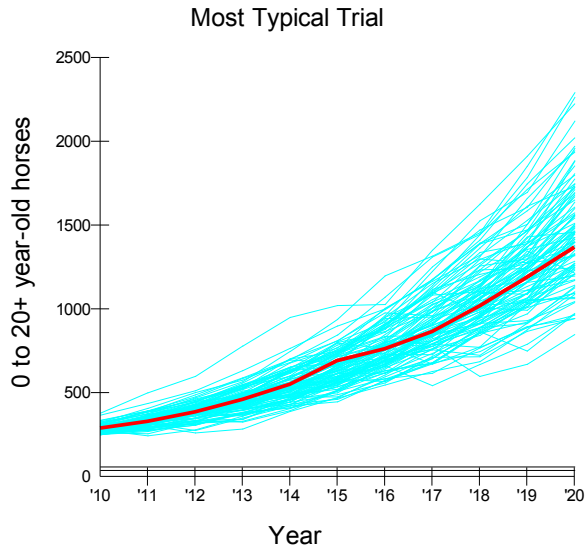
Average Growth Rate in 10 Years

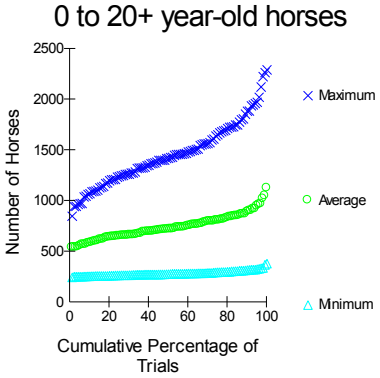
Lowest Trial	9.8
10th Percentile	14.0
25th Percentile	15.9
Median Trial	17.5
75th Percentile	19.2
90th Percentile	22.6
Highest Trial	25.6



Results - No Action

Population Size



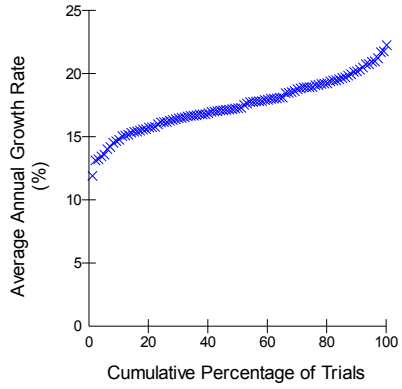


Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	246	540	850
10th Percentile	258	588	1082
25th Percentile	266	655	1244
Median Trial	278	722	1425
75th Percentile	296	809	1662
90th Percentile	318	896	1887
Highest Trial	382	1127	2294

* 0 to 20+ year-old horses

In 11 years and 100 trials, the lowest number 0 to 20+ year-old horses ever obtained was 246 and the highest was 2294. In half the trials, the minimum population size in 11 years was less than 278 and the maximum was less than 1425. The average population size across 11 years ranged from 540 to 1127.



Average Growth Rate in 10 Years

Lowest Trial	11.9
10th Percentile	15.0
25th Percentile	16.2
Median Trial	17.3
75th Percentile	19.1
90th Percentile	20.3
Highest Trial	22.3

Appendix 8
North Hills Population Inventory

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Color Country Field Office
Cedar City Field Office
176 East DL Sargent Drive
Cedar City, UT 84721
Telephone (435) 586-2401
www.blm.gov/ut/st/en/fo/cedar_city.html

In Reply Refer To:
UTC012
4710

February 1, 2010

MEMORANDUM

To: Wild Horse Files (UT-447)

From: Chad Hunter (CCFO Wild Horse/Range Mgt. Specialist)

Subject: Wild Horse helicopter inventory of the North Hills HMA and FS Wild Horse Territory.

