

**DRAFT  
ENVIRONMENTAL ASSESSMENT**

**Flanigan, Dogskin Mountain, and  
Granite Peak Wild Horse Gather**

DOI-BLM-NV-C020-2011-0506-EA

U.S. Department of the Interior  
Bureau of Land Management  
Carson City District  
Sierra Front Field Office  
5665 Morgan Mill Road  
Carson City, Nevada 89701  
775-885-6000

**August 2011**



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

DOI-BLM-NV-C020-2011-0506-EA

# TABLE OF CONTENTS

|            |   |           |
|------------|---|-----------|
| <b>1.0</b> | <b>INTRODUCTION/PURPOSE AND NEED.....</b>   | <b>1</b>  |
| 1.1        | Introduction .....  | 1         |
| 1.2        | Purpose and Need.....   | 2         |
| 1.3        | Scoping and Issues Identification.....  | 2         |
| 1.4        | Decision to Be Made .....   | 3         |
| 1.5        | Land Use Plan Conformance Statement .....   | 3         |
| 1.6        | Relationships to Statutes, Regulations and Other Plans.....   | 3         |
| <b>2.0</b> | <b>PROPOSED ACTION AND ALTERNATIVES .....</b>   | <b>5</b>  |
| 2.1        | Alternative A: Proposed Action: Gather, Treat, Remove Excess Wild horses Including Use of PZP-22 and Adjust Sex Ratio to 60 Percent Male for the Flanigan HMA ..... | 5         |
| 2.2        | Alternative B: Gather and Remove Excess Wild horses Outside HMAs and Achieve Low AML on the Flanigan HMA .....  | 6         |
| 2.3        | Alternative C: No Action.....   | 6         |
| 2.4        | Alternatives Considered but Eliminated From Detailed Analysis .....   | 7         |
| <b>3.0</b> | <b>AFFECTED ENVIRONMENT .....</b>   | <b>12</b> |
| 3.1        | General Setting.....  | 12        |
| 3.2        | Supplemental Authorities .....  | 12        |
| 3.3        | Resources or Uses Other Than Supplemental Authorities.....  | 14        |
| 3.4        | Resources Considered for Analysis .....   | 15        |
| 3.4.1      | Wild horses.....  | 15        |
| 3.4.2      | BLM Sensitive Species .....   | 17        |
| 3.4.3      | Migratory Birds .....   | 18        |
| 3.4.4      | General Wildlife .....  | 18        |
| 3.4.5      | Vegetation.....   | 20        |
| 3.4.6      | Invasive Weeds, Non-Native Plant Species.....   | 20        |
| 3.4.7      | Human Health and Safety .....   | 20        |
| 3.4.8      | Livestock Grazing.....  | 21        |
| <b>4.0</b> | <b>ENVIRONMENTAL CONSEQUENCES.....</b>  | <b>23</b> |

|   |           |
|---|-----------|
| 4.1 Alternative A: Proposed Action: Gather, Treat, Remove Excess Wild horses Including Use of PZP-22 and Adjust Sex Ratio to 60 Percent Male for the Flanigan HMA ..... | 23        |
| 4.1.1 Wild horses.....  | 23        |
| 4.1.2 BLM Sensitive Species .....   | 27        |
| 4.1.3 Migratory Birds .....   | 28        |
| 4.1.4 General Wildlife .....  | 28        |
| 4.1.5 Vegetation.....   | 29        |
| 4.1.6 Invasive Weeds, Non-Native Plant Species.....   | 29        |
| 4.1.7 Human Health and Safety .....   | 29        |
| 4.1.8 Livestock Grazing.....  | 30        |
| 4.2 Alternative B: Gather and Remove Excess Wild horses Outside HMAs and Achieve Low AML on the Flanigan HMA .....  | 30        |
| 4.2.1 Wild horses.....  | 30        |
| 4.2.2 BLM Sensitive Species .....   | 30        |
| 4.2.3 Migratory Birds .....   | 31        |
| 4.2.4 General Wildlife .....  | 31        |
| 4.2.5 Vegetation.....   | 31        |
| 4.2.6 Invasive Weeds, Non-Native Plant Species.....   | 31        |
| 4.2.7 Human Health and Safety .....   | 31        |
| 4.2.8 Livestock Grazing.....  | 31        |
| 4.3 Alternative C: No Action.....   | 32        |
| 4.3.1 Wild horses.....  | 32        |
| 4.3.2 BLM Sensitive Species .....   | 32        |
| 4.3.3 Migratory Birds .....   | 33        |
| 4.3.4 General Wildlife .....  | 33        |
| 4.3.5 Vegetation.....   | 34        |
| 4.3.6 Invasive Weeds, Non-Native Plant Species.....   | 34        |
| 4.3.7 Human Health and Safety .....   | 34        |
| 4.3.8 Livestock Grazing.....  | 34        |
| 4.4 Residual Effects .....  | 34        |
| <b>5.0 CUMULATIVE EFFECTS .....</b>   | <b>35</b> |
| <b>6.0 MITIGATION MEASURES AND MONITORING.....</b>  | <b>40</b> |

|            |  |           |
|------------|--|-----------|
| <b>7.0</b> | <b>PERSONS, GROUPS, AND AGENCIES CONSULTED .....</b>           | <b>41</b> |
| 7.1        | List of Preparers .....  | 41        |
| 7.2        | Public Review .....  | 41        |
| 7.3        | Tribes, Individuals, Organizations or Agencies Consulted ..... | 42        |
| <b>8.0</b> | <b>REFERENCES.....</b>   | <b>44</b> |

**LIST OF APPENDICES**

|            |   |
|------------|---|
| Appendix A | Standard Operating Procedures for Wild Horse Gather                               |
| Appendix B | Public Observation Protocols  |
| Appendix C | Standard Operating Procedures for Use of PZP-22                                   |
| Appendix D | BLM IM 2010-164 Public Observation of Wild Horse Gathers                          |
| Appendix E | WinEquus Modeling Results   |
| Appendix F | List of BLM Sensitive Species and Migratory Birds That May Be Present in the HMAs |

**LIST OF FIGURES**

|          |  |
|----------|--|
| Figure 1 | Map of Herd Management Areas (HMAs) and Potential Trap Sites |
| Figure 2 | Map of Flanigan HMA  |
| Figure 3 | Map of Dogskin Mountain HMA                                  |
| Figure 4 | Map of Granite Peak HMA                                      |
| Figure 5 | Map of Grazing Allotments and Sage-Grouse PMU                |
| Figure 6 | Map of Cumulative Effects Analysis Area                      |

## 1.0 INTRODUCTION/PURPOSE AND NEED

### 1.1 Introduction

The Bureau of Land Management (BLM), Sierra Front Field Office (SFFO) proposes in this environmental assessment (EA) to conduct a gather and removal of excess wild horses, as well as implementation of population growth controls in the Flanigan, Dogskin Mountain, and Granite Peak Herd Management Areas (HMAs), located in Washoe County, Nevada (Figure 1). The proposed gather operation (referred to as the "Proposed Action") would occur during January or February 2012 and would be expected to take approximately seven to 10 days to be completed. The analysis contained in this EA would also be used for similar efforts on these HMAs between 2012 and 2017 should populations exceed the Appropriate Management Levels (AMLs), to booster fertility control treated mares, and/or there is deterioration in range health or a need to prevent deterioration to range health.

Based on population inventories conducted in 2010 and 2011, the current estimated populations of wild horses (including foals) in and adjacent to these HMAs are as follows: Flanigan 324 (2011 population inventory); Dogskin Mountain 22; and Granite Peak 38. Wild horse populations for all three HMAs currently exceed established AMLs. Conducting the proposed management action at this time is necessary due to the overpopulation of wild horses and prevent the deterioration of rangeland resources. Heavy and severe utilization of forage by wild horses has been documented within the Flanigan and Dogskin Mountain HMAs. In addition, excess wild horses occupy areas outside of these HMAs, on BLM and private lands not managed for wild horse occupancy.

These HMAs are located within the administrative jurisdiction of the SFFO, and are located west of Pyramid Lake, in Washoe County, Nevada. The Flanigan HMA consists of approximately 17,101 acres of BLM-managed lands and 920 acres of private land (Figure 2). Dogskin Mountain and Granite Peak HMAs consist entirely of BLM-managed lands, consisting of approximately 6,895 and 3,886 acres respectively (Figures 3-4).

This EA is a site-specific analysis of the potential impacts that could result from implementation of the Proposed Action or Alternatives. The EA would be used by SFFO to meet compliance under the National Environmental Policy Act (NEPA) and in making a determination as to whether any significant impacts could result from the Proposed Action or Alternatives, and whether an environmental impact statement (EIS) would be required.

In passing the *Wild Free-Roaming Wild horses and Burros Act of 1971* (WFRHBA) (Public Law 92-195), Congress found that "Wild-free roaming wild horses and burros are living symbols of the historic and pioneer spirit of the West." The WFRHBA further states that wild free-roaming wild horses are to be considered in the area where presently found, and as an integral part of the natural ecosystem. The Secretary of the Interior was directed to "manage wild free-roaming wild horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands." Management actions resulting from shifting program

emphasis include: increasing fertility control, adjusting sex ratio and collecting genetic baseline data to support genetic health assessments. In this EA, the terms “horse” and “wild horse” (*Equus caballus*) are used synonymously. Table 1 lists the population inventories of 1973, 2010 and 2011. Population inventories for 2010 and 2011 includes foals.

**Table 1. 1973 Population Inventory/Recent Removals**

| HMA                     | 1973<br>Population<br>Inventory | 2010/2011<br>Population Inventory | Recent Removals               | AML    |
|-------------------------|---------------------------------|-----------------------------------|-------------------------------|--------|
| <b>Flanigan</b>         | 96                              | 324*                              | 9 animals in 2001             | 80-124 |
| <b>Dogskin Mountain</b> | 6                               | 22                                | 36 animals in 2005            | 10-15  |
| <b>Granite Peak</b>     | 6                               | 38                                | 3 nuisance<br>animals in 2010 | 11-18  |

\*2011 population inventory data

The AML is defined as “the number of wild horses that can be sustained within a designated HMA which achieves and maintains a thriving natural ecological balance<sup>1</sup> in keeping with the multiple-use management concept for the area.” The AML for each of the HMAs was established by Multiple Use Decisions (MUDs) for Flanigan HMA in 1990, Dogskin Mountain HMA in 1994 and Granite Peak HMA in 1993, and reaffirmed in the CRMP (2001).

### 1.2 Purpose and Need

The purpose of the Proposed Action is to conduct a gather and removal of excess wild horses as well as implementation of population growth controls within and adjacent to three HMAs. The need of the Proposed Action is to: achieve the established AML’s as set by the approved MUD for each HMA; reduce the population growth rates; to achieve full compliance with the 2001 Carson City Field Office Consolidated Resource Management Plan (CRMP) (BLM 2001); to prevent degrading of public lands within and outside the HMAs; to maintain or restore a thriving natural ecological balance; and to re-establish a multiple-use doctrine consistent with the provisions of Section 1333(a) of the WFRHBA. In determining the need for the Proposed Action, the BLM has considered the best available science and on decades of managing of wild horses on public lands.

### 1.3 Scoping and Issues Identification

Consideration of this proposal was presented to SFFO’s interdisciplinary team on July 18, 2011. In addition, notification letters were sent to the Reno-Sparks Indian Colony, the Pyramid Lake Paiute Tribe and Washoe Tribe of Nevada and California seeking their input on August 12, 2011.

<sup>1</sup> The Interior Board of Land Appeals (IBLA) defined the goal for managing wild horse populations in a thriving natural balance as follows: “As the court stated in *Dahl v. Clark, supra* at 594, the ‘benchmark test’ for determining the suitable number of wild horses on the public range is ‘thriving ecological balance.’ In the words of the conference committee which adopted this standard: “The goal of wild horse and burro management...should be to maintain a thriving ecological balance between wild horse and burro populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.” (*Animal Protection Institute of America v. Nevada BLM*, 109 IBLA 115 [1989])

#### **1.4 Decision to Be Made**

The Authorized Official would decide whether to implement the Proposed Action, consisting of a gather and removal of excess wild horses as well as implementation of population growth controls in and adjacent to the Flanigan, Dogskin Mountain, and Granite Peak HMAs to reduce wild horse populations to within AML, reduce the population growth rates, and prevent the deterioration of the range that results from wild horse overpopulation.

The Authorized Official's decision would not: adjust the AML's for the HMAs or change the MUDs, as these were set through prior decision-making processes. The Authorized Official's decision would not increase, reduce or eliminate livestock grazing within allotments that overlap the HMAs. The CRMP has identified the lands within the project area as available for livestock grazing. Actions taken to eliminate livestock grazing would be inconsistent with the CRMP. Under 43 CFR 1610.5-3, all actions approved or authorized by the BLM must conform to the existing land use plan. A plan amendment is outside the scope of this EA, which is to gather, treat and remove excess wild horses from within and adjacent to three HMAs.

#### **1.5 Land Use Plan Conformance Statement**

The Proposed Action and Alternative B would be in conformance with the CRMP. The CRMP elements related to this proposal can be found on page WHB-1-5 including:

##### Policy

WHB-1, #2 "Remove excess wild horses and burros from public lands to preserve and maintain a thriving ecological balance and multiple-use relationship..."

##### Outcomes

WHB-2, #1 "AML's to be set though multiple use decisions."

The No Action Alternative would not be in conformance with the CRMP. Excess wild horse populations would continue to increase; AML's would not be maintained.

#### **1.6 Relationships to Statutes, Regulations and Other Plans**

The Proposed Action and Alternative B is in compliance with the following federal, State, and local plans to the maximum extent possible:

- American Indian Religious Freedom Act of 1979;
- Archaeological Resource Protection Act of 1979;
- Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.);
- Endangered Species Act – 1973;
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.);
- Fundamentals of Rangeland Health (43 CFR 4180);
- Migratory Bird Treaty Act (1918 as amended) and Executive Order 13186;
- National Environmental Policy Act of 1969 (as amended);
- National Historic Preservation Act of 1966, as amended;
- Public Rangelands Improvement Act of 1978;

- State Protocol Agreement between the BLM, Nevada and the Nevada Historic Preservation Office (2009);
- Special Status Species Manual and Direction for State Directors to Review and Revise Existing Bureau Sensitive Species Lists (BLM IM No. 2009-039);
- Taylor Grazing Act of 1934 (as amended);
- United States Department of the Interior Manual (910 DM 1.3)
- Wild Free-Roaming Wild horses and Burros Act of 1971 (as amended);
- Wild horses and Burros Management Handbook (H-4700-1).

The Proposed Action and Alternative B is consistent with all applicable regulations at 43 CFR 4700 and policies. The Proposed Action is also consistent with the WFRHBA, which mandates the Bureau to *“prevent the range from deterioration associated with overpopulation,”* and *“remove excess wild horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area.”* Additionally, Federal regulations at 43 CFR 4700.0-6 (a) state that, *“Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.”*

The Interior Board of Land Appeals (IBLA) in Animal Protection Institute et al, (118 IBLA 75, 1991) found that under the WFRHBA of 1971 (Public Law 92-195), “excess animals” must be removed from an area in order to preserve and maintain a thriving and natural ecological balance and multiple-use relationship in that area. Regulations at Title 43 CFR 4700.0-6(a) also direct that wild horses be managed in balance with other uses and the productive capacity of their habitat. The Proposed Action is in conformance with federal statute, regulations, and case law.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

### 2.1 Alternative A: Proposed Action: Gather, Treat, Remove Excess Wild horses Including Use of PZP-22 and Adjust Sex Ratio to 60 Percent Male for the Flanigan HMA

The Proposed Action is to gather, treat and remove excess wild horses within and outside the Flanigan, Dogskin Mountain, and Granite Peak HMAs (Figure 1). Wild horse populations for all HMAs currently exceed their established AMLs. The proposed project would occur during January or February 2012 and would take approximately seven to 10 days to be completed. Based on the excess population of wild horses, the Proposed Action would permanently remove approximately 87 wild horses from within and 157 wild horses outside the Flanigan HMA, 12 wild horses from outside the Dogskin Mountain HMA, and 27 wild horses from outside the Granite Peak HMA. All 2011 foals, which would be between six to nine months of age at the time of this gather, and would be removed as “weaned foals.” Any foals less than four months of age would be either removed or released with its mare depending on the final disposition of the mare. Removing this number of wild horses would return the estimated population to the lower limit of the AML for each HMA. Additional management actions could also occur between 2012 and 2017 to maintain horse populations within AMLs and continue population growth controls. Table 2 lists the estimated wild horse population which was determined during an aerial population inventories conducted in 2010 and 2011, and the AML range set for each HMA.