This memorandum outlines the findings of a helicopter inventory of wild horses on the North Hills HMA, which for this document includes the North Hills Forest Service Wild Horse Territory. The flight was done on **January 26, 2010**. A bell 47 helicopter from Sky-Hawk helicopters in Minersville, Utah was used. Alan Carter was the pilot while I acted as the BLM helicopter crew member and flight manager. As the crew member I recorded numbers, locations, body conditions, yearling numbers and colors of the horses observed during the flight. John Burke acted as the Helicopter Managers and completed the safety plan, card checks, arranged flight following, OAS-23, and other helicopter checks and paperwork. Color Country Dispatch coordinated the use of air space in the Desert MOA that occurs to the west of the North Hills HMA. A Trimble GeoXM was used to record the number of horses, number of yearlings, colors of horses, and location of horses recorded. It also recorded the flight path that was reviewed during refueling to make sure the area was being adequately covered. The Trimble's coverage of the flight path has blank spots where good satellite coverage was lost for short periods during the flight. However, the locations of the horses were recorded without complications. The flight path is shown on Map 2.

The flight originated at BLM's Air Tanker Base at the Cedar City, Utah airport at approximately 0800. John Burke reviewed the cards for the helicopter and pilot. A safety briefing was given and flight plans for the day was reviewed.

A mobile Skyhawk fuel truck provided fuel for the population inventory and was sent from the base at Minersville to fueling location at the Forest Service yard in Enterprise, Utah. Ferry time from Skyhawk's base to the HMA approximately ¾ hour(s). Approximately 5 ½ hours were spent on the North Hills HMA population inventory. Total flight time for the day was 8 hours at $856 an hour. Cost for the

population inventory flight was approximately $7,500 ($856 per hour + fuel truck + extended hours).

The objective was to do a wild horse population inventory on the North Hills HMA. Weather and flight conditions were very good for this population inventory. The flight started on the Forest Service area south of Shoal Creek where there are horses that are outside of the HMA boundary. This area has horses that are separated by fences and terrain from the other horses counted in the area. Ten (10) wild horses were located in this area. Tracks of 3-4 head were located that did not produce horse, but are believed to be in that area. Five head were south of Shoal Creek, but at the mouth of Nephi Wash. This 5 head are able to go back into the wild horse area without any boundaries and are not included in the number of horses outside the HMA.

Ten (10) head of wild horses are currently located within the Stud Horse pasture within the Forest Service allotment. This pasture has had problems with wild horses get trapped in it without water. It is believed that the horses that are currently within the pasture came through gates that have been left open or traveled on the crusted snow over the fences. Currently the horses have plenty of food and water, but come spring time the horses will need to be moved from the pasture so they do not run out of water.

The majority of the horses were located on the south slopes of the Haystack Mountain just south of Modena. The flight area had snow cover of 6" to 24", depending on elevation, that was only three days old. The fresh snow made horses easier to find. Their tracks in the snow were visible from the air at up to a mile in open (no trees) areas. In the treed areas the tracks were visible from ¼ to ½ mile away. More flight time was spent in areas that had tracks while areas without tracks were flown over quickly. This allow for flight time to be spent in areas where the horses were located, such as south facing, windblown slopes. This HMA has large areas of heavily treed areas that were only flown briefly looking for tracks. An area along the Forest Service and BLM boundary was not flown due to its higher elevations that had deep snow. Another area in the northeast part of the HMA is very open and tracks could be seen up to 1 mile away. No horses or tracks were seen in this area. These areas also have had a low number of horses in them during past population inventories.

Most horses were in Henneke Body Class 5 (Moderate) to 4 (Moderately thin), which is normal for this time of year. As the winter wears on more horse's body condition is expected to drop into the 3-4 range. Six (6) to eight (8) older horses were in body condition 3 (Thin). However, it is expected that three of these horses will make it through this winter. The other horses were in deep snow and it is not expected that these horses will last through the month. No young colts (under 6 months) were observed during the flight.

Several head of mule deer were counted during the population inventory. The numbers were high enough that an accurate count of the deer was not kept. It is estimated the over 300 head of deer were seen during the population inventory.

On the North Hills HMA a total of **187** head of wild horses were counted. There were twenty six (26) yearlings counted on the HMA. It is estimated that 90% of the horses on the HMA were counted because of the good snow conditions and coverage of the flight. The estimated population for the HMA is below. This HMA does not see much interchange from horses from other HMAs, but some does occur with adjacent HMAs in Nevada. Horses from other wild horse HMAs have been introduced to the HMA in the past to maintain genetic viability. However no new horses have been introduced to the HMA since the last population inventory. It is unknown if any domestic horses have been turned out on the HMA, but it is believed that some have been. Possibly over 20 head.

The total for the *North Hills HMA* is 187 (including 26 horses that were yearlings) were counted in 48 bands.

North Hills HMA population increase this last year was **14%**. 26(f) ÷ 187(a) x 100 = 14%

Several of the bands were small and believed to be bachelor bands or possible domestic horse that have been turned out

Populations

North Hills HMA
187 head total = 90% 187= .90(X) 187 ÷.90= X X= 208
Estimated Population 208 head

The snow conditions and coverage of the flight has allowed an estimated 90% count of the total number of horses on the HMA.

Key points to note with FY 2010 Population inventory.

- Reproduction rate is less than 20% which is normally used to estimate population growth on this HMA. The reproduction rate could be affected by domestic horse turn out.
- Estimated numbers of wild horses on the HMA was lower without population inventory.
- Horses were in good condition.
- No young colts counted during this time of year.
- It is believed some domestic horses have been released into the HMAs.
- Elk use of this HMA has increased in the last 10 years from 0 to 20-40 head yearlong.

/Chad Hunter

Attachments
1. Aerial Population inventory Spread Sheet (includes North Hills population inventory).
2. Map 1 of Aerial Population Inventory
3. Map 2 Flight Path of Population Inventory

Arial Population Spread Sheet

BLM Cedar City Field Office

Wild Horse and Burro Census 2010

Frisco and North Hills

2/10/2010

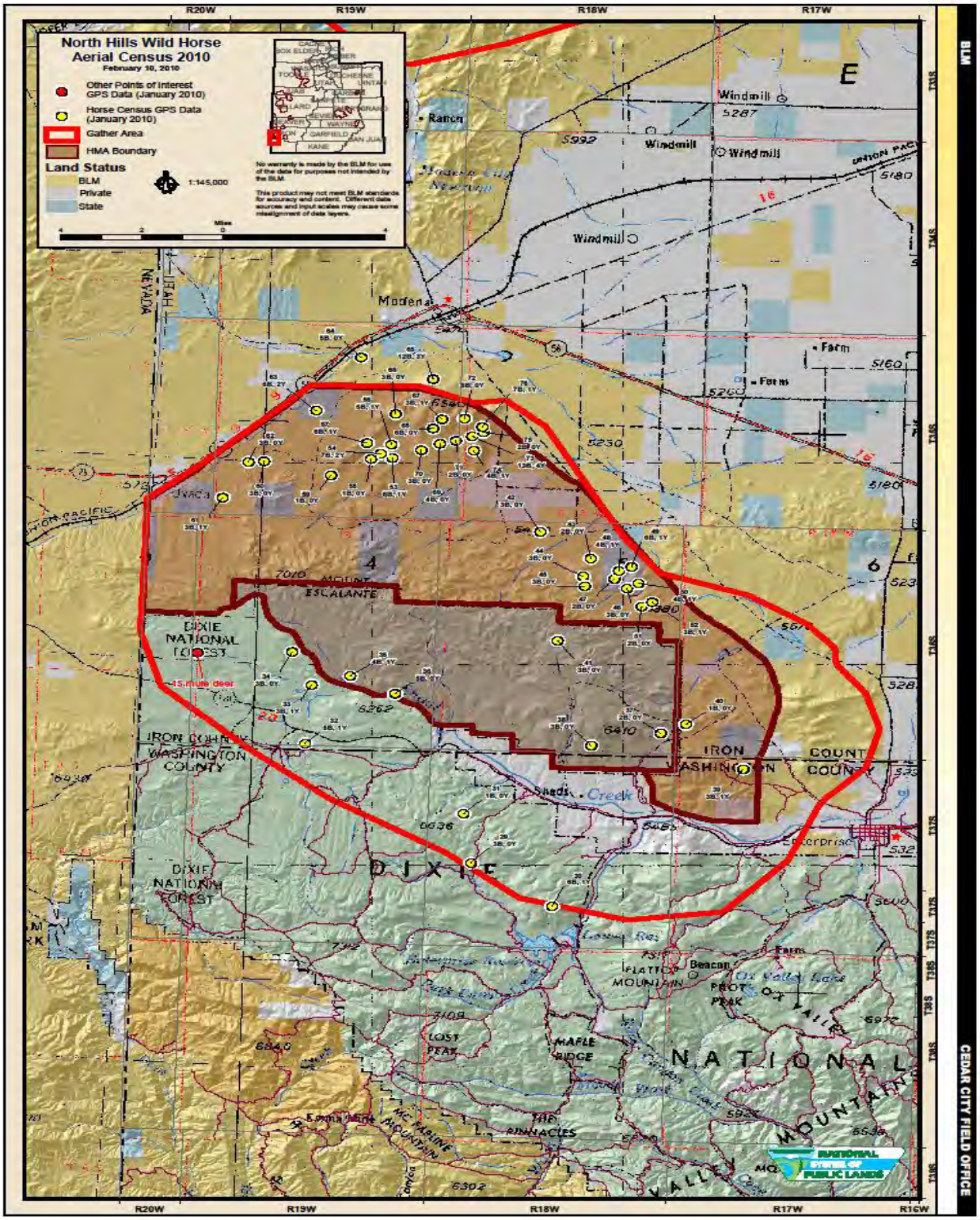
ID	Census Area	HMA	WH_Band	Yearlings	Colts	Bay	Black	Brown	Sorrel	Gray	Grulla	Buckskin	Dun	Red_Roam	Blue_Roam	Pinto	Palomino	Other	POINT_X	POINT_Y
2	Frisco Census Area	Frisco	5	1	4	0	0	0	0	0	0	0	0	0	0	1	0	0	312565.08	4264088.20
3	Frisco Census Area	Frisco	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	312280.39	4264614.40
4	Frisco Census Area	Out	7	1	0	6	0	0	0	0	0	0	0	0	0	0	1	0	311803.23	4277046.24