**Table 2. Wild Horse Population Inventory in 2010 and 2011 and AML’s.**

| HMA              | Population Inventory | AML Range |
|------------------|----------------------|-----------|
| Flanigan         | 324*                 | 80-124    |
| Dogskin Mountain | 22                   | 10-15     |
| Granite Peak     | 38                   | 11-18     |

\*2011 population inventory data

The Proposed Action is designed to achieve and maintain a thriving natural ecological balance and multiple-use relationship between the wild horse population, wildlife, livestock and plant communities within and outside the HMAs. Conducting the proposed management action at this time is necessary due to the overpopulation of wild horses and to prevent the deterioration of rangeland resources.

The Proposed Action includes the following elements:

The primary means to gather wild horses would be by helicopter, authorized by Section 1338 of the WFRHBA. The use of a helicopter is the most efficient and humane method for conducting a gather operation, especially for HMAs which have scattered water sources, the terrain varies, and may be inaccessible by vehicle. In isolated cases, bait/water trapping would be utilized to gather small numbers of excess wild horses that have moved outside of HMA boundaries and are causing problems on private and public lands. Direct mortality of wild horses associated with helicopter-driven gathers is less than one percent.

The Proposed Action would adjust the sex ratio within the Flanigan HMA to favor stallions through selective release of wild horses in order to decrease annual population growth rates. Due to the small population size of the Dogskin Mountain and Granite Peak HMAs, the BLM would likely not to adjust the sex ratio for these two HMAs.

Under the Proposed Action, the BLM would treat all mares to be returned to the Flanigan HMA with PZP-22. Based on a gather efficiency of 80 percent, the BLM anticipates that approximately 26 to 32 mares from the Flanigan HMA would be treated with PZP-22. The use of PZP-22 is a fertility control treatment endorsed by the Human Society of the United States (HSUS). The application (by injection) of PZP-22 has an effectiveness of approximately 22-months. Use of PZP-22 slows the growth rate of wild horse populations and can reduce the frequency of gathers. Research shows that the best time to apply PZP-22 is during the period of November to March (BLM 2010). All treated wild horses would be freeze marked on the left hip for later identification. After treatment, the mares would then be returned to the HMA. Standard operating procedures for the use of PZP-22 are included in Appendix C.

Multiple gather sites (traps) would be utilized, depending on the location of wild horses at the time of the gather. Trap sites may be within or outside of the HMAs on BLM-managed lands. To the extent practicable, trap sites would be located in previously disturbed areas and at previously used trap sites (See Figures 2-4). Data would be collected on the gathered wild horses including: sex, age, condition class (using the Henneke rating system), color and size. The BLM would also collect genetic data to ensure that acceptable genetic diversity is maintained within the remaining herd. A veterinarian would assess the condition of all captured wild horses; any wild horses with chronic or incurable disease, injury, lameness or serious physical defect would be humanely euthanized consistent with BLM IM 2009-041 (Euthanasia Policy) and methods endorsed by the American Veterinary Medical Association.

## **2.2 Alternative B: Gather and Remove Excess Wild horses Outside HMAs and Achieve Low AML on the Flanigan HMA**

Alternative B is similar to Alternative A (the Proposed Action), with the exception that the BLM would not treat any mares with PZP-22, and the sex ratio would not be adjusted to 60 percent male. All excess wild horses residing outside the HMAs would be gathered and removed. Once a sufficient number of wild horses have been removed from within the Flanigan HMA to the low AML, this portion of the gather operations would conclude. The use of PZP-22 and adjusting the sex ratio to 60 percent male is a means to curb population growth, reducing the likelihood of further horse gathers in these HMAs in the near-term. Not including these treatment methods would increase the frequency of future horse gathers. Removed wild horses would then be transported from holding corrals to short-term holding facilities to be prepared for adoption or transportation to long-term pastures in the Midwest.

## **2.3 Alternative C: No Action**

Under the No Action Alternative, the SFFO would not conduct any wild horse management actions in and adjacent to the Flanigan, Dogskin Mountain, and Granite Peak HMAs to prevent the deterioration of the range that results from horse overpopulation and expansion of wild

horse populations within areas not identified for wild horse management within the CRMP. The No Action Alternative would not be in conformance with the CRMP as AML would not be maintained. The No Action Alternative would not be consistent with the regulations that require the Authorized Official to remove wild horses upon determination that excess wild horses are present. Under the No Action Alternative, the SFFO would continue to monitor range health and wild horse populations.

The No Action Alternative would be not in conformance with existing laws and regulations which require the BLM to remove animals immediately upon determination that excess wild horses are present (per 43 CFR 4720.1). The No Action Alternative would not be in conformance with the CRMP which set AML's for each of the HMAs. Under the No Action Alternative, the overpopulation of wild horses would likely degrade rangelands within and outside the HMAs.

#### **2.4 Alternatives Considered but Eliminated From Detailed Analysis**

A. *Water or Bait Trapping.* With the exception of Cottonwood Creek in the Flanigan HMA, water within the HMAs is limited to seasonal streams and springs or water troughs for livestock. Restricting wild horse access to water sources is not practical due to the large area that the wild horses range, limited road access to potential trap sites, and scattered water sources make it impracticable to restrict wild horse access to water sources. As stated in the Proposed Action, bait/water trapping may occur on a limited basis to control animals that leave the HMAs and cause impacts to private property, however it is not an effective mechanism to achieve the Proposed Action.

B. *Reducing or Eliminating Livestock Grazing.* The CRMP has identified the lands within the project area as available for livestock grazing. Actions taken to eliminate livestock grazing would be inconsistent with the CRMP. Under 43 CFR 1610.5-3, all actions approved or authorized by the BLM must conform to the existing land use plan. A plan amendment is outside the scope of this EA, which is to gather, treat and remove wild horses from within and adjacent to three HMAs. The allocation of forage for wildlife, livestock and wild horses was determined previously through public decision-making processes (See Section 3.4.1). Reallocation of forage available for livestock to wild horses would not maintain a thriving natural ecological balance. Wild horses use rangelands differently than livestock, which through term livestock grazing permits, can be confined to specific pastures, limited periods of use, and specific seasons of use, so as to minimize impacts to vegetation during the critical plant growing season. Wild horses are present on the range year-round, and their impacts cannot be controlled through the establishment of a grazing system. Their impacts can only be addressed by establishing optimum levels (AMLs) that do not adversely impact range resources and conflict with other multiple uses of the land.

C. *Designation of the HMAs to be Managed Principally for Wild horses.* This action under 43 CFR 4710.3-2 would require the amendment of the CRMP, which is outside the scope of this EA. Only the BLM Director or Assistant Director (per BLM Manual 1203: Delegation of Authority), may establish a Wild Horse and Burro Range, after a full assessment of the impact on other

resources through a land-use planning process. As this is not an “exclusive” designation, it potentially would not change the level of livestock grazing permitted to occur in the area.

D. *Remove all Wild horses Outside the HMAs.* This alternative is substantially similar to the Proposed Action. Under the Proposed Action all wild horses residing outside the HMAs would be removed; those remaining would be within the AML. A large number of wild horses reside outside the HMAs based on 2010 and 2011 population inventory in areas not managed for wild horses. Although this alternative would have addressed this concern, the Flanigan wild horse population exceeds AML among those wild horses residing within the HMA. This alternative would not achieve the need to maintain AML within all HMAs and to maintain a thriving natural ecological balance.

E. *Gathering Wild horses to the Upper Range of the AML for Each HMA.* A post-gather population size at the upper limit of the AML would likely result in the AML being exceeded during the next foaling season. The upper limit of the AML represents the maximum population at which a thriving natural ecological balance can be maintained. Reducing numbers to the lower limit would allow for a periodic gather cycle of approximately every four years and prevent the exceedance of the AML during the intervening period.

F. *Raising the AML for Wild horses.* This action would require an amendment of the CRMP, which is outside the scope of this EA. As described in Section 3.4.1, allocation of forage for wildlife, livestock and wild horses was determined previously through public decision-making processes. Furthermore, raising the AML for wild horses would not address heavy and severe utilization of forage resources documented within the Flanigan and Dogskin Mountain HMAs.

G. *Zeroing Out the HMAs.* This action would require an amendment of the CRMP, which is outside the scope of this EA.

H. *Natural Population Controls.* Wild horse populations increase or decrease due to a number of natural factors including: the nutritional value of forage consumed, weather, disease, and predation. Although predation of young foals can occur, generally their survival rate is very high. These factors do not exert enough influence on horse populations to maintain their numbers within AML.

#### I. *Field Darting PZP-22 Treatment*

In public comments, it has been suggested to administer PZP-22 in the one year liquid dose inoculations by field darting the mares. This method is currently approved for use and is being utilized by the BLM in other HMAs. This alternative was dismissed from this detailed study for the following reasons: (1) the size of the area is too large to use this method; (2) the number of wild horses in the HMAs makes it unrealistic to be able to clearly identify all mares targeted for treatment; (3) the area is too remote and access too limited roads to implement this method successfully either by foot or vehicle; and (4) limited approachability to the target wild horses. The logistics of implementing this method in tandem with bait and/or water trapping is also impractical for the reasons listed above.

*J. Control the Excess Wild Horse Populations with Use of PZP-22 Only*

This alternative would gather a significant portion of the existing population (95 percent) and implement fertility control treatments only, without removal of excess wild horses. This alternative would not result in attainment of the AML range for the HMAs and the wild horse population would continue to grow adding to the current wild horse overpopulation, albeit at a slower rate of growth. This alternative would not bring the horse population to AML and would allow the wild horse population to continue to grow, resource concerns would escalate, and implementation would result in significantly increased gather and fertility control costs without achieving a thriving natural ecological balance. This alternative would not meet the purpose and need for the Proposed Action and did not receive any further consideration.

*K. Make on-the-Ground and Individualized Excess Wild Horse Determinations Prior to Removal*

This alternative to make on-the-ground and individualized excess wild horse determinations prior to removal was recommended through the public review process under the view set forth by some commenters that a tiered or phased removal of wild horses/burros from the range is mandated by the WFRHBA. Specifically, this alternative would involve a tiered gather approach, whereby the BLM would first identify and remove old, sick or lame animals in order to euthanize those animals on the range prior to gather. Second, the BLM would identify and remove wild horses for which adoption demand exists by qualified individuals, such as younger wild horses or wild horses with unusual and interesting markings.

This alternative could be viable in situations where the project area is contained, the area is readily accessible and wild horses are clearly visible, and where the number of wild horses to be removed is so small that a targeted approach to removal can be implemented. Under the conditions present within the project area, however, this alternative is impractical, if not impossible, as well as less humane for a variety of reasons.

The BLM does euthanize old, sick or lame animals on the range when such animals have been identified. This occurs on an on-going basis and is not limited to wild horse gathers. During a gather, if old, sick or lame animals are found and it is clear that an animal's condition requires the animal to be put down, that animal is separated from the rest of the group that is being herded so that it can be euthanized on the range. However, wild horses that meet the criteria for humane destruction because they are old, sick or lame usually cannot be identified as such until they have been gathered and examined up close, so as to determine whether the wild horses have lost all their teeth or are club footed. Old, sick and lame wild horses meeting the criteria for humane euthanasia are also only a tiny fraction of the total number of wild horses to be gathered, comprising on average about 0.5 percent of gathered wild horses. Thus, in a gather of over 1,000 wild horses, potentially about five of the gathered wild horses might meet the criteria for humane destruction over an area of over one million acres. Due to the size of the HMAs, access limitations associated with topographic and terrain features and the challenges of approaching wild horses close enough to make an individualized determination of

whether a horse is old, sick or lame, it would be virtually impossible to conduct a phased culling of such wild horses on the range without actually gathering and examining the wild horses.

Similarly, rounding up and removing wild horses for which an adoption demand exists, before gathering any other excess wild horses would be both impractical and much more disruptive and traumatic for the animals. Recent gathers have had success in adopting out approximately 30 percent of excess wild horses removed from the range on an annual basis. The size of the HMAs, terrain challenges, difficulties of approaching the wild horses close enough to determine age and whether they have characteristics (such as color or markings) that make them more adoptable, the impracticalities inherent in attempting to separate the small number of adoptable wild horses from the rest of the herd, and the impacts to the wild horses from the closer contact necessary, makes such phased removal a much less desirable method for gathering excess wild horses. This approach would create a significantly higher level of disruption for the wild horses on the range and would also make it much more difficult to gather the remaining excess wild horses. Furthermore, if the BLM plans to apply any population controls to gathered wild horses prior to release, it would be necessary to gather more than just the excess wild horses to be removed, making a phased approach to removal completely unnecessary and counter-productive.

Making a determination of “excess” as to a specific wild horse under this alternative, and then successfully gathering that individual horse would be impractical to implement (if not impossible) due to the size of the HMAs, terrain challenges and difficulties approaching the wild horses close enough to make an individualized determination, would be extremely disruptive to the wild horses due to repeated culling and gather activities over a short period of time, Making a determination of excess in this way would greatly increase the potential stress placed on the animals due to repeated attempts to capture specific animals and not others in the band. This in turn would increase the potential for and not others in the band which could lead to increased injury, separation of mare/foal pairs, and possible mortality. This alternative would be impractical to implement (if not impossible), would be cost-prohibitive, and would be unlikely to result in the successful removal of excess wild horses or application of population controls to released wild horses. This approach would also be less humane and more disruptive and traumatic for the wild horses. This alternative was therefore eliminated from any further consideration.

#### *L. Letting Nature Take its Course*

While some members of the public have advocated “letting nature take its course,” allowing wild horses to die of dehydration and starvation would be inhumane treatment and would be contrary to the WFRHBA, which mandates removal of excess wild horses. The damage to rangeland resources that results from excess numbers of wild horses is also contrary to the WFRHBA, which mandates the Bureau to “protect the range from the deterioration associated with overpopulation,” “remove excess animals from the range so as to achieve appropriate management levels,” and “to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area.” Once the vegetative and water resources are at these critically low levels due to excessive utilization by an over population of wild horses, the weaker

animals, generally the older animals and the mares and foals, are the first to be impacted. It is likely that a majority of these animals would die from starvation and dehydration. The resultant population would be heavily skewed towards the stronger stallions which would lead to significant social disruption in the HMA. By managing the public lands in this way, the vegetative and water resources would be impacted first and to the point that they have no potential for recovery. This degree of resource impact would lead to management of wild horses at a greatly reduced level if the BLM is able to manage for wild horses at all on the HMA in the future. For these reasons, this alternative was eliminated from further consideration.

### 3.0 AFFECTED ENVIRONMENT

This chapter identifies and describes the current condition and trend of elements or resources in the human environment which may be affected by the Proposed Action and Alternatives. The Affected Environment is the same for all alternatives.

#### 3.1 General Setting

The Flanigan HMA is located approximately 35 miles northeast of Reno, Nevada in the Virginia Mountains (Figures 1, 2). The HMA consists of approximately 17,101 acres of BLM-managed lands and 920 acres of private land. The topography ranges from rolling hills at 4,265 feet above sea level, to mountainous terrain of 8,000 feet. Dominant vegetation consists of big sagebrush (*Artemisia tridentata* Nutt. ssp. *wyomingensis*), snowberry (*Symphoricarpos albus*), green rabbitbrush (*Chrysothamnus viscidiflorus*), cheatgrass (*Bromus tectorum*), and bottlebrush squirreltail (*Elymus elymoides*). Quaking aspen (*Populus tremuloides*) are found in Cottonwood Creek. Historically, big sagebrush and desert needlegrass (*Achnatherum speciosum*) have been the key species. Annual average precipitation for this area is eight to 12 inches (BLM 1990). The Flanigan HMA includes 15 springs, Cottonwood Creek (perennial), East Cottonwood Creek (seasonal), and water troughs for livestock.

The Dogskin Mountain HMA is located approximately 25 miles northeast of Reno, Nevada in the Dogskin Mountain Range (Figures 1, 3). The HMA consists of approximately 6,895 acres of BLM-managed lands. The topography ranges from rolling hills at 5,500 feet above sea level, to mountainous terrain of 7,500 feet. Dominant vegetation consists of big sagebrush, snowberry, rabbitbrush, cheatgrass, and bottlebrush squirreltail. Pinyon-juniper woodlands (*Pinus monophylla*, *Juniperus osteosperma*) are abundant at high elevations. Historically, big sagebrush, bitterbrush, desert needlegrass, Indian ricegrass (*Achnatherum hymenoides*) and needle and thread (*Hesperostipa comate*) have been the key species. Annual average precipitation for this area is eight to 12 inches (BLM 2005). The Dogskin Mountain HMA includes four springs and water troughs for livestock; there are no other surface streams.