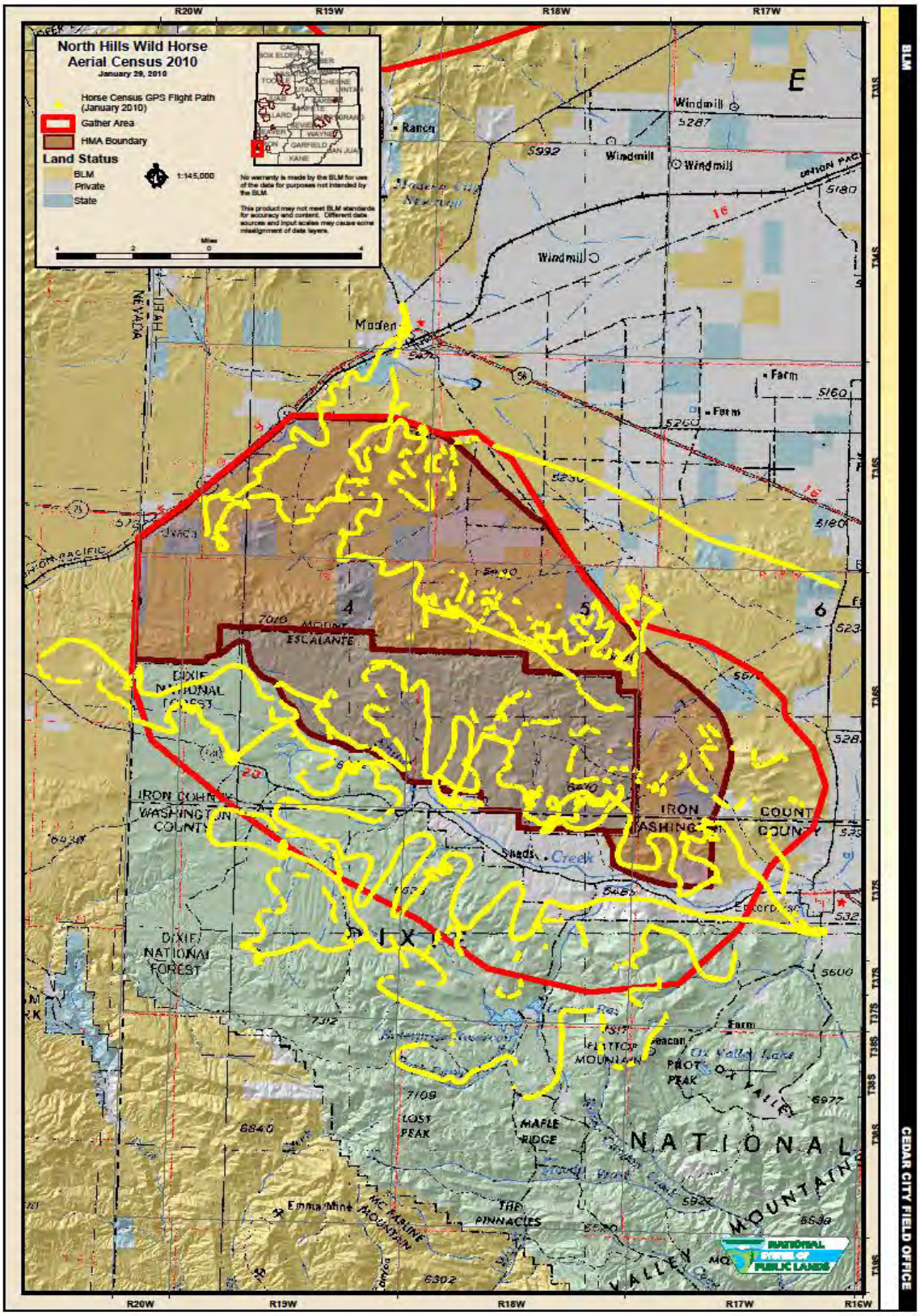
5	Frisco Census Area	Out	4	1	0	1	0	0	0	0	0	3	0	0	0	0	0	0	311357.25	4277323.83
6	Frisco Census Area	Frisco	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308851.56	4276876.20
7	Frisco Census Area	Frisco	3	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	310341.56	4277326.38
8	Frisco Census Area	Frisco	4	1	0	3	0	0	0	0	0	0	0	0	0	1	0	0	309549.74	4275738.60
9	Frisco Census Area	Frisco	4	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	308183.83	4273364.90
10	Frisco Census Area	Frisco	4	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	305719.54	4274532.38
11	Frisco Census Area	Frisco	5	2	0	0	0	2	2	1	0	0	0	0	0	0	0	0	304872.10	4278544.38
12	Frisco Census Area	Frisco	4	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	302814.28	4278664.47
13	Frisco Census Area	Frisco	3	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	302485.89	4277278.25
14	Frisco Census Area	Frisco	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	303769.84	4277233.05
15	Frisco Census Area	Frisco	4	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	304578.12	4274151.22
16	Frisco Census Area	Frisco	3	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	300513.77	4272231.89
17	Frisco Census Area	Frisco	4	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	301226.27	4271481.28
18	Frisco Census Area	Frisco	7	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	299230.11	4270792.13

19	Frisco Census Area	Frisco	4	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	301103.41	4270950.91
20	Frisco Census Area	Frisco	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	301357.51	4270629.04
21	Frisco Census Area	Frisco	5	1	0	3	0	0	0	1	1	0	0	0	0	0	0	0	302463.42	4271640.12
22	Frisco Census Area	Frisco	7	2	0	0	0	0	2	1	0	0	0	0	0	0	0	0	299234.39	4269301.90
23	Frisco Census Area	Frisco	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	298919.19	4269909.48
24	Frisco Census Area	Frisco	6	1	0	4	0	0	1	0	1	0	0	0	0	0	0	0	299799.17	4268679.48
25	Frisco Census Area	Frisco	8	1	0	4	0	0	1	1	2	0	0	0	0	0	0	0	299598.48	4268543.01
26	Frisco Census Area	Frisco	3	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	300440.02	4268755.25
27	Frisco Census Area	Out	4	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	297354.05	4265297.60
29	North Hills Census Area	Out	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	243831.58	4160276.15
30	North Hills Census Area	Out	6	1	0	2	0	1	0	0	0	0	0	3	0	0	0	0	247041.33	4158133.76
31	North Hills Census Area	Out	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	243526.87	4162731.11
32	North Hills Census Area	Out	5	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	237235.53	4166224.14
33	North Hills Census Area	Out	3	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	237495.56	4169138.31
34	North Hills Census Area	Out	3	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	236722.49	4170791.45
35	North Hills Census Area	North Hills	4	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	239022.41	4169582.74
36	North Hills Census Area	North Hills	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	240805.20	4168696.13
37	North Hills Census Area	North Hills	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	251367.14	4166736.57
38	North Hills Census Area	North Hills	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	248601.36	4166119.18