The Granite Peak HMA is located approximately 20 northeast of Reno, Nevada in the Sand Hills (Figures 1, 4). The HMA consists of approximately 3,886 acres of BLM-managed lands. Dominant vegetation consists of big sagebrush, snowberry, rabbitbrush, cheatgrass, and bottlebrush squirreltail. Historically, big sagebrush, bitterbrush and desert needlegrass have been the key species. Annual average precipitation for this area is eight to 12 inches (BLM 1993). There are no year around water sources or riparian areas in the Granite Peak HMA. When livestock grazing occurs, the permittee utilizes several water troughs for the cattle. These water sources can also be utilized by wild horses.

#### 3.2 Supplemental Authorities

Appendix 1 of BLM's NEPA Handbook (H-1790-1) identifies Supplemental Authorities that are subject to requirements specified by statute or executive order and must be considered in all BLM environmental documents (BLM 2008). Table 3 lists the Supplemental Authorities and their

status in the project area. Supplemental Authorities that “may be affected” by the Proposed Action or Alternatives are further described in this EA.

**Table 3. Supplemental Authorities.**

| <b>Resource</b>                                    | <b>Not Present *</b> | <b>Present Not Affected *</b> | <b>Present May Be Affected**</b> | <b>Rationale</b>   |
|--|----------------------|-------------------------------|----------------------------------|--|
| <b>Air Quality</b>                                 |                      | X                             |                                  | During implementation of the Proposed Action, there would be a slight increase in vehicle emissions and particulates from gather activities and equipment. Overall air quality, however, would not be affected.  |
| <b>Areas of Critical Environmental Concern</b>     | X                    |                               |                                  | Resource not present.  |
| <b>Cultural Resources</b>                          |                      | X                             |                                  | A cultural resources review was conducted for sites preliminarily determined to be used for holding and trap sites. In the event that these sites are relocated during implementation of the Proposed Action, a monitor would be present to ensure that historic resources are not present.  |
| <b>Environmental Justice</b>                       | X                    |                               |                                  | Resource not present.  |
| <b>Farm Lands (prime or unique)</b>                | X                    |                               |                                  | Resource not present.  |
| <b>Floodplains</b>                                 | X                    |                               |                                  | Resource not present.  |
| <b>Invasive Weeds, Non-Native Plant Species</b>    |                      |                               | X                                | Carried forward for analysis.  |
| <b>Migratory Birds</b>                             |                      |                               | X                                | Carried forward for analysis.  |
| <b>Native American Religious Concerns</b>          |                      | X                             |                                  | Notification of the project was sent to the Reno-Sparks Indian Colony, Washoe Tribe of California and Nevada, and the Pyramid Lake Paiute Tribe on August 12, 2011. A copy of this EA would be available to the Tribes during the public review period.  |
| <b>Threatened or Endangered Species (wildlife)</b> | X                    |                               |                                  | Resource not present. The U.S. Fish and Wildlife Service website for Nevada’s Protected Species was reviewed and it was determined that no federally-listed animals are present in the HMAs ( <a href="http://www.fws.gov/nevada/protected_species/species_by_county.html">http://www.fws.gov/nevada/protected_species/species_by_county.html</a> ). No gather sites would occur in the Carson wandering skipper ACEC or on BLM land in T26N, R19E, Sections 5, 6, 7, 8, 16, 17, and 18. |
| <b>Threatened or Endangered Species (Plants)</b>   | X                    |                               |                                  | No threatened or endangered plant species occur within the HMAs.   |
| <b>Wastes, Hazardous or Solid</b>                  |                      | X                             |                                  | During implementation of the Proposed Action, there is a slight risk of spillage of oil or gasoline from vehicles or equipment. Should such a spillage occur, clean up actions would be taken; this resource is not affected by the Proposed Action.   |

|                                       |   |   |  |  |
|---------------------------------------|---|---|--|--|
| <b>Water Quality (Surface/Ground)</b> |   | X |  | Resource not affected by a horse gather.   |
| <b>Wetlands/Riparian Zones</b>        |   | X |  | Cottonwood Creek, a perennial stream, is found within the Flanigan HMA, and other springs and seasonal streams are scattered throughout the project area; there would be no overall affect to riparian zones. No trap sites would be located adjacent to springs or riparian areas. Vegetation associated with springs and riparian zones may benefit from the reduced number of wild horses in the near-term. |
| <b>Wild and Scenic Rivers</b>         | X |   |  | Resource not present.  |
| <b>Wilderness/WSA</b>                 | X |   |  | Resource not present.  |

See H-1790-1 (January 2008) Appendix 1 Supplemental Authorities to be Considered.

\*Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.

\*\*Supplemental authorities determined to be Present/May Be Affected must be carried forward in the document.

### 3.3 Resources or Uses Other Than Supplemental Authorities

BLM specialists have evaluated the other potential impacts of the Proposed Action and Alternatives on these resources and documented their findings Table 4. Resources or uses that “may be affected” are further described in this EA (BLM 2008).

**Table 4. Resources or Uses Other Than Supplemental Authorities.**

| <b>Resource or Uses</b>        | <b>Present Not Affected#</b> | <b>Present May Be Affected##</b> | <b>Rationale</b>  |
|--------------------------------|------------------------------|----------------------------------|---|
| <b>BLM Sensitive Species</b>   |                              | X                                | Carried forward for analysis.   |
| <b>Forestry</b>                | X                            |                                  | Resource would not be affected by a horse gather.   |
| <b>General Wildlife</b>        |                              | X                                | Carried forward for analysis.   |
| <b>Human Health and Safety</b> |                              | X                                | Carried forward for analysis.   |
| <b>Land Use/Authorizations</b> | X                            |                                  | The Proposed Action would have no effect on land use or authorizations.   |
| <b>Livestock Grazing</b>       |                              | X                                | Carried forward for analysis.   |
| <b>Paleontological</b>         | X                            |                                  | Under the Proposed Action, vehicles would remain on existing roadways, and the gather of wild horses is not expected to expose or affect any paleontological resources if present.  |
| <b>Recreation</b>              | X                            |                                  | Although dispersed recreation may occur in the project area, the Proposed Action would be limited to several days during the winter (non-recreation season). No closure of roads or trails would occur.   |
| <b>Soils</b>                   | X                            |                                  | Although during the gather there would be minor surface disturbance to soils in the project area, overall soils would not be affected by the Proposed Action. Reducing the number of wild horses may slightly benefit soils in areas impacted by intensive horse use caused by trampling, thereby reducing the risk for soil erosion. |
| <b>Vegetation</b>              |                              | X                                | Carried forward for analysis.   |

|                         |   |   |   |
|-------------------------|---|---|---|
| <b>Visual Resources</b> | X |   | The Proposed Action would not affect the overall visual quality of the project area (Class III/IV). |
| <b>Wild horses</b>      |   | X | Carried forward for analysis.   |

#Resources or uses determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document.

##Resources or uses determined to be Present/May Be Affected must be carried forward in the document.

### 3.4 Resources Considered for Analysis

The following resources are or may be present in the project area and “may be affected” by the Proposed Action or Alternatives.

#### 3.4.1 Wild horses

The BLM estimates that approximately 38,500 wild horses (*Equus caballus*) and burros (*Equus asinus asinus*) reside on BLM-managed lands in the 10 Western states, based on the latest data available in February 2011. The AML is approximately 26,000 animals and the BLM manages 180 HMAs covering more than 31.9 million acres (14.7 million acres in Nevada). No burros occur on BLM-managed lands administered by SFFO. Wild horses residing in the Flanigan, Dogskin Mountain and Granite Peak HMAs today are thought to be descendants of wild horses released by ranchers that turned out their animals in the area prior to 1971 (BLM 1990, 1993, 2005). These HMAs have not been designated as “ranges” under 43 CFR 4710.3-2.<sup>2</sup>

#### *Background of HMAs and AMLs*

At the time of the passage of the WFRHBA, herd areas (HA’s) were established for BLM-managed lands with known populations of wild horses. HMAs were established later for those HA’s through a land use planning process that set the initial and estimated herd size that could be managed while still preserving and maintaining a thriving natural ecological balance and multiple-use relationships for the area. To be designated as a HMA, the area must have four essential habitat components including: forage, water, cover and space (BLM 2010). The CRMP (2001) reaffirmed areas designated for the long-term management of wild horse populations.

The allocation of forage for wildlife, wild horses, and livestock was established through MUDs, which set the Animal Unit Months (AUMs) for each category. An AUM is the amount of forage necessary to maintain one adult horse for one month (about 800 pounds of air dried forage) (BLM 2010).

During the summer of 2011, the BLM conducted field investigations within each of the HMAs to determine the level of forage utilization associated with wild horses. Monitoring data collected utilized the Range Utilization Key Forage Plant Method. Species that utilization was collected on were Thurber’s needlegrass (*Achnatherum thurberianum*) and desert needlegrass. Heavy

<sup>2</sup> There are currently four designated Wild Horse and Burro Ranges in the Western United States that are managed principally for wild horses and burros consistent with 43 CFR 4170.3-2. These include the Pryor Mountain Wild Horse Range in Montana; the Little Book Cliffs Wild Horse Range in Colorado; the Nevada Wild Horse Range and the Marietta Wild Burro Range in Nevada. Only the BLM Director or Assistant Director (as per BLM Manual 1203: Delegation of Authority), may establish a Wild Horse and Burro Range after a full assessment of the impact on other resources through the land-use planning process.

(61-80 percent) and severe (81-100 percent) utilization of forage by wild horses has been documented within the Flanigan and Dogskin Mountain HMAs.

The AML<sup>3</sup> is the range within which a wild horse population can be maintained for the long-term based on habitat suitability and monitoring data (adaptive management). Monitoring plans for the HMAs were completed in 1995. The AML sets a maximum number of wild horses which results in a thriving natural ecological balance and avoids deterioration of the range (BLM 2010). Table 5 lists the HMAs and AML's allocated to wild horses in each.

**Table 5. HMAs and AML's.**

| HMA                     | Acres<br>(BLM-managed) | AML Range | AUMs  | MUD Decision Year |
|-------------------------|------------------------|-----------|-------|-------------------|
| <b>Flanigan</b>         | 17,101                 | 80-124    | 1,488 | 1990              |
| <b>Dogskin Mountain</b> | 6,895                  | 10-15     | 180   | 1994              |
| <b>Granite Peak</b>     | 3,886                  | 11-18     | 204   | 1993              |

*Wild Horse Population Inventory and Gather History*

Since the enactment of the WFRHBA and subsequent establishment of AML's, the BLM has periodically conducted gathers to maintain wild horse populations within AML. For these HMAs, population growth rates based on available population inventory information is estimated to range from 10 to 15 percent per year, although growth rates up to 25 percent per year are known to occur among some wild horse populations (USGS 2011). Tables 6-8 lists the 2010 and 2011 population inventory information, and estimated wild horse population within and adjacent to the HMA.

**Table 6. Flanigan HMA Population Inventory.**

| Population Inventory | Count | Location                     |
|----------------------|-------|------------------------------|
| <b>April 2010</b>    | 183   | Inside HMA                   |
|                      | 29    | Outside HMA/Winnemucca Ranch |
|                      | 20    | Outside HMA/Big Canyon       |
| <b>July 2011</b>     | 167   | Inside HMA                   |
|                      | 122   | Outside HMA                  |
|                      | 25    | Outside HMA/Big Canyon       |
|                      | 10    | Outside HMA/Winnemucca Ranch |

GA=Grazing Allotment

**Table 7. Dogskin Mountain HMA Population Inventory.**

| Population Inventory | Count | Location    |
|----------------------|-------|-------------|
| <b>April 2010</b>    | 14    | Inside HMA  |
|                      | 15    | Outside HMA |
| <b>July 2011**</b>   | 7     | Inside HMA  |

\*\* Areas outside HMA not surveyed in 2011.

<sup>3</sup> In *Animal Protection Institute of America v. Nevada BLM*, 109 IBLA 119 (1989) the Board stated that the AML represents the optimum number of wild horses which results in a TNEB.

**Table 8. Granite Peak HMA Population Inventory.**

| Population Inventory | Count | Location                    |
|----------------------|-------|-----------------------------|
| <b>April 2010</b>    | 11    | Inside HMA                  |
|                      | 20    | Outside HMA/Fred's Mountain |
| <b>July 2011 ***</b> | 27    | Outside HMA/Fred's Mountain |

\*\*\* HMA not surveyed in 2011.

### *WinEquus Population Modeling*

Population modeling was completed to analyze the potential outcomes of how the Proposed Action would affect the wild horse populations in the project area. Table 9 compares the Proposed Action with Alternative B and the No Action Alternative. See Appendix E for complete modeling results.

**Table 9. WinEquus Population Results by HMA.**

| HMA                      | Alternative*                       | Average Growth Rate Over 10-years | Population ** | Number Treated** | Number Gathered** | Number Removed** |
|--------------------------|------------------------------------|-----------------------------------|---------------|------------------|-------------------|------------------|
| <b>Flanigan</b>          | (A) Proposed Action                | 6.8%                              | 124           | 77               | 440               | 198              |
|                          | (B) No PZP or Sex Ratio Adjustment | 14.6%                             | 126           | N/A              | 310               | 264              |
|                          | (C) No Action                      | 17%                               | 729           | N/A              | 0                 | 0                |
| <b>Dogskin Mountains</b> | (A) Proposed Action                | 11.6%                             | 19            | N/A              | 56                | 32               |
|                          | (C) No Action                      | 15.9%                             | 54            | N/A              | 0                 | 0                |
| <b>Granite Peak***</b>   | (A) Proposed Action                | 16.7%                             | 15            | N/A              | 32                | 22               |
|                          | (C) No Action                      | 18.4%                             | 32            | N/A              | 0                 | 0                |

\*Due to low population size, the BLM does not anticipate using PZP-22 or altering the sex ratio for the Dogskin Mountain and Granite Peak HMAs. Therefore in the population modeling only Alternative A was evaluated for Dogskin Mountain and Granite Peak HMAs.

\*\*average for an 11-year period.

\*\*\*For purposes of the WinEquus population modeling, all wild horses identified in Fred's Mountain were not included in the Granite Peak results above.

Source: WinEquus version 3.2.

### **3.4.2 BLM Sensitive Species**

BLM sensitive species are federally designated candidate species, proposed species, and delisted species in the five years following their delisting. Sensitive species may require special management considerations to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act. A comprehensive list of BLM sensitive species and migratory birds that may be present in the HMAs is found in Appendix F. Habitat types in the HMAs consist primarily of sagebrush and pinyon-juniper woodland, with some salt desert scrub and small areas of riparian vegetation.

All three HMAs are in the greater sage-grouse (*Centrocercus urophasianus*) Virginia Mountains population management unit (PMU) (NDOW 2011) (Figure 5). The population estimate for the PMU is between 490 and 570 sage-grouse (Hampson 2011, pers. comm.). Portions of the Flanigan HMA are in sage-grouse nesting and summer habitat, and all three HMAs are in winter habitat (NDOW 2011). There are no known active leks in any of the HMAs. Sage-grouse depend on mature shrubs for nesting structure, protection from predators, and thermal cover. They nest on the ground under sagebrush plants with a relatively high canopy cover and a healthy herbaceous understory of grasses, which are important for shade and nest concealment (Welch 2005, Wildlife Action Plan Team 2006). Adequate herbaceous cover may be as important as shrub density in determining nesting success because chick survival is directly linked to cover of short grasses and availability of food (GBBO 2010). Summer/late brood-rearing habitat usually has less dense sagebrush canopy than nesting habitat and a higher proportion of grasses and forbs in the understory. Diverse plant communities with abundant insects are particularly important. Broods move with range desiccation down to wet areas, where they feed on highly preferred forbs such as aster, dandelion, and yarrow. Areas providing persistence of green forbs and abundant insects through late summer are critical to brood survival and may be a limiting factor in much of Nevada (Wildlife Action Plan Team 2006, GBBO 2010). In Nevada, hens with broods avoided water sources surrounded by bare ground (Klebenow 1981). Winter habitat is dense sagebrush that reaches 10-12 inches above snow (GBBO 2010).

Potential habitat for Webber's ivesia (*Ivesia webberi*) may occur within the Antelope Mountain Grazing Allotment (GA) which encompasses the Granite Peak HMA (BLM 2007a).

### **3.4.3 Migratory Birds**

Migratory birds are those species that breed in temperate portions of North America and may winter in either North or South America. Migratory birds are protected under the Migratory Bird Treaty Act of 1918 and are addressed in Executive Order 13186. The Intermountain West avifaunal biome is the center of distribution for many western birds (Rich et al. 2004). Over half of this biome's Species of Continental Importance have 75 percent or more of their population here. Many breeding species from this biome migrate to winter in central and western Mexico or in the Southwestern biome. Shrub-nesting species comprise the largest number of Species of Continental Importance in this biome.

Habitat types in the HMAs consist primarily of sagebrush and pinyon-juniper woodland, with some salt desert scrub and small areas of riparian vegetation. Migratory birds that may be present or their habitat may be present in the HMAs are listed in Appendix F. Actual presence of migratory birds during the proposed gathers is unlikely because the gather operations would take place mid-winter, outside the migratory bird season, and mid-winter is not a critical period for migratory birds' life cycles including their nesting season (April 15 through July 15).

### **3.4.4 General Wildlife**

Based on the Southwest Regional GAP Analysis Project, the Nevada Department of Wildlife's (NDOW) Wildlife Action Plan (WAP) characterizes Nevada's vegetative land cover into eight

broad ecological system groups and links them with key habitat types and their associated wildlife species (Wildlife Action Plan Team 2006). Key habitats can be used to infer likely occurrences of wildlife species assemblages when survey data is unavailable. The key habitats in the HMAs are described below.

*Intermountain Cold Desert Scrub* – This habitat type occurs at the lowest elevations and annual precipitation is generally less than 10 inches per year. Plant species include shadscale, greasewood, Indian ricegrass, Thurber's needlegrass, and bottlebrush squirreltail. General wildlife species associated with this habitat type include kit fox (*Vulpes macrotis*), Great Basin collared lizard (*Crotaphytus bicinctores*), desert horned lizard (*Phrynosoma platyrhinos*), long-nosed leopard lizard (*Gambelia wislizenii*), and black-throated sparrow (*Amphispiza bilineata*). Many wildlife species use both cold desert scrub and sagebrush habitats for various life requirements such as foraging and nesting. For example, the kit fox uses sandy soils in cold desert scrub habitat for denning and forages for prey in sagebrush plant communities.

*Sagebrush* – Plant species include Wyoming big sagebrush, green rabbitbrush, snowberry, bluebunch wheatgrass, needle and thread, Indian ricegrass, and cheatgrass. Shrub communities generally support the largest populations and most diverse number of species of any of the Great Basin habitats (Welch 2005). Tall, dense sagebrush is required by some wildlife species, but other species use more open areas (GBBO 2010). Understory requirements also vary by species, but the presence of an understory layer is generally beneficial. Sagebrush range in good condition supports a substantial bunchgrass and forb component and where sagebrush habitat has been depleted of its understory, it lacks the ability to provide nesting cover, escape cover, and sources of food for wildlife (Wildlife Action Plan Team 2006). General wildlife species such as Great Basin pocket mouse (*Perognathus parvus*), sagebrush lizard (*Sceloporus graciosus*), black-tailed jackrabbit (*Lepus californicus*), pronghorn (*Antilocapra americana*), Merriam's shrew (*Sorex merriami*), panamint kangaroo rat (*Dipodomys panamintinus*), and sagebrush vole (*Lemmiscus curtatus*) are associated with this habitat type. The Great Basin pocket mouse, sagebrush vole, pronghorn, and sagebrush lizard, are sagebrush obligates and depend on sagebrush habitat to complete their life cycles.

*Lower Montane Woodlands* – Singleleaf pinyon and Utah juniper are the dominant tree species in the HMAs. Pinyon-juniper woodland provides a variety of sheltering functions for wildlife that range from hiding cover and thermal protection to cavities and nest sites for birds, bats, and small mammals. Pinyon-juniper woodlands provide habitat for general wildlife species such as Steller's jay (*Cyanocitta stelleri*), mule deer (*Odocoileus hemionus*), and black bear (*Ursus americanus*).

Aspen occur in Cottonwood Creek, a perennial stream in the Flanigan HMA. Small amounts of riparian vegetation are associated with other scattered springs and seasonal streams in the HMAs. Aspen stands provide forage and nesting substrate, and are particularly important to cavity nesting species like woodpeckers. General wildlife species associated with aspen are mule deer, vagrant shrew (*Sorex vagrans*), Cooper's hawk (*Accipiter cooperii*), and mountain bluebird (*Sialia currucoides*).

The HMAs provide habitat for mule deer, pronghorn, bighorn sheep (*Ovis canadensis*), and black bear. All of the HMAs are in current black bear range (NDOW 2011).

### **3.4.5 Vegetation**

A mosaic of plant communities are present in the HMAs. Plant communities within the HMAs include, but are not limited to: small areas of riparian vegetation associated with springs, meadows and drainages such as aspen, sedge and rush species; big sagebrush, and mountain big sagebrush (*Artemisia tridentata* Nutt. ssp. *vaseyana*). Major grass species include: bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass, desert needlegrass, needle and thread, Indian ricegrass and bottlebrush squirreltail. The major tree species found in the HMAs are Utah juniper and singleleaf pinyon pine.

### **3.4.6 Invasive Weeds, Non-Native Plant Species**

Invasive weeds and non-native plant species that occur in the project area include, but are not limited to: cheatgrass (*Bromus tectorum*), scotch thistle (*Onopordum acanthium*), bull thistle (*Cirsium vulgare*), yellow star thistle (*Centaurea solstitialis*), perennial pepperweed (*Lepidium latifolium*), and hoary cress (*Cardaria draba*) (BLM 1993, 2005, 2007, 2007a).

### **3.4.7 Human Health and Safety**

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 and to the BLM employees and contractors conducting the gather and/or handling the wild horses, as well as to the public themselves. Because these wild 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 to 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. The same unknown and unexpected obstacles can impact the wild horses 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 any person in close proximity, as well as cause decreased vision. Though rare, helicopter crashes and hard landings can, and have occurred (approximately 10 times over the last 30+ years), while conducting wild horse gathers, which necessitates the need to follow gather operations and visitor protocols at every wild horse gather to assure the safety of all people and animals involved. Flying debris caused by a helicopter poses a safety concern to BLM and contractor staff, visitors, and the wild horses.

During the herding process, wild horses will try to flee if they perceive that something or someone suddenly blocks or crosses their path. Fleeing wild 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 BLM and contractor staff who are trying to sort, move and care for the wild 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.

The BLM is committed to allowing access by interested members of the public to the fullest possible degree without compromising safety or the success of operations. To minimize risks to the public from helicopter operations, the gather contractor is required to conduct all helicopter operations in a safe manner, and to comply with FAA regulations (FAR) 91.119 and BLM IM No. 2010-164<sup>4</sup> (Appendix D). Public observations sites will also be established in locations that reduce safety risks to the public (e.g., from helicopter-related debris or from the rare helicopter crash landing, or from the potential path of gathered wild horses), to the wild horses (e.g., by ensuring observers will not be in the line of vision of wild horses being moved to the gather site) and to contractors and BLM employees who must remain focused on the gather operations and the health and well-being of the wild horses. The Public Observation Protocols found in Appendix B provide the public with the opportunity to safely observe the gather operations. Every attempt will be made to identify observation site(s) at the gather location that offers good viewing opportunities, although there may be circumstances (flat terrain, limited vegetative cover, private lands, etc.) that require viewing locations to be at greater distances from the gather site to ensure safe gather operations.

### **3.4.8 Livestock Grazing**

Under BLM permitting, term livestock grazing occurs within each of the three HMAs (Figure 6). The grazing allotments (GAs) are described in Table 12.

---

<sup>4</sup> At recent gathers, public observers have ranged in number from only a handful of individuals to a maximum of between 15-25 members of the public. At these numbers, BLM has determined that the current level of public visitation to gather operations falls below the threshold of an "open air assembly" under the FAR regulations. 14 CFR § 91.119.

**Table 12. Grazing Allotments and Authorized Livestock Use.**

| HMA                     | Allotment         | Percent of HMA | Authorized Livestock Type | Season of Use by Pasture       | Permitted Use (AUMs) | Actual Use 2010* | Actual Permitted Use |
|-------------------------|-------------------|----------------|---------------------------|--------------------------------|----------------------|------------------|----------------------|
| <b>Flanigan</b>         | Flanigan          | 83%            | Cattle                    | Juniper Basin                  | 1,295                | 796              | 61%                  |
|                         |                   |                |                           | Honey Lake                     | 1,351                | 743              | 55%                  |
|                         |                   |                |                           | Cold Spring                    | 2,371                | 1,438            | 60%                  |
|                         | Big Canyon        | 2%             | Cattle                    | Pasture 1                      | 63                   | 63               | 100%                 |
|                         |                   |                |                           | Pastures 2,3 & 5               | 338                  | 338              | 100%                 |
|                         |                   |                |                           | Pastures 2-4                   | 2,650                | 1,032            | 39%                  |
|                         | Winnemucca Ranch  | 15%            | Cattle                    | Winnemucca                     | 1,377                | 1,175            | 85%                  |
|                         |                   |                |                           | Seven Lakes                    | 305                  | 276              | 90%                  |
|                         |                   |                |                           | Spanish Flat                   | 1,548                | 1,548            | 100%                 |
| <b>Dogskin Mountain</b> | Paiute Canyon     | 100%           | Cattle                    | Warm Springs/<br>Hungry Valley | 1,381                | 1,229            | 89%                  |
|                         |                   |                |                           | Incandescent<br>Rocks          | 349                  | 348              | 99%                  |
|                         |                   |                |                           | Tule Peak                      | 654                  | 627              | 96%                  |
|                         |                   |                |                           | Dogskin<br>Fall                | 302                  | 254              | 84%                  |
|                         |                   |                |                           |                                | 357                  | 332              | 93%                  |
|                         |                   |                |                           | Shovel Springs                 | 1,059                | 928              | 87%                  |
| <b>Granite Peak</b>     | Antelope Mountain | 100%           | Cattle                    | Pasture 1                      | 6,358**              | 1,160            | 40%**                |
|                         |                   |                |                           | Pasture 2                      |                      | 687              |                      |
|                         |                   |                |                           | Pasture 3                      |                      | 711              |                      |

\*Actual use for the Winnemucca pasture is 2009 data.

\*\* For all three pastures.

## 4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential direct, indirect, and residual effects to resources that may result from the Proposed Action or Alternatives. In this document, the word “adverse” is used in characterizing minor (non-significant) detrimental effects on the resource. “Beneficial” effects would have a positive effect on the resource. In this document, the terms “effect” and “impact” are used synonymously.

### 4.1 Alternative A: Proposed Action: Gather, Treat, Remove Excess Wild horses Including Use of PZP-22 and Adjust Sex Ratio to 60 Percent Male for the Flanigan HMA

#### 4.1.1 Wild horses

Based on the excess population of wild horses, the Proposed Action would permanently remove approximately 283 wild horses including: 87 wild horses from within and 157 wild horses outside the Flanigan HMA; 12 wild horses from outside the Dogskin Mountain HMA; and 27 wild horses from outside the Granite Peak HMA. All 2011 foals, which would be between six to nine months of age at the time of this gather, and would be removed as “weaned foals.” Any foals less than four months of age would be either removed or released with its mare depending on the final disposition of the mare. The gather would occur in January or February 2012, and would take between seven days and 10 days to be completed. The Proposed Action for the Flanigan HMA would also attempt to gather a sufficient number beyond the excess wild horses to be removed, to allow for the application of PZP-22 to all breeding mares to be re-released. Consistent with the Director’s proposed Wild Horse and Burro Strategy, the sex ratio of animals returned to the Flanigan HMA would be adjusted to favor males (60 percent stallions).

Excess wild horses would be removed using a selective removal strategy as follows: 1.) *first priority*: age class – four years and younger; 2.) *second priority* – age class – eleven to nineteen years; 3.) *third priority* – age class – five to 10 years; and 4.) *fourth priority* – age class – 20 years and older would not be removed from the HMAs unless specific exceptions prevent them from being returned to the range.

During to the mountainous terrain and vegetative cover, gather efficiency may be less than optimal. Gather efficiency averages approximately 80 percent, so it is likely all wild horses located would be gathered to achieve the Proposed Action. Wild horse numbers within the HMAs would be reduced to the low limit of AML<sup>5</sup>.

---

<sup>5</sup> Cothran (2009) suggests that a minimum population size of 50 effective breeding animals (i.e. a total population size of about 150 to 200 animals) is recommended to maintain an acceptable level of genetic diversity within wild horse populations. Reducing the Dogskin Mountain and Granite Peak HMA numbers to the low limit of AML (10 and 11 animals respectively) would not be anticipated to significantly affect the genetic diversity of these animals, in part because they do not remain entirely within the HMA during their lives and there are opportunities for the animals to intermix between the HMA’s and with other wild horses residing outside the HMA’s.

Herd health and characteristics data would be collected as a part of continued monitoring of the wild horse herds. Other data, including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may also be recorded for all gathered wild horses. Genetic baseline data would be collected to monitor genetic health of the wild horses.

#### *Capturing of Wild horses*

The BLM has been gathering excess wild horses from public lands since the mid-1970's. Gather mortality has averaged one-half percent. Another one-half percent of the animals captured were humanely euthanized due to pre-existing conditions and in accordance with BLM policy. BLM policy prohibits the gathering of wild horses with a helicopter between March 1 and June 30, which includes and covers the six weeks that precede and follow the peak foaling period (mid-April to mid-May). Gather operations would include the use of a helicopter, although in areas where there are only a few animals, personnel may herd the animals and collect them directly with trucks pulling horse trailers. All gather and handling activities would be conducted in accordance with Standard Operating Procedures (SOPs) (See Appendix A).

Injuries that can be sustained during gathers include: nicks and scrapes to legs, the face or body when coming into contact with brush or tree limbs while being herded into trap sites and corrals. Rarely do wild horses break a leg from stepping into a rodent hole while being herded. Rarely would wild horses encounter barb wire fences and receive wire cuts. These non-fatal injuries would be treated at the holding corrals by a veterinarian.

Gathering wild horses during the summer can potentially lead to heat stress. The proposed gathers would take place during the winter reducing the chance for heat stress to occur. Water intake requirements are less during the winter; the BLM will provide supplemental water at trap and holding corrals as needed.

#### *Wild Horse Response to Handling*

Impacts to individual animals may occur as a result of stress associated with the gathering, processing and transportation of the animals. The intensity of these impacts varies by individual animal, and can be indicated by behavior ranging from nervous agitation to physical distress. Other impacts can occur from separation from the main herd. Generally wild horses acclimate to the holding corrals quickly. Indirect impacts to individuals may include spontaneous abortions in mares, and increased social displacement and conflict between studs. Brief skirmishes can occur between studs following sorting. Traumatic injuries rarely occur. Injuries that could occur during the skirmishes include: kicking with bruises and bites, typically without breaking the skin.

Foals are occasionally gathered that were previously orphaned. They can be in poor health. The proposed gathers would take place mid-winter, and any gathered foals will likely have been weaned by their mother.

#### *Sorting and Transporting of Wild horses*

Most injuries occur once wild horses have been herded and are either within the trap sites or holding corrals, or during transportation between the facilities, or while being sorted. Injuries that could occur include kicks and bites from other wild horses, to nicks from contact with corral panels or gates. Sorting and transportation is handled as quickly as possible to minimize fighting. During the capture and sorting process, animals are examined for health, injuries or other defects. Any decision to euthanize an animal would be consistent with BLM IM 2009-041 (Euthanasia Policy) and methods endorsed by the American Veterinary Medical Association. Wild horses that could be euthanized for non-gather related reasons include, but are not limited to: previous injuries (broken hip, leg), animals with few remaining teeth, in poor condition, and animals with serious physical defects (club foot).

#### *Adjust Population to 60 Percent Male Sex Ratio*

Stallions selected for release would increase the post-gather sex ratio to approximately 60 percent male in an effort to reduce population growth rates in combination with fertility control measures. Stallions would be selected to maintain a diverse age structure, herd characteristics and body type (conformation). It is expected that releasing additional stallions to reach the targeted sex ratio of 60 percent males would result in smaller band sizes, larger bachelor groups, and some increased competition for mares. With more stallions involved in breeding it should result in increased genetic exchange and improvement of genetic health within the herd. Due to the small population size of the Dogskin Mountain and Granite Peak HMAs, during implementation, the BLM may decide not to adjust the sex ratio for these two HMAs.

#### *Population Control Measures*

All mares to be returned to the HMA would first be treated with PZP-22. Based on a gather efficiency of 80 percent, the BLM anticipates that approximately 26 to 32 mares from the Flanigan HMA would be treated with PZP-22. When injected, the PZP (antigen) causes the mare's immune system to produce antibodies, these antibodies bind to the mare's eggs, effectively blocking sperm binding and fertilization (Zoo Montana 2000). Application of PZP-22 to a pregnant mare would not affect the development of the fetus (Kirkpatrick et al 1995). PZP-22 has had no apparent effect on pregnancies in-progress, the health of off-spring, or the behavior of treated mares (Turner et al 1997). Ransom et al (2010) found no differences in how PZP-treated mares (compared to non-treated mares) allocated their time between feeding, resting, travel, maintenance, and other social behaviors in three studied populations of wild horses. The treatment process would be handled by trained staff. SOP's for use of PZP-22 are found in Appendix C. Mares receiving PZP-22 would experience increased stress when handled and freeze-marked. Any swelling or local reaction to the injection site would be short-term and localized. Due to the small population size of the Dogskin Mountain and Granite Peak HMAs, during implementation, the BLM may decide not to treat mares being returned to these HMAs with PZP-22.

#### *Wild horses Re-Released into the HMA*

Direct effects to wild horse populations as a result of the gathers include: altered herd population dynamics; age structure and/or sex ratio; reduced numbers and in instances where

PZP-22 is used, lower population growth rates. Reducing the number of animals would improve range health and reduce the possibility of starvation due to insufficient forage and/or water. There would be decreased competition with wildlife and livestock for forage and water. Reducing the wild horse population to within AML would also reduce the frequency that the animals move outside the HMA onto lands not being managed for wild horses. A thriving natural ecological balance would be maintained or restored throughout the area. Improved herd conditions would likely result in higher foal survival rates.

Population dynamics would be expected to normalize within weeks of the animals being returned to the HMAs. Wild horse populations would be expected to remain within AML for three to five years. If PZP-22 is applied to mares, that treatment may extend the timeframe that the population remains within AML.

#### *Transport, Short-Term Holding, and Adoption Preparation*

Wild horses removed from the range would be transported to a short-term holding facility using trucks with stock trailers. Animals would be segregated by sex and age, and loaded into separate compartments. Although transportation time for wild horses is limited to no more than 12 hours, actual transport time from the gather area to a short-term holding facility is expected to be much less. It is anticipated that the short-term holding facility would be in Palomino Valley, Nevada. During transport, potential impacts to individual wild horses can include stress, slipping, falling, being kicked or bitten, or stepped on by another animal.

Upon arrival at the short-term holding facility, the wild horses would be off-loaded and placed into holding pens where they are provided water and hay. A veterinarian would provide care and make any recommendation for an animal that would need to be euthanized. Wild horses that could be euthanized for non-gather related reasons include, but are not limited to: previous injuries (broken hip, leg), animals with few remaining teeth (dental regression), in poor condition, and animals with serious physical defects (club foot).

After some time of adjustment to the short-term holding facility, the animals would be prepared for adoption. Preparation includes freeze-marking with a unique identification number, vaccination from common diseases, castration, and de-worming. Potential impacts during adoption preparation would be similar to those that can occur during transport. A minimum of 700 square feet per animal is provided at the facility. Mortality averages approximately five percent (GAO 2008) including animals euthanized from pre-gather condition, animals unable to transition to feed, and animals which die accidentally during sorting, handling or preparation. As of August 2011, approximately 11,500 excess wild horses are being maintained within BLM's short-term holding facilities.

#### *Adoption*

Applicants who wish to adopt a wild horse must have at least 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 is subject to BLM inspection. After

one year, the applicant may take title to the horse at which point the animal become the property of the applicant. Adoptions are conducted in accordance with 43 CFR 4750.

#### *Sale with Limitation*

A buyer must fill out an application and be pre-approved before they may purchase a wild horse. A sale-eligible animal is one that is more than 10 years old or has been offered unsuccessfully for adoption at least three times. The application specifies that all buyers may not sell wild horses to slaughter houses or to anyone who would sell the animal to a commercial processing plant. Sales of wild horses are conducted in accordance with the WFRHBA and any congressional limitations.

#### *Long-Term Grassland Pastures*

As of August 2011, approximately 35,800 wild horses reside in long-term pastures. Potential impacts to individual wild horses from transportation to long-term pastures are similar to those impacts previously discussed. One difference is that when being transported to long-term pastures, animals may be transported for up to 24 hours, at which time they are off-loaded and provided eight hours of on-the-ground rest. During the rest period, each animal is provided water and hay.

Long-term pastures are designed to provide excess wild horses with humane, life-long care in a natural setting. The pastures are large enough in size (privately owned lands ranging in size from 1,100 to 46,000 acres) to allow free-roaming behavior with forage, water and shelter to sustain them in good condition. Mares and castrated stallions are segregated into separate pastures. Foals are born only to those mares recently gathers from the western public lands. When those foals are weaned at about eight to 10 months, they are then shipped to short-term holding facilities to be prepared and made available for adoption. A very small number of animals may be euthanized if their condition is body condition 3 or lower due to age and other factors. Although most wild horses residing on long-term pastures live longer than average, natural mortality averages approximately eight percent per year (GAO 2008).

#### *Euthanasia or Sale Without Limitation*

While euthanasia and sale without limitation are allowed under the WFRHBA, these activities are not permitted by BLM policy and congressional limitations.

#### **4.1.2 BLM Sensitive Species**

Any direct impacts to sensitive species under the Proposed Action would occur during gather operations. Direct, short-term, localized impacts could occur during gather operations from temporary spatial displacement of individual animals. Sensitive species present during gather operations would likely temporarily move away from the areas where vehicles and the helicopter are being used. This minor disruption would last no more than a few days in any one area. Gather operations would not be expected to directly impact breeding or nesting because operations would occur mid-winter outside critical breeding or nesting periods.

Reducing horse numbers to within the AML would be expected to indirectly benefit sensitive species because the health of the rangeland resources used by sensitive species would be protected from habitat degradation associated with wild horse overpopulation. Less vegetation would be consumed by wild horses, making it available to sensitive species for forage, nesting substrate, and/or cover. Less utilization and competition for forage, water, and space would be beneficial for sensitive species. Managing wild horse populations within the AML should maintain habitat conditions for sensitive species over the long-term by providing diverse plant communities that meet applicable life cycle requirements of any given species. Sensitive species such as the golden eagle or burrowing owl that forage in the HMAs would benefit from a healthy prey base.

#### **4.1.3 Migratory Birds**

Any direct effects to migratory birds under the Proposed Action would occur during gather operations. Direct, short-term, localized impacts could occur to resident birds during gather operations from temporary spatial displacement of individual birds. Migratory birds present during gather operations would likely temporarily move away from the areas where vehicles and the helicopter are being used. This minor disruption would last no more than a few days in any one area. Gather operations would not be expected to directly impact breeding or nesting because operations would occur mid-winter outside critical breeding or nesting periods.

Reducing horse numbers to within the AML would be expected to indirectly benefit migratory birds because the health of the rangeland resources used by birds would be protected from habitat degradation associated with wild horse overpopulation. Less vegetation would be consumed by wild horses, making it available to birds for forage, nesting substrate, and/or cover. Less utilization and competition for forage, water, and space would be beneficial for migratory bird species. Managing wild horse populations within the AML should maintain habitat conditions for birds over the long-term by providing diverse plant communities that meet applicable life cycle requirements of any given species.

#### **4.1.4 General Wildlife**

Any direct effects to general wildlife under the Proposed Action would occur during gather operations. Although some wildlife such as small mammals, rodents, and reptiles could be trampled or have burrows destroyed, overall the potential direct effects would likely be short-term and result from temporary spatial displacement of individual animals. Wildlife present during gather operations would likely temporarily move away from the areas where vehicles and the helicopter are being used. This minor disruption would last no more than a few days in any one area. The gather activities would take place mid-winter outside critical breeding or nesting periods.

Reducing horse numbers to within the AML would be expected to indirectly benefit wildlife because the health of the rangeland resources used by wildlife would be protected from habitat degradation associated with wild horse overpopulation. Less vegetation would be consumed by wild horses, making it available to wildlife for forage, nesting substrate, and/or cover. Less utilization and competition for forage, water, and space would be beneficial for

wildlife. Managing wild horse populations within the AML should maintain habitat conditions for wildlife over the long-term by providing diverse plant communities that meet applicable life cycle requirements of any given species.

#### **4.1.5 Vegetation**

Under the Proposed Action, any direct impacts to vegetation would occur during the gather operations. Motor vehicles would remain on existing roadways. No construction or vegetation clearing activities would occur. While the wild horses are being herded by helicopter, the animals may trample or crush some vegetation. Personnel and visitors in the area of the trap sites and holding corrals may trample or crush some vegetation. The timeframe for the gathers is expected to be several days in any specific area, and would occur in mid-winter (the dormant season for plants). To the greatest extent possible, trap sites and holding corrals will be placed in previously disturbed areas, further minimizing potential effects to vegetation.

As described in Section 3.4.5, data collected in 2011 documented heavy to severe forage utilization from wild horses within the Flanigan and Dogskin Mountain HMAs. A reduced number of wild horses within and outside the HMAs is likely to improve vegetation conditions for three to five years. Plant production is likely to increase due to fewer wild horses eating the forage. More vegetation would increase the availability of habitat for general wildlife, BLM sensitive species, and migratory birds in the area.

#### **4.1.6 Invasive Weeds, Non-Native Plant Species**

The Proposed Action would occur mid-winter, when invasive weeds and non-native plant species are dormant and post-seed. Gather activities would take place primarily in previously disturbed areas and vehicles would remain on existing roads, minimizing the opportunities for the spread of undesirable plants. Wild horses, like all wildlife, have the potential to transfer the seeds of undesirable plants from one area to another. Most invasive weeds and non-native plant species in the project area are already wide-spread. The gather of wild horses that would take place over only a few days in any specific area would not be expected to change the overall distribution of invasive weeds and non-native plant species.

#### **4.1.7 Human Health and Safety**

All helicopter operations must be in compliance with FAR 91.119. Public safety as well as that of the BLM and contractor staff is always a concern during the gather operations and is addressed through the implementation of Public Observation Protocols (see Appendix D) that have been used in recent gathers to ensure that the public remains at a safe distance and does not impede gather operations. Appropriate BLM staffing (public affair specialists and law enforcement officers) would 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.

When the helicopter is working close to the ground, the rotor wash of the helicopter is a safety concern for members of the public 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. Should a helicopter crash or have a hard landing it is possible that pieces of the helicopter can travel significant distances through the air which can strike or land on anyone in close proximity. All helicopter operations must be in compliance with FAR 91.119.

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 wild 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 wild horses and burros by causing them to be kicked, struck, and possibly trampled by the animals trying to flee such disturbance. Such disturbances also have the potential for similar harm to the members of the public.

#### **4.1.8 Livestock Grazing**

Under the Proposed Action, there would be no changes to authorized livestock grazing within any of the HMAs. As described in Section 4.4, changes to authorized livestock grazing are outside the scope of this EA. Reducing the number of wild horses may improve forage conditions for livestock. Previously approved MUDs allocated forage between livestock, wildlife and wild horses through a public decision-making process. Coordination with the livestock permittee(s) would take place prior to gather operations to ensure that any direct impacts to on-going grazing operations would be avoided.

### **4.2 Alternative B: Gather and Remove Excess Wild horses Outside HMAs and Achieve Low AML on the Flanigan HMA**

#### **4.2.1 Wild horses**

Impacts to wild under Alternative B would be similar to the Proposed Action. Stresses to wild horses from the treatment of mares with PZP-22 would not occur under Alternative B. However, because this method of population growth control would not be implemented, there could be a higher frequency of horse gathers in the future. Stresses associated with more frequent horse gather and removal efforts could increase under Alternative B.

#### **4.2.2 BLM Sensitive Species**

Effects to sensitive species under Alternative B would be similar to the Proposed Action except there could be more frequent horse gathers and removal efforts in the future because a method of controlling population growth, PZP-22 injections, would not be implemented. Any effects to sensitive species from gather operations could occur more often without applying this population growth control method. Habitat conditions for sensitive species could deteriorate sooner under this alternative because of quicker wild horse overpopulation.

#### **4.2.3 Migratory Birds**

Effects to migratory birds under Alternative B would be similar to the Proposed Action except there could be more frequent horse gathers and removal efforts in the future because a method of controlling population growth, PZP-22 injections, would not be implemented. Any effects to birds from gather operations could occur more often without applying this population growth control method. Habitat conditions for migratory birds could deteriorate sooner under this alternative because of quicker wild horse overpopulation.

#### **4.2.4 General Wildlife**

Effects to wildlife under Alternative B would be similar to the Proposed Action except there could be more frequent horse gathers and removal efforts in the future because a method of controlling population growth, PZP-22 injections, would not be implemented. Any effects to wildlife from gather operations could occur more often without applying this population growth control method. Habitat conditions for wildlife could deteriorate sooner under this alternative because of quicker wild horse overpopulation.

#### **4.2.5 Vegetation**

Impacts to vegetation under Alternative B would be similar to the Proposed Action. As described in Section 3.4.5, data collected in 2011 documented heavy to severe forage utilization from wild horses within the Flanigan and Dogskin Mountain HMAs. Because a method of population growth control, PZP-injections, would not be implemented, there could be a higher frequency of horse gathers in the future. Vegetative conditions could decline sooner. Any direct impacts to vegetation could occur more frequently without implementation of PZP-22.

#### **4.2.6 Invasive Weeds, Non-Native Plant Species**

Impacts to invasive weeds and non-native plant species under Alternative B would be similar to the Proposed Action. Because a method of population growth control, PZP-injections, would not be implemented, there could be a higher frequency of horse gathers in the future. As a result, the risk of spreading invasive weeds and non-native plant species during gather operations would be increased.

#### **4.2.7 Human Health and Safety**

The effects to human health and safety for Alternative B would be the same as the Proposed Action.

#### **4.2.8 Livestock Grazing**

The effects to livestock grazing for Alternative B would be the same as the Proposed Action.

### **4.3 Alternative C: No Action**

#### **4.3.1 Wild horses**

Under the No Action Alternative, the BLM would not conduct a gather, treatment and removal of wild horses within the Flanigan, Dogskin Mountain and Granite Peak HMAs in 2012. Wild horse populations currently exceed AML and would likely continue to increase, some wild horse populations can increase up to 25 percent per year (USGS 2011). Deterioration of range health would occur or continue to occur until such time as AML is restored. No short-term direct impacts to wild horses would occur. Over the long-term there would be adverse effects to wild horse populations in the area. As the range deteriorates, there would be increased competition for available water and forage between wild horses, wildlife and livestock.

Wild horses are a long-lived species, with documented survival rates exceeding 95% for adults. Many wild horse herds grow at sustained high rates of 15 to 22 percent per year (BLM 2005a). As previously described in Section 2.4 (G), natural populations controls including predation do not maintain wild horse populations within carrying capacity on the range. Under the No Action Alternative, the wild horse population in the Flanigan HMA (median trial) in 11 years would be 1,470 animals. For the Dogskin Mountain HMA the wild horse population (median trial) in 11 years would be 102 animals, and for the Granite Peak HMA the wild horse population (median trial) in 11 years would be 65 animals. For all WinEquus modeling results see Appendix E. Individual wild horses would be at risk of death by starvation and lack of water as the population continues to grow. Mares and foals are affected the most by competition for limited resources. Fighting among studs would increase as they protect their position at scarce water sources, as well as injuries and death to all age classes. As populations continue to rise, and as resources become more scarce, wild horses would range further away from the HMAs onto BLM and private lands not managed for wild horses. This would lead to increased conflicts with other multiple uses including wildlife, livestock grazing, and with stock wild horses on public or private lands.

Deterioration of range resources from overpopulation of wild horses is contrary to the WFRHBA, which mandates the BLM to *“prevent the range from deterioration associated with overpopulation,”* and *“remove excess wild horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area.”* Under the No Action Alternative, the BLM would not be able to maintain a thriving natural ecological balance and multiple-use relationship on the lands it manages.

#### **4.3.2 BLM Sensitive Species**

No gather operations would occur under the No Action Alternative. Although no effects to sensitive species from potential trampling and spatial displacement would occur, horse populations that increase over the upper limit of the AML could have long-term adverse effects to sensitive species. Over-utilization of forage and water sources by wild horses could occur if population numbers increase beyond the AML. Habitat could become degraded, which would decrease forage and cover available to sensitive species. Over time this could decrease the

abundance of sensitive species in and around the HMAs and inhibit the ability of plant communities to meet applicable life cycle requirements of sensitive species.

Sage-grouse require specific amounts of grass cover for optimal nesting habitat, an abundance of forbs for brood-rearing habitat, and water with sufficient vegetation to support insects and to provide cover (Connelly et al. 2000). Sage-grouse habitat can be adversely affected if grasses are over-utilized because horse populations are above the AML.

#### **4.3.3 Migratory Birds**

No gather operations would occur under the No Action Alternative. Although no direct, short-term, localized impacts to migratory birds from potential spatial displacement would occur, horse populations that increase over the upper limit of the AML could have long-term adverse effects to migratory birds. Over-utilization of forage and water sources by wild horses could occur if population numbers increase beyond the AML. Habitat could become degraded, which would decrease forage and cover available to migratory bird species. Over time this could decrease the abundance of bird species in and around the HMAs and inhibit the ability of plant communities to meet applicable life cycle requirements of migratory birds.

#### **4.3.4 General Wildlife**

No gather operations would occur under the No Action Alternative. Although no effects to wildlife from potential trampling and spatial displacement would occur under this alternative, horse populations currently exceed the AML and would likely continue to increase. Horse populations that increase over the upper limit of the AML can have long-term adverse effects to wildlife resources. Plant diversity can decrease and habitat structure can be altered if the AML is exceeded over time and vegetation and water sources are over-utilized (Beever and Brussard 2000). A less diverse plant community can be vulnerable to wildfire and invasive grasses such as cheatgrass. Cheatgrass displaces native perennial plants by germinating earlier and quicker. It is also adapted to frequent fires perpetuated by the fine fuels it creates. Beever et al. (2008) studied vegetation response to removal of wild horses and found sites without wild horses had greater shrub cover, total plant cover, plant species richness, and native grass cover than sites with wild horses. Wild horses will use areas of the HMAs that have more grasses because they are primarily grazers. Decreased cover and diversity of grasses and shrubs as well as decreased mammal burrow density have been documented at water sources used by wild horses (Beever and Brussard 2000, Ganskopp and Vavra 1986). Small mammals are prey for many species and less prey could negatively affect raptors and carnivores that inhabit the area.

Deterioration of range health would occur or continue to occur until the AML is restored. Over the long-term, wildlife species that utilize the rangeland within and adjacent to the HMAs would be adversely affected by the deterioration of their habitat. Over time, declining habitat quality could decrease the abundance of wildlife species in and around the HMAs and inhibit the ability of plant communities to meet applicable life cycle requirements of wildlife species.

#### **4.3.5 Vegetation**

Under the No Action Alternative, the BLM would not conduct a gather, treatment and removal of wild horses within the Flanigan, Dogskin Mountain and Granite Peak HMAs in 2012. Wild horse populations currently exceed AML and would likely continue to increase, some wild horse populations can increase up to 25 percent per year (USGS 2011). As described in Section 3.4.5, data collected in 2011 documented heavy to severe forage utilization from wild horses within the Flanigan and Dogskin Mountain HMAs. Deterioration of range health would occur or continue to occur until such time as AML is restored. No short-term direct impacts to vegetation would occur. Over the long-term, vegetation within and adjacent to the HMAs would be adversely affected by the overpopulation of wild horses.

#### **4.3.6 Invasive Weeds, Non-Native Plant Species**

Under the No Action Alternative, the BLM would not conduct a gather, treatment and removal of wild horses within the Flanigan, Dogskin Mountain and Granite Peak HMAs in 2012. Wild horse populations currently exceed AML and would likely continue to increase. Although there would be no opportunity for the spread of invasive weeds, non-native plant species during horse gather operations because they would not take place, there could be increased spread of the undesirable plants due to the overpopulation of wild horses.

#### **4.3.7 Human Health and Safety**

Under the No Action Alternative, the BLM would not conduct a gather, treatment and removal of wild horses within the Flanigan, Dogskin Mountain and Granite Peak HMAs in 2012. There would be no effect on human health and safety because no motorized vehicle operations would occur.

#### **4.3.8 Livestock Grazing**

Under the No Action Alternative, the BLM would not conduct a gather, treatment and removal of wild horses within the Flanigan, Dogskin Mountain and Granite Peak HMAs in 2012. There would be no direct effects on livestock grazing because no gather operations would occur. As described in Section 4.4, changes to authorized livestock grazing are outside the scope of this EA. Under the No Action Alternative, wild horses would continue to exceed the AML, utilizing forage allocated to livestock. As wild horse populations grow, forage conditions would deteriorate, causing adverse effects to forage allocated for livestock use.

#### **4.4 Residual Effects**

“Residual effects” are those adverse effects that remain after implementation of mitigation measures. No major (significant) adverse effects have been identified in this EA. Measures have been incorporated into the elements of the Proposed Action to avoid and minimize any adverse effects. No mitigation is necessary; there would be no residual effects.

## 5.0 CUMULATIVE EFFECTS

A cumulative effect is defined under NEPA as “the change in the environment which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other action”. “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR Part 1508.7). Past, present, and reasonably foreseeable future actions are analyzed to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the Proposed Action and No Action Alternative may have an additive and significant relationship to those effects.

### **Geographic Scope**

The geographic scope of the cumulative Effects Analysis is the three HMAs for the Proposed Action, and an area of four miles adjacent to the HMAs for a total of approximately 231,103 acres, of which 28,802 acres are within the HMA boundaries (Figure 6). An area larger than the HMAs has been considered in this analysis because of the range of the wild horses and trap sites are likely to occur outside the HMAs. Although a large cumulative effects analysis area has been identified, actual gather operations and any direct effects to most resources would be confined to only a few acres.

### **Timeframe of Effects**

The timeframe for the cumulative effects from the gather operations is seven to 10 days. All direct effects to resources would occur during the short-term during the gather operations. The time frame for the cumulative effects from the indirect effects associated with reducing the wild horse population is less than five years. After this timeframe, the wild horse population is likely to return to pre-gather levels unless there are additional removal and treatment actions taken by the BLM (See *Reasonably Foreseeable Future Actions*).

### **Past Actions**

Wild horse management has been on-going since the enactment of the WFRHBA. Since 1973 the BLM has removed approximately 1,242 wild horses from within and adjacent to the Flanigan HMA, 50 wild horses from within and adjacent to the Dogskin Mountain HMA, and 138 wild horses from within and adjacent to the Granite Peak HMA. A substantially larger number of wild horses have been removed from the Flanigan HMA. In 1973 the first population inventory for Dogskin Mountain and Granite Peak HMAs was six animals each compared to 96 for the Flanigan HMA. As described in Section 3.4.1 past decisions affecting wild horses includes: establishment of HMAs after enactment of the WFRHBA; and establishment of MUDs and AML’s through public decision-making processes.

Livestock grazing, sheep and/or cattle, is known to have occurred in the area since the 1930’s under BLM permitting. As shown in Figure 5, portions of the Flanigan HMA overlap the Big Canyon, Winnemucca Ranch and Flanigan GA, the Dogskin Mountain HMA is entirely within the Paiute Canyon GA, and the Granite Peak HMA is entirely within the Antelope Mountain GA. To

facilitate the management of livestock, fencing, and temporary and permanent water troughs have been installed within the GA's. The most recent renewal of term livestock grazing permits were issued for the Flanigan and Antelope Mountain GA's in 2007 (BLM 2007, 2007a).

Dispersed recreation occurs in the Virginia Mountains, Dogskin Mountain and Sand Hills. General activities include: rock hounding, sightseeing, hunting, off-road vehicle (OHV) use, and wildlife viewing. The BLM permits non-commercial and commercial recreation events through its Special Recreation Permit program. The area is an "open and unlimited use" are for travel management. Although most vehicle use occurs on existing two-track trails and dirt roads, OHV use is permitted. Actual number of users per day or per year are not available, but generally speaking the intensity of recreation use is low and dispersed. Most use occurs during the spring and fall.

The Virginia Mountains, Dogskin Mountain and Sand Hills were subject to a historic regime of wildfire caused by lightning strikes. Natural-caused fire may have burned several acres to several thousand acres during one event. In more modern times, the area is also subject to man-caused wildfire in addition to lightning-caused fire (Table 13). Several wildfires have occurred within the past 30 years adjacent to and within the Allotment. Typical wildfire patterns created a mosaic pattern on the landscape, burning intensely in some areas removing all vegetation, and burning lightly in other areas, removing only grasses or groundcover. Re-seeding efforts have occurred within the HMAs burned by fire. One fire of particular importance occurred in 1999, during which 61 percent of the Flanigan HMA burned. As a result the entire wild horse population at that time, that could be rounded up, was removed from the HMA due to complete lack of forage (BLM 1999).

**Table 13. Past Fire History and Re seeding.**

| HMA                     | Year | Activity              | Acres  |
|-------------------------|------|-----------------------|--------|
| <b>Flanigan</b>         | 1999 | Lightning-caused fire | 10,584 |
|                         | 1999 | Aerial re-seeding     | 10,584 |
| <b>Dogskin Mountain</b> | 1985 | Unknown origin        | 670    |
|                         | 1988 | Lightning-caused fire | 2,374  |
| <b>Granite Peak</b>     | 1984 | Unknown origin        | 2,252  |
|                         | 1996 | Human-caused fire     | 495    |
|                         | 2007 | Lightning-caused fire | 141    |

**Present Actions**

Under the Proposed Action, the BLM would conduct a gather, treatment and removal of wild horses in January or February 2012. As described in the Proposed Action, all HMAs currently exceed AML. The proposed management actions are necessary to bring numbers to within AML and prevent the deterioration of range health. Under the No Action Alternative, the BLM would not implement a horse gather at this time. Range health would continue to deteriorate as wild horse population increase and exceed the AML.

Under the Proposed Action or Alternatives, the BLM would continue to permit livestock grazing within GA's that overlap the three HMAs. Fencing and maintenance of temporary and

permanent water troughs continues. Implementation of the Proposed Action or Alternatives would not change livestock grazing.

As described in Past Actions, recreation activities are on-going; use is generally dispersed and low intensity. No change to recreation would occur under either the Proposed Action or Alternatives.

Unplanned lightning-caused or human-caused wildfire may occur at any time. The intensity and scope of any such fire is unknown, and the impacts associated with any near-term fire are too speculative to evaluate in this EA. Should any fire occur in the near-term, post-fire rehabilitation including re-seeding with native plants would likely occur.

### **Reasonably Foreseeable Actions**

The BLM is likely to conduct substantially similar gather, treatment and removal of wild horses within these three HMAs during the period of 2012 to 2017 to maintain wild horse populations within AML and prevent deterioration of range health. The BLM will continue to monitor range and wild horse health to determine the timing of any future wild horse activities. Monitoring includes periodic population inventories, and observation of the distribution of wild horses and their ingress and egress from the HMAs.

The BLM currently permits livestock grazing within GA's that overlap the three HMAs. Fencing and maintenance of temporary and permanent water troughs would continue. Renewal of term livestock grazing permits are likely to occur in the future.

As described in Past and Present Actions, dispersed recreation is likely to continue in the future, but it is anticipated to remain similar in nature (dispersed and low intensity).

Unplanned lightning-caused or human-caused wildfire are likely to occur in the future. The intensity and scope of any such fire is unknown, and the impacts associated with any future fire(s) are too speculative to evaluate in this EA. Should any fire occur, post-fire rehabilitation including re-seeding with native plants would likely occur.

### **Effects Analysis**

Resource topics considered under the Effects Analysis include all resources identified in Table 2 and Table 3 in Section 3.0 which "may be affected" by direct or indirect effects of the Proposed Action or Alternatives. There would be no cumulative effects to Human Health and Safety, therefore this resource is not carried further for analysis.

#### *Wild horses*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to wild horses would be beneficial. There would be short-term direct effects to wild horse populations in the project area during gather operations. However, by returning the population to within AML, those remaining are likely to benefit from improved vegetative and range conditions. Cumulative effects under Alternative B would be

similar to the Proposed Action. Under the No Action Alternative, cumulative effects would be adverse. No direct effects to wild horses would occur. Indirect cumulative effects from overpopulation of wild horses would be adverse. A thriving natural ecological balance would not be maintained, as forage and availability of water decreases from the overpopulation, overall wild horse health would be expected to adversely affected.

#### *BLM Sensitive Species*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to sensitive species would be beneficial. Reducing the number of wild horses would improve habitat (vegetation and conditions of water sources) and sensitive species that occur in the project area would likely benefit from this improvement. Cumulative effects under Alternative B would be similar to the Proposed Action. Under the No Action Alternative, an overpopulation of wild horses would continue, and as populations grow, range health (habitat) would deteriorate. Degraded range conditions would likely cumulatively adversely affect sensitive species. Under the No Action Alternative, cumulative effects would be adverse. Cumulative effects would result largely from the adverse indirect effects of overpopulation of wild horses. A thriving natural ecological balance would not be maintained and habitat conditions for sensitive species would deteriorate, causing a potential long-term decline in species diversity and abundance.

#### *Migratory Birds*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to migratory birds would be beneficial. Reducing the number of wild horses would improve habitat (vegetation and conditions of water sources) and migratory birds that occur in the project area would likely benefit from this improvement. Cumulative effects under Alternative B would be similar to the Proposed Action. Under the No Action Alternative, an overpopulation of wild horses would continue, and as populations grow, range health (habitat) would deteriorate. Degraded range conditions would likely cumulatively adversely affect migratory birds. Under the No Action Alternative, cumulative effects would be adverse. Cumulative effects would result largely from the adverse indirect effects of overpopulation of wild horses. A thriving natural ecological balance would not be maintained and habitat conditions for migratory birds would deteriorate, causing a potential long-term decline in species diversity and abundance.

#### *General Wildlife*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to general wildlife would be beneficial. Reducing the number of wild horses would improve habitat (vegetation and conditions of water sources) and wildlife species that occur in the project area would likely benefit from such improvement. Cumulative effects under Alternative B would be similar to the Proposed Action. Under the No Action Alternative, an overpopulation of wild horses would continue, and as populations grow, range health (habitat) would deteriorate. Degraded range conditions would likely cumulatively adversely affect general wildlife. Under the No Action Alternative, cumulative effects would be adverse. Cumulative effects would result largely from the adverse indirect effects of

overpopulation of wild horses. A thriving natural ecological balance would not be maintained and habitat conditions for general wildlife would deteriorate, causing potential long-term decline in species diversity and abundance.

#### *Vegetation*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to vegetation would be beneficial. Reducing the number of wild horses would improve vegetation conditions by reducing the number of animals that consume forage. Cumulative effects under Alternative B would be similar to the Proposed Action. Under the No Action Alternative, an overpopulation of wild horses would continue, and as populations continue to rise, vegetative conditions would cumulatively deteriorate. Under the No Action Alternative, cumulative effects would be adverse. No direct effects to vegetation would occur. Indirect cumulative effects from overpopulation of wild horses would be adverse. A thriving natural ecological balance would not be maintained and vegetation would deteriorate, causing a potential long-term decline in vegetative conditions and habitats, further causing potential long-term decline in wildlife species associated with habitat in the area.

#### *Invasive Weeds, Non-Native Plant Species*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to vegetation would be beneficial. Although there is a low risk of spreading invasive weeds and non-native plants during gather operations, the risk of spread of these undesirable plants is higher from the overpopulation of wild horses. Cumulative effects under Alternative B would be similar to the Proposed Action. Under the No Action Alternative, no cumulative effects would occur from gather operations because no gather would take place. However, over the long-term, the overpopulation of wild horses may have an adverse cumulative effect due to spread of invasive weeds and non-native plant species by the wild horses.

#### *Livestock Grazing*

Considering identified past, present and reasonably foreseeable actions, overall cumulative effects under the Proposed Action to livestock grazing would be beneficial. Reducing the number of wild horses would return their population levels to the low AML. Under prior public decision-making processes, the MUDs allocated forage to wildlife, livestock and wild horses. There would be no increase in livestock grazing as a result of the Proposed Action. Cumulative effects under Alternative B would be similar to the Proposed Action. Under the No Action Alternative, no cumulative effects would occur from gather operations because no gather would take place. However, over the long-term, the overpopulation of wild horses may have an adverse cumulative effect to forage that has been previously allocated to livestock.

## **6.0 MITIGATION MEASURES AND MONITORING**

Although no “significant” impacts to the human environment have been identified in this EA, the BLM has incorporated measures into this EA and they would be implemented during the gather operations to reduce or avoid adverse effects to wild horses. Standard Operating Procedures (SOPs) for Wild Horse Gathers are included in Appendix A, and SOPs for Use of PZP-22 are included in Appendix C. These SOPs represent the best methods for reducing impacts associated with the gathering, handling, and transporting of wild horses and collecting herd data.

Monitoring plans have been adopted for each of the HMAs as follows: Flanigan and Dogskin Mountain HMAs in 1995, and Granite Peak HMA in 1991 and are hereby incorporated by reference (BLM 1991, 1995, 1995a). Key elements of on-going monitoring include: the collection of hair samples for genetic baseline information; periodic population inventories; resource monitoring including collection of climate data; forage utilization; and distribution data of wild horses. If monitoring indicates that genetic diversity is not being adequately maintained, young mares from HMAs in similar environments may be added every generation (every eight to 10 years) to avoid inbreeding and maintain acceptable genetic diversity.

## 7.0 PERSONS, GROUPS, AND AGENCIES CONSULTED

### 7.1 List of Preparers

#### Bureau of Land Management

| Name            | Title                                    | Project Expertise  |
|-----------------|--|--|
| John Axtell     | Wild Horse and Burro Specialist          | Wild horses  |
| Alan Shepherd   | State Lead, Wild Horse and Burro Program | Wild horses  |
| Steve Christy   | Archeologist                             | Cultural Resources, Native American Religious Concerns     |
| Brian Buttazoni | Planning and Environmental Coordinator   | NEPA   |
| Katrina Leavitt | Rangeland Management Specialist          | Livestock, Vegetation                                      |
| Ryan Leary      | Rangeland Management Specialist          | Vegetation   |
| Pilar Ziegler   | Wildlife Biologist                       | Migratory Birds<br>General Wildlife, BLM Sensitive Species |

### 7.2 Public Review

#### *State-Wide Meeting.*

A public hearing is held annually on a State-wide basis regarding the use of motorized vehicles, including helicopters and fixed-wing aircraft, in the management of wild horses. During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of the motorized vehicles. The Ely District Office hosted the State-wide meeting on June 15, 2011; the current gather operation SOPs were reviewed in response to concerns expressed and no changes to the SOPs occurred.

#### *Review of this EA.*

**Comments on this EA will be accepted for a 30-day period ending on September 27, 2011.**

Only those comments received in a timely manner will be considered. Upon conclusion of the 30-day public review period, the BLM will evaluate all comments received and categorize them. The BLM may make revisions to this EA based on *substantive* comments received, which do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EA;
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis;
- Present new information relevant to the analysis;
- Present reasonable alternatives other than those analyzed in the EA; or
- Cause changes or revisions in one or more of the alternatives (BLM 2008).

Interested individuals should mail written comments to the BLM Carson City District Office, 5665 Morgan Mill Rd., Carson City, NV 89701 Attn: Alan Bittner, Sierra Front Field Office Field Manager or send an e-mail to: [flaniganEA2011@blm.gov](mailto:flaniganEA2011@blm.gov). Please note that the only email

comments received through the identified email address will be considered. Comments can also be faxed to: (775) 885-6147 attn: Alan Bittner. If you have any questions on this matter, please contact Alan Bittner, Natural Resources Specialist Supervisor, at: (775) 885-6000.

**NOTE:** New NEPA documents are now posted in a searchable database. The EA and maps have been posted at: [http://www.blm.gov/nv/st/en/fo/carson\\_city\\_field/blm\\_information/nepa.html](http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa.html)

### **7.3 Tribes, Individuals, Organizations or Agencies Consulted**

#### *Tribes*

Pyramid Lake Paiute Tribe  
Reno-Sparks Indian Colony  
Washoe Tribe of California and Nevada

#### *Individuals*

Adams, Pauline  
Barnard, Harmon  
Brooks, Kelly  
Butler, Etta  
Cormack, Ray  
Dahl, Joe  
Downer, Craig C.  
Drews, Michael  
Faria, Gregory A.  
Freeman, Virginia  
Glass, Alana Mae  
Hall, Anne  
Hana, Jo Ann  
Kelly, Betty  
Kirk, Michael  
Kunow, Rebecca  
Lamm, Willis  
Lee, Jimmy  
Martins, Anne  
Matton, Charles  
Matton, Bonnie  
Mendes, Alan  
Molini, William  
Nappe, Tim  
Paine, Ernest  
Reeves, Elaine  
Robinson, Mark  
Royle, Roberta  
Siegel, Steven

Warner, Barbara  
Young, Craig

*Organizations*

American Horse Protection Association  
American Wild Horse Preservation Campaign  
Animal Welfare Institute  
Big Canyon Ranch, Steve Capurro  
Buckhorn Land & Livestock LLC  
D.S. Ranches LLC, Dave Stix  
In Defense of Animals  
JHC Land & Cattle LLC, Ray Callahan  
Nevada Cattlemen's Association  
National Wildlife Federation  
Nevada Grazing Board District N-3  
Sierra Club  
Sustainable Grazing Project  
The Cloud Foundation  
Wild Horse Organized Assistance (WHOA)

*Agencies*

Nevada State Clearinghouse (multiple state and county agencies)  
Washoe County Commissioners

## 8.0 REFERENCES

- Beever, E. A., R. J. Tausch, and W. E. Thogmartin. 2008. *Multi-Scale Responses of Vegetation to Removal of Horse Grazing from Great Basin (USA) Mountain Ranges*. *Plant Ecology* 196:163-184.
- Beever, E. A., and P. F. Brussard. 2000. *Examining Ecological Consequences of Feral Horse Grazing Using Exclosures*. *Western North American Naturalist* 60:236-254.
- Bureau of Land Management (BLM). 1990. *Flanigan Herd Management Area Plan and Environmental Assessment*. EA No. NV-030-89-047. SFFO Files, Carson City, Nevada.
- . 1991. *Granite Peak HMA Monitoring Plan*. SFFO Files, Carson City, Nevada.
- . 1993. *Final Granite Peak Herd Management Area Plan and Capture Plan and Environmental Assessment*. EA No. NV-030-93-033. SFFO Files, Carson City, Nevada.
- . 1995. *Flanigan HMA Monitoring Plan*. SFFO Files, Carson City, Nevada.
- . 1995a. *Dogskin Mountain HMA Monitoring Plan*. SFFO Files, Carson City, Nevada.
- . 1999. *Flanigan Emergency Wild Horse Removal Plan and Environmental Assessment*. EA No. NV-030-99-054. SFFO Files, Carson City, Nevada.
- . 2001. *Consolidated Resource Management Plan, Carson City Field Office*. SFFO Files, Carson City, Nevada.
- . 2005. *Dogskin Mountain Herd Management Area Plan/Capture Plan Update and Environmental Assessment (EA)*. No. NV-030-03—36. SFFO Files, Carson City, Nevada.
- . 2005a. *Strategic Research Plan Wild Horse and Burro Management*. Prepared in collaboration with USGS, Biological Resources Division and Animal Plan Health Inspection Service, Fort Collins, Colorado.
- . 2007. *Flanigan Livestock Grazing Allotment Permit Renewal Environmental Assessment*. EA No. NV-030-07-018. SFFO Files, Carson City, Nevada.
- . 2007a. *Environmental Assessment Antelope Mountain Allotment Grazing Permit Renewal*. EA No. NV-030-07-011. SFFO Files, Carson City, Nevada.
- . 2008. *BLM National Environmental Policy Act Handbook, H-1790-1*. U.S. Department of the Interior, Washington, D.C.

- . 2010. Wild horses and Burros Management Handbook, H-4700-1. U.S. Department of the Interior, Washington, D.C.
- . 2010a. IB No. 2010-110. Memorandum of Understanding Between the Bureau of Land Management and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. August 31, 2010. U.S. Department of the Interior, Bureau of Land Management, Washington, D.C.
- . 2011. IM NV-2011-059. Updated Bureau of Land Management (BLM) Sensitive Species List for Nevada. June 27, 2011. U.S. Department of the Interior, Bureau of Land Management, Nevada State Office, Reno, Nevada.
- Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun. 2000. Guidelines to Manage Sage Grouse Populations and Their Habitats. *Wildlife Society Bulletin* 28(4):967-985.
- Cothran, E. Gus. 2009. Letter dated July 16, 2009. *Effective Population Size to Keep the Rate of Loss of Genetic Variation at One Percent Per Generation*.
- Ganskopp, D. and M. Vavra. 1986. *Habitat Use by Feral Wild horses in the Northern Sagebrush Steppe*. *Journal of Range Management* 39:207-212.
- GBBO (Great Basin Bird Observatory). 2010. Nevada Comprehensive Bird Conservation Plan, version 1.0. Great Basin Bird Observatory, Reno, Nevada.  
[www.gbbo.org/bird\\_conservation\\_plan.html](http://www.gbbo.org/bird_conservation_plan.html)
- Hampson. 2011. Personal communication between Pilar Ziegler and Chris Hampson, Game Biologist, Nevada Department of Wildlife. July 28, 2011.
- Kirkpatrick, J.F., R. Naugle, I.K.M. Lui, J.W Turner Jr., M. Bernoco. 1995. *Effects of Seven Consecutive Years of PZP Contraception on Ovarian Function in Feral Mares*, *Biology of Reproduction Monograph Series 1: Equine Reproduction VI*.
- Klebenow, D. A. 1981. Proceedings of the Wildlife-Livestock Relationships Symposium. Published by Forest, Wildlife and Range Experiment Station, University of Idaho, Moscow, Idaho.
- NDOW (Nevada Department of Wildlife). 2011. GIS maps. Sierra Front FO, CCDO files. Carson City, Nevada.
- Ransom, J.I., Cade B.S., Hobbs H.T. 2010. *Influences of Immunocontraception on Time Budgets, Social Behavior, and Body Condition in Feral Wild horses*. *Applied Animal Behavior Science*.

- Rich, T. D. et al. 2004. *Partners in Flight North American Landbird Conservation Plan*. Cornell Lab of Ornithology. Ithaca, New York.
- Turner Jr., J.W., I.K.M. Lui, Ruthberg, A., J.W. Kirkpatrick. 1997. *Immunocontraception Limits Foal Production in Free Roaming Feral Wild horses in Nevada*. Journal of Wildlife Management.
- U.S. Government Accountability Office (GAO). 2008. *Effective Long-Term Options Needed to Manage Unadoptable Wild horses*. Prepared by the BLM for the U.S. House of Representatives. GAO-09-77.
- U.S. Geological Survey (USGS). 2011. *Reducing Population Growth Rates: Fertility Control in Wild Horse Mares*. Prepared by the Fort Collins Science Center, available on the web at: <http://www.fort.usgs.gov/wildhorsepopulations/contraception.asp>.
- Welch, B. 2005. Big sagebrush: *Yo*. Gen. Tech. Rep. RMRS-GTR-144. Fort Collins, Colorado: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- Wildlife Action Team Plan. 2006. Nevada Wildlife Action Plan, NDOW. Reno, Nevada.
- Zoo Montana. 2000. Wildlife Fertility Control: Fact and Fancy. Zoo Montana Science and Conservation Biology Program. Billings, Montana.

## APPENDIX A

### STANDARD OPERATING PROCEDURES FOR WILD HORSE GATHERS

Gathers would be conducted by utilizing contractors from the Wild Horse Gathers-Western States Contract, or BLM personnel. The following procedures for gathering and handling wild horses would apply whether a contractor or BLM personnel conduct a gather. For helicopter gathers conducted by BLM personnel, gather operations will be conducted in conformance with the Wild Horse Aviation Management Handbook (January 2009).

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

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

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

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

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

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

1. The primary concern of the contractor is the safe and humane handling of all animals gathered. All gather attempts shall incorporate the following:
2. All trap and holding facilities locations must be approved by the Contracting Officer's Representative (COR) and/or the Project Inspector (PI) prior to construction. The Contractor may also be required to change or move trap locations as determined by the

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

3. The rate of movement and distance the animals travel shall not exceed limitations set by the COR who will consider terrain, physical barriers, access limitations, weather, extreme temperature ( high and low), condition of the animals, urgency of the operation (animals facing drought, starvation, fire rehabilitation, etc.) and other factors. In consultation with the contractor the distance the animals travel will account for the different factors listed above and concerns with each HMA.
4. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:
  - a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for wild horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.
  - b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes larger than 2" x 4".
  - c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for wild horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for wild horses. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.
  - d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for wild horses
  - e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking or sliding gates.
5. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.
6. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.

7. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, strays or other animals the COR determines need to be housed in a separate pen from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the gather area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.
8. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. The contractor will supply certified weed free hay if required by State, County, and Federal regulation.
9. An animal that is held at a temporary holding facility through the night is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.
10. It is the responsibility of the Contractor to provide security to prevent loss, injury or death of gathered animals until delivery to final destination.
11. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if animals must be euthanized and provide for the destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.
12. Animals shall be transported to their final destination from temporary holding facilities as quickly as possible after gather unless prior approval is granted by the COR for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless

prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours in any 24 hour period. Animals that are to be released back into the gather area may need to be transported back to the original trap site. This determination will be at the discretion of the COR/PI or Field Office horse specialist.

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

1. Gather attempts may be accomplished by utilizing bait (feed, water, mineral licks) to lure animals into a temporary trap. If this gather method is selected, the following applies:
  - a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.
  - b. All trigger and/or trip gate devices must be approved by the COR/PI prior to gather of animals.
  - c. Traps shall be checked a minimum of once every 10 hours.
2. Gather attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If the contractor selects this method the following applies:
  - a. A minimum of two saddle-wild wild horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one half hour.
  - b. The contractor shall assure that foals shall not be left behind, and orphaned.
3. Gather attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If the contractor, with the approval of the COR/PI, selects this method the following applies:
  - a. Under no circumstances shall animals be tied down for more than one hour.
  - b. The contractor shall assure that foals shall not be left behind, or orphaned.
  - c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

#### **C. Use of Motorized Equipment**

1. All motorized equipment employed in the transportation of gathered animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the

humane transportation of animals. The Contractor shall provide the COR/PI, if requested, with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.

2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that gathered animals are transported without undue risk or injury.
3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have at least two (2) partition gates providing at least three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing at least two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.
4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the COR/PI.
5. Floors of tractor-trailers, stock trailers and loading chutes shall be covered and maintained with wood shavings to prevent the animals from slipping as much as possible during transport.
6. Animals to be loaded and transported in any trailer shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. The following minimum square feet per animal shall be allowed in all trailers:
  - a. 11 square feet per adult horse (1.4 linear foot in an 8 foot wide trailer);
  - b. 8 square feet per adult burro (1.0 linear foot in an 8 foot wide trailer);
  - c. 6 square feet per horse foal (.75 linear foot in an 8 foot wide trailer);
  - d. 4 square feet per burro foal (.50 linear feet in an 8 foot wide trailer).

7. The COR/PI shall consider the condition and size of the animals, weather conditions, distance to be transported, or other factors when planning for the movement of gathered animals. The COR/PI shall provide for any brand and/or inspection services required for the gathered animals.
8. If the COR/PI determines that dust conditions are such that the animals could be endangered during transportation, the Contractor will be instructed to adjust speed.

#### **D. Safety and Communications**

1. The Contractor shall have the means to communicate with the COR/PI and all contractor personnel engaged in the gather of wild horses utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.
  - a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the contracting officer or COR/PI violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.
  - b. The Contractor shall obtain the necessary FCC licenses for the radio system
  - c. All accidents occurring during the performance of any task order shall be immediately reported to the COR/PI.
2. Should the contractor choose to utilize a helicopter the following will apply:
  - a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.
  - b. Fueling operations shall not take place within 1,000 feet of animals.

#### **E. Site Clearances**

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

Prior to setting up a trap or temporary holding facility, BLM will conduct all necessary clearances (archaeological, T&E, etc). All proposed site(s) must be inspected by a government

archaeologist. Once archaeological clearance has been obtained, the trap or temporary holding facility may be set up. Said clearance shall be arranged for by the COR, PI, or other BLM employees.

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

#### **F. Animal Characteristics and Behavior**

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

#### **G. Public Participation**

Opportunities for public viewing (i.e. media, interested public) of gather operations will be made available to the extent possible; however, the primary considerations will be to protect the health, safety and welfare of the animals being gathered and the personnel involved. The public must adhere to guidance from the on-site BLM representative. It is BLM policy that the public will not be allowed to come into direct contact with wild horses or burros being held in BLM facilities. Only authorized BLM personnel or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at any time or for any reason during BLM operations.

#### **H. Responsibility and Lines of Communication**

*Contracting Officer's Representative/Project Inspector*

John Axtell, Wild Horse and Burro Specialist, Carson City District Office

Alan Shepherd, Wild Horse & Burro Program Lead, Nevada State Office

The CORs and the PIs have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Supervisory Natural Resource Specialists and the Field Managers will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office, and BLM Holding Facility offices. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

All publicity, formal public contact and inquiries will be handled through the Field Manager and/or the Supervisory Natural Resource Specialist and Field Office Public Affairs. These individuals will be the primary contact and will coordinate with the COR/PI on any inquiries.

The COR will coordinate with the contractor and the BLM Corrals to ensure animals are being transported from the gather site in a safe and humane manner and are arriving in good condition.

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

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

## **APPENDIX B**

### **PUBLIC OBSERVATION PROTOCOLS**

The BLM recognizes and respects the right of interested members of the public and the press to observe the Flanigan, Dogskin Mountain, and Granite Peak wild horse gather. At the same time, BLM must ensure the health and safety of the public, BLM's employees and contractors, and America's wild horses. Accordingly, BLM developed these rules to maximize the opportunity for reasonable public access to the gather while ensuring that BLM's health and safety responsibilities are fulfilled. Failure to maintain safe distances from operations at the gather and temporary holding sites could result in members of the public inadvertently getting in the path of the wild horses or gather personnel, thereby placing themselves and others at risk, or causing stress and potential injury to the wild horses and burros.

The BLM and the contractor's helicopter pilot must comply with 14 CFR Part 91 of the Federal Aviation Regulations, which determines the minimum safe altitudes and distance people must be from the aircraft. To be in compliance with these regulations, the viewing location at the gather site and holding corrals must be approximately 500 feet or more from the operating location of the helicopter at all times. The viewing locations may vary depending on topography, terrain and other factors.

#### **General Daily Protocol**

- A Wild Horse Gather Info Phone Line will be set up prior to the gather so the public can call for daily updates on gather information and statistics. Visitors are strongly encouraged to check the phone line the evening before they plan to attend the gather to confirm the gather and their tour of it is indeed taking place the next day as scheduled (weather, mechanical issues or other things may affect this) and to confirm the meeting location.
- Visitors must direct their questions/comments to either their designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities - professional and respectful behavior is expected of all. BLM may make the BLM staff available during down times for a Q&A. However, the contractor and its staff will not be available to answer questions or interact with visitors.
- Observers must provide their own four-wheel drive high clearance vehicle, appropriate shoes, winter clothing, food and water. Observers are prohibited from riding in government and contractor vehicles and equipment.
- Gather operations may be suspended if bad weather conditions create unsafe flying conditions.
- BLM will establish one or more observation areas, in the immediate area of the gather and holding sites, to which individuals will be directed. These areas will be placed so as

to maximize the opportunity for public observation while providing for a safe and effective horse gather. The utilization of such observation areas is necessary due to the use and presence of heavy equipment and aircraft in the gather operation and the critical need to allow BLM personnel and contractors to fully focus on attending to the needs of the wild horses and burros while maintaining a safe environment for all involved. In addition, observation areas will be sited so as to protect the wild horses and burros from being spooked, startled or impacted in a manner that results in increased stress.

- BLM will delineate observation areas with yellow caution tape (or a similar type of tape or ribbon).
- Visitors will be assigned to a specific BLM representative and must stay with that person at all times.
- Visitors are **NOT** permitted to walk around the gather site or temporary holding facility unaccompanied by their BLM representative.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- When BLM is using a helicopter or other heavy equipment in close proximity to a designated observation area, members of the public may be asked to stay by their vehicle for some time before being directed to an observation area once the use of the helicopter or the heavy machinery is complete.
- When given the signal that the helicopter is close to the gather site bringing wild horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the wild horses are guided into the corral.
- Individuals attempting to move outside a designated observation area will be requested to move back to the designated area or to leave the site. Failure to do so may result in citation or arrest. It is important to stay within the designated observation area to safely observe the wild horse gather.
- 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 from participating in any subsequent observation days.
- *BLM reserves the right to alter these rules based on changes in circumstances that may pose a risk to health, public safety or the safety of wild horses (such as weather, lightning, wildfire, etc.).*

**Guided Observation Day-Specific Protocol**

A guided 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. On this day, 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.

## APPENDIX C

### STANDARD OPERATING PROCEDURES FOR USE OF PZP-22

#### **22-month time-release pelleted Porcine Zona Pellucida (PZP) vaccine:**

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

1. PZP-22 vaccine would be administered only by trained BLM personnel or collaborating research partners.
2. The fertility control drug is administered with two separate injections: (1) a liquid dose of PZP-22 is administered using an 18-gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14-gauge needle. These are delivered using a modified syringe and jabstick to inject the pellets into the gluteal muscles of the mares being returned to the range. The pellets are designed to release PZP-22 over time similar to a time-release cold capsule.
3. Mares that have never been treated would receive 0.5 cc of PZP-22 vaccine emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA) and loaded into darts at the time a decision has been made to dart a specific mare. Mares identified for re-treatment receive 0.5 cc of the PZP-22 vaccine emulsified with 0.5 cc of Freund's Incomplete Adjuvant (FIA).
4. Delivery of the vaccine would be by intramuscular injection into the gluteal muscles while the mare is restrained in a working chute. With each injection, the liquid or pellets would be injected into the left hind quarters of the mare, above the imaginary line that connects the point of the hip (hook bone) and the point of the buttocks (pin bone).
5. In the future, the vaccine may be administered remotely using an approved long range darting protocol and delivery system if or when that technology is developed.
6. All treated mares will be freeze-marked on the hip or neck HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

#### **Monitoring and Tracking of Treatments:**

1. At a minimum, estimation of population growth rates using helicopter or fixed-wing surveys will be conducted before any subsequent gather. During these surveys it is not necessary to identify which foals were born to which mares; only an estimate of population growth is needed (i.e. # of foals to # of adults).
2. Population growth rates of herds selected for intensive monitoring will be estimated every year post-treatment using helicopter or fixed-wing surveys. During these surveys it is not necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of adults). If, during routine HMA field monitoring (on-the-ground), data describing mare to foal ratios can be collected, these data should also be shared with the NPO for possible analysis by the USGS.
3. A PZP-22 Application Data sheet will be used by field applicators to record all pertinent data relating to identification of the mare (including photographs if mares are not freeze-marked) and date of treatment. Each applicator will submit a PZP-22 Application

Report and accompanying narrative and data sheets will be forwarded to the NSO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.

4. A tracking system will be maintained by SFFO detailing the quantity of PZP-22 issued, the quantity used, disposition of any unused PZP-22, the number of treated mares by HMA, field office, and State along with the freeze-mark(s) applied by HMA and date.

## APPENDIX D

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
WASHINGTON, D.C. 20240  
<http://www.blm.gov>

July 22, 2010

In Reply Refer To:  
4710 (260) P

EMS TRNASMISSION 07/23/2010  
Instruction Memorandum No. 2010-164  
Expires: 09/30/2011

To: All Field Officials (except Alaska)  
From: Assistant Director, Renewable Resources and Planning  
Subject: Public Observation of Wild Horse and Burro Gathers

**Program Area:** Wild Horse and Burro Program

**Purpose:** The purpose of this Instruction Memorandum (IM) is to establish policy for public observation of wild horse and burro (WH&B) gathers.

**Policy/Action:** The Bureau of Land Management's (BLM's) policy is to accommodate public requests to observe a gather primarily through advance appointment, on days and at times scheduled by the authorized officer. Planning for one public observation day per week is suggested.

Specific viewing opportunities will be based on the availability of staff with the necessary expertise to safely and effectively host visitors, as well as other gather-specific considerations (e.g., weather, terrain, road access, landownership). The public should be advised that observation days are tentative and may change due to unforeseen circumstances (e.g., weather, wildfire, trap relocation, equipment repair, etc.). To ensure safety, the number of people allowed per observation day will be determined by the District Manager (DM) and/or Field Office Manager (FM) in consultation with the Contracting Officer's Representative/WH&B Specialist (COR) for the gather.

The DM/FM has the primary responsibility for effectively planning and managing public observation of the gather operation. Advance planning will:

- Ensure that the public have opportunities to safely observe wild horse gathers;
- Minimize the potential for disruption of the gather's execution;
- Maximize the safety of the animals, visitors, and the BLM and contractor personnel;
- Provide for successful management of visitors; and
- Ensure preparedness in the event of unanticipated situations.

The authorized officer will consider the following when planning for public observation of WH&B gather operations. Also see Attachment 1 (Best Practices When Planning for Public Observation at Gathers).

### **A. Safety Requirements**

During WH&B gathers, the safety of the animals, the BLM and contractor personnel, and the public is of paramount importance. Because of the inherent risk involved in working with WH&B, the public will not be allowed inside corrals or pens or be in direct contact with the animals. Viewing opportunities during the gather operation must always be maintained at a safe distance (e.g., when animals are being herded into or worked at the trap or temporary holding facility, including sorting, loading) to assure the safety of the animals, the BLM and contractor personnel, and the public.

Unless an emergency situation exists, the BLM's policy prohibits the transportation of members of the public in Government or Contractor-owned or leased vehicles or equipment. Therefore, observers are responsible for providing their own transportation to and from the gather site and assume all liability for such transportation.

The helicopter/aircraft is the private property of the gather contractor. Due to liability and safety concerns, Bureau policy prohibits observers from riding in or mounting cameras onto the aircraft. Should observers create unsafe flying and gathering conditions, for example, by hiring an aircraft to film or view a gather, the COR, in consultation with the gather contractor, will immediately cease gather operations.

The COR has the authority to stop the gather operation when the public engage in behavior that has the potential to result in harm or injury to the animals, employees, or other members of the public.

### **B. Planning for Public Observation at WH&B Gathers**

During advance planning for public observation at WH&B gathers, the authorized officer should consult with the State External Affairs Chief or appropriate Public Affairs office. An internal communications plan will be developed for every gather (Attachment 2). It may also be helpful to prepare answers to frequently asked questions (Attachment 3).

### **C. Law Enforcement Plan**

A separate Law Enforcement Plan should be developed if the need for law enforcement support is anticipated. The Law Enforcement Plan must be approved in advance by the Special Agent-In-Charge (SAC) or the State Staff Ranger of the State in which the gather is occurring.

#### **D. Temporary Closure to Public Access**

Under the authority of section 303(a) of the Federal Land Management and Policy Act (43 U.S.C. 1733(a)), 43 CFR 8360.0-7, and 43 CFR 8364.1, the authorized officer may temporarily close public lands within all or a portion of the proposed gather area to public access when necessary to protect the health and safety of the animals, the public, contractors and employees. Completion of a site-specific environmental analysis of the environmental impacts associated with the proposed closure and publication of a Federal Register Notice is required.

#### **E. Gather Contract Pre-Work Conference**

- Talk to the contractor about how many members of the public are expected and when. Discuss, and reach mutual agreement, about where best to position the public at the individual trap-sites to allow the gather to be observed, while accomplishing the gather objectives and assuring the humane treatment of the animals and the safety of the BLM and contractor personnel, and public.
- No deviation from the selected viewing location(s) should be made, unless the gather operation is being adversely impacted. The COR will consult with the gather contractor prior to making any changes in the selected viewing locations.
- The BLM's policy prohibits it from ferrying observers in the helicopter or any other mode of conveyance unless an emergency situation exists. Review this policy with the contractor during the pre-work conference.

#### **F. Radio Communication**

- Assure there is effective radio communication between law enforcement personnel, gather COR or project inspectors (PIs), and other BLM staff.
- Identify the radio frequencies to be used.
- Communication with the gather contractor is through the BLM COR or PI, and from the gather contractor to the helicopter pilot. Direct communication between BLM personnel (other than the COR) and the helicopter pilot is not permitted, unless agreed upon by the BLM authorized officer and the contractor in advance, or the pilot is requesting information from the COR.

#### **G. Pre- and Post-Action Gather Briefings**

- Pre-briefings conducted by knowledgeable and experienced BLM staff can be helpful to the public.
- The pre-gather briefing is an opportunity to explain what individuals will see, why the BLM is conducting the gather, how the animals will be handled, etc.
- Post-action briefings may also be helpful in interpreting and explaining what individuals saw, what happened, why certain actions were taken, etc.

#### **H. Summary of Individual Roles and Responsibilities**

##### *1. District and/or Field Office Managers*

DMs and/or FMs are responsible for keeping the State Director and State WH&B Lead fully informed about the gather operation. Included is working with State/local public affairs staff to prepare early alerts if needed. An additional responsibility is determining if a law enforcement presence is needed.

### *2. Public Affairs Staff*

The local district/field office public affairs staff is responsible for working with the COR, DM/FM, other appropriate staff, the State WH&B Program Lead, and the State Office of Communications to implement the communications strategy regarding the gather.

### *3. Law Enforcement*

Develop and execute the law enforcement plan in consultation with District/Field Office Managers, the COR/PI, and the State's Special Agent-In-Charge or State Staff Ranger.

### *4. Contracting Officer's Representative (COR)/Project Inspectors (PIs)*

The COR and the PI's primary responsibility is to administer the contract and manage the gather. A key element of this responsibility is to assure the safe and humane handling of WH&B. The COR is also responsible for working closely with the DM/FM and Public Affairs Staff to develop the communication plan, and for maintaining a line of communication with State, District, and Field Office managers, staff and specialists on the progress of, and any issues related to, the gather operation.

**Timeframe:** This instruction memorandum is effective immediately.

**Budget Impact:** Higher labor costs will be incurred while accommodating increased interest from the public to attend gather events. The budget impacts of unanticipated situations which can occur during WH&B gathers include substantial unplanned overtime and per diem expense. Through advance planning, necessary support staff can be identified (e.g., law enforcement, public affairs, or other BLM staff) and the cost-effectiveness of various options for providing staff support can be evaluated. In situations where public interest in a gather operation is greater than anticipated, the affected state should coordinate with the national program office and headquarters for assistance with personnel and funding.

**Background:** Heightened interest from the public to observe WH&B gathers has occurred. Advance planning for public observation of gather operations can minimize the potential for unanticipated situations to occur during WH&B gathers and assure the safety of the animals, the BLM and contractor personnel, and the public.

**Manual/Handbook Sections Affected:** No change or affect to the BLM manuals or handbooks is required.

**Coordination:** This IM was coordinated among WO-200 and WO-260 staff, State WH&B Program Leads, field WH&B Specialists, public affairs, and law enforcement staff in the field.

**Contact:** Questions concerning this policy should be directed to Susie Stokke in the Washington Office at (202) 912-7262 or Lili Thomas in the National Program Office at (775) 861-6457.

Signed by:  
Bud C. Cribley  
Acting, Assistant Director  
Renewable Resources and Planning

Authenticated by:  
Robert M. Williams  
Division of IRM Governance,WO-560

## APPENDIX E

### WinEquus Modeling Results

#### Flanigan HMA

#### Average Growth Rate in 10 Years (in percent)

|                             | Alternative A | Alternative B | Alternative C |
|-----------------------------|---------------|---------------|---------------|
| Lowest Trial                | -1.2          | 3.6           | 13.5          |
| 10 <sup>th</sup> Percentile | 3.5           | 10.7          | 15.0          |
| 25 <sup>th</sup> Percentile | 5.1           | 12.0          | 16.0          |
| Median Trial                | 6.8           | 14.6          | 17.0          |
| 75 <sup>th</sup> Percentile | 8.9           | 16.7          | 18.3          |
| 90 <sup>th</sup> Percentile | 10.3          | 18.0          | 19.9          |
| Highest Trial               | 13.4          | 19.8          | 21.5          |

#### Population Size in 11 Years\*

| Alternative A               | Minimum | Average | Maximum |
|-----------------------------|---------|---------|---------|
| Lowest Trial                | 61      | 97      | 270     |
| 10 <sup>th</sup> Percentile | 71      | 113     | 278     |
| 25 <sup>th</sup> Percentile | 76      | 120     | 284     |
| Median Trial                | 83      | 124     | 292     |
| 75 <sup>th</sup> Percentile | 86      | 128     | 304     |
| 90 <sup>th</sup> Percentile | 90      | 132     | 326     |
| Highest Trial               | 100     | 138     | 387     |
| Alternative B               | Minimum | Average | Maximum |
| Lowest Trial                | 49      | 91      | 272     |
| 10 <sup>th</sup> Percentile | 74      | 119     | 278     |
| 25 <sup>th</sup> Percentile | 82      | 122     | 283     |
| Median Trial                | 86      | 126     | 292     |
| 75 <sup>th</sup> Percentile | 89      | 130     | 312     |
| 90 <sup>th</sup> Percentile | 92      | 132     | 339     |
| Highest Trial               | 96      | 139     | 384     |
| Alternative C               | Minimum | Average | Maximum |
| Lowest Trial                | 259     | 478     | 809     |
| 10 <sup>th</sup> Percentile | 276     | 607     | 1,139   |
| 25 <sup>th</sup> Percentile | 283     | 650     | 1,258   |
| Median Trial                | 295     | 729     | 1,470   |
| 75 <sup>th</sup> Percentile | 308     | 811     | 1,672   |
| 90 <sup>th</sup> Percentile | 325     | 855     | 1,814   |
| Highest Trial               | 351     | 1010    | 2,288   |

\* 0 to 20+ year old wild horses

**Number of Wild horses Gathered, Removed and Treated in 11 Years\***

| <b>Alternative A</b>        | <b>Gathered</b> | <b>Removed</b> | <b>Treated</b> |
|-----------------------------|-----------------|----------------|----------------|
| Lowest Trial                | 349             | 139            | 48             |
| 10 <sup>th</sup> Percentile | 402             | 152            | 60             |
| 25 <sup>th</sup> Percentile | 425             | 184            | 70             |
| Median Trial                | 440             | 198            | 77             |
| 75 <sup>th</sup> Percentile | 452             | 214            | 86             |
| 90 <sup>th</sup> Percentile | 466             | 225            | 96             |
| Highest Trial               | 525             | 298            | 116            |
| <b>Alternative B</b>        | <b>Gathered</b> | <b>Removed</b> |                |
| Lowest Trial                | 189             | 158            |                |
| 10 <sup>th</sup> Percentile | 272             | 228            |                |
| 25 <sup>th</sup> Percentile | 288             | 244            |                |
| Median Trial                | 310             | 264            |                |
| 75 <sup>th</sup> Percentile | 343             | 294            |                |
| 90 <sup>th</sup> Percentile | 