39	North Hills Census Area	North Hills	3	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	254650.44	416494 2.99
40	North Hills Census Area	North Hills	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	252360.28	416717 3.50
41	North Hills Census Area	North Hills	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	247272.94	417133 9.22
42	North Hills Census Area	North Hills	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	246582.18	417675 7.90
43	North Hills Census Area	North Hills	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	248575.47	417542 9.73
44	North Hills Census Area	North Hills	3	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	248278.32	417454 2.69
45	North Hills Census Area	North Hills	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	248343.94	417405 5.11
46	North Hills Census Area	North Hills	3	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	250032.69	417394 8.43
47	North Hills Census Area	North Hills	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	249521.69	417441 1.60
48	North Hills Census Area	North Hills	4	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	249701.24	417481 7.07
49	North Hills Census Area	North Hills	6	1	0	4	0	2	0	0	0	0	0	0	0	0	0	0	250196.76	417501 7.03
50	North Hills Census Area	North Hills	4	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	250484.87	417418 9.19
51	North Hills Census Area	North Hills	2	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	250600.90	417303 1.83
52	North Hills Census Area	North Hills	3	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	251026.80	417325 6.65
53	North Hills Census Area	North Hills	6	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	240694.43	418042 2.07
54	North Hills Census Area	North Hills	7	2	0	5	0	0	2	0	0	0	0	0	0	0	0	0	240247.82	418064 7.26
56	North Hills Census Area	North Hills	5	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	240660.25	418110 9.13
57	North Hills Census Area	North Hills	6	1	0	4	2	0	0	0	0	0	0	0	0	0	0	0	239691.08	418117 7.93
58	North Hills Census Area	North Hills	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	239856.12	418037 5.44
59	North Hills Census Area	North Hills	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	238261.59	417957 3.98
60	North Hills Census Area	North Hills	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	235598.10	418026 3.55
61	North Hills Census Area	North Hills	3	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	233951.53	417845 8.88
62	North Hills Census Area	North Hills	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	234982.44	418023 5.09
63	North Hills Census Area	North Hills	6	2	0	5	0	0	1	0	0	0	0	0	0	0	0	0	237672.10	418279 1.68
64	North Hills Census Area	Out	5	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	239451.93	418544 3.33

65	North Hills Census Area	Out	12	3	0	7	3	2	0	0	0	0	0	0	0	0	0	0	242321.44	418435 2.47
66	North Hills Census Area	North Hills	3	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	240829.53	418262 4.81
67	North Hills Census Area	North Hills	3	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	242671.03	418235 6.71
68	North Hills Census Area	North Hills	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	242323.72	418189 8.59
69	North Hills Census Area	North Hills	4	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	242594.39	418114 4.50
70	North Hills Census Area	North Hills	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	241848.71	418081 5.99
71	North Hills Census Area	North Hills	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	243232.89	418128 2.80
72	North Hills Census Area	North Hills	5	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	243573.49	418239 3.09
73	North Hills Census Area	North Hills	13	4	0	4	0	6	0	0	0	3	0	0	0	0	0	0	243861.02	418151 2.43
74	North Hills Census Area	North Hills	4	1	0	2	0	1	1	0	0	0	0	0	0	0	0	0	243936.29	418079 5.53
75	North Hills Census Area	North Hills	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	244307.32	418170 2.31
76	North Hills Census Area	North Hills	7	1	0	4	0	0	0	0	0	3	0	0	0	0	0	0	244266.50	418198 0.73


North Hills Wild Horse
Aerial Census 2010
February 10, 2010
Other Points of Interest
GPS Data (January 2010)
Horse Census GPS Data
(January 2010)
Gather Area
HMA Boundary
Land Status
BLM
Private
State
1:145,000
Miles
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.
R20W
R19W
R18W
R17W
R16W
BLM
CEDAR CITY FIELD OFFICE
Modena
Windmill
Ranch
Farm
DIXIE NATIONAL FOREST
IRON COUNTY
WASHINGTON COUNTY
MOUNT ESCALANTE
15 mule deer
DIXIE
NATIONAL FOREST
Beacon
PINE VALLEY MOUNTAIN
MAPLE RIDGE
LOST PEAK
THE PINNACLES
NC FARLINE MOUNTAIN
NATIONAL MONUMENT
PUBLIC LANDS


North Hills Wild Horse
Aerial Census 2010
January 29, 2010
Horse Census GPS Flight Path (January 2010)
Gather Area
HMA Boundary
Land Status
BLM
Private
State
1:145,000
Miles
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers.
R20W
R19W
R18W
R17W
R16W
T41S
T42S
T43S
T44S
T45S
T46S
T47S
T37S
T38S
T39S
BLM
CEDAR CITY FIELD OFFICE
Windmill
Ranch
Farm
Modena
MOUNT ESCALANTE
DIXIE NATIONAL FOREST
IRON COUNTY
WASHINGTON COUNTY
Shads Creek
Beacon
PROT PEAK
FLATTOP MOUNTAIN
LOST PEAK
MAPLE RIDGE
THE PINNACLES
Emma Mine
MC MARINE MOUNTAIN
NATIONAL MOUNTAIN
NATIONAL PUBLIC LANDS

Appendix 9

Scheduled Observation Day Protocol and Ground Rules

These rules were created to ensure the safety of both the humans and the animals at the gather site(s).

A scheduled public observation day provides a more structured mechanism for interested members of the public to see the wild horse gather activities at a given site. The BLM attempts to allow the public to get an overall sense of the gather process and has available staff who can answer questions that the public may have. The public rendezvous at a designated place and are escorted by BLM representatives to and from the gather site.

- The Bureau of Land Management (BLM) will schedule observation days to provide the media and public opportunities to view activities during the wild horse gather.
- To provide a safe environment for the animals, BLM staff, contractors and members of the public/media, requests will be accepted on a first come, first served basis and be limited to **10 people** per observation day. The BLM recommends all appointments be made as far in advance as possible in order to help us schedule and confirm your request, and will make every reasonable effort to accommodate the public.
- Observation days and gather operations may be suspended if bad weather conditions create unsafe flying conditions.
- The BLM will notify observers as soon as possible if an observation day is canceled due to bad weather.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, clothing and food.
- Observers are prohibited from riding in government and contractor vehicles and equipment.
- Visitors arriving at the rendezvous site without an appointment will not be allowed to participate in the observation day.
- BLM representatives will escort visitors to and from the gather and/or temporary holding facility.
- Visitors will be assigned to a BLM representative and must stay with that person at all times.
- Visitors are **NOT** permitted to walk around the gather site unaccompanied by a BLM representative.
- The BLM will clearly identify observation areas and visitors **must** stay within these designated areas.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- BLM may make the BLM/contractor staff available during down times for a Q&A session.
- When given the signal that the helicopter is close to the gather site bringing horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the horses are guided into the corral.

Observers will be polite, professional and respectful to BLM managers and staff and the contractor/employees.

Visitors who do not cooperate and follow the rules will be escorted off the gather site by BLM law enforcement personnel, and will be prohibited in participating in any subsequent observation days.

Non- Scheduled Observation day Protocol and Ground Rules

Non-scheduled observation days are days when the public is welcome to attend a gather on public land, or on specified private lands where permission was granted. The public is responsible for their own safety and health in their travels to and from the gather site.

- BLM staff may be limited on these days to answer questions.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- The public will be expected to remain in designated observation areas.
- Visitors are **NOT** permitted to walk around the gather site unaccompanied by a BLM representative.
- The BLM will clearly identify observation areas and visitors **must** stay within these designated areas.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, clothing and food.
- When given the signal that the helicopter is close to the gather site bringing horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the horses are guided into the corral.
- Gather operations may be suspended if bad weather conditions create unsafe flying conditions. Notification of suspension of gather operations will be made to the public that is present as soon as possible.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- BLM may make the BLM/contractor staff available during down times for a Q&A session.

Observers will be polite, professional and respectful to BLM managers and staff and the contractor/employees.

Visitors who do not cooperate and follow the rules will be escorted off the gather site by BLM law enforcement personnel, and will be prohibited in participating in any subsequent observation days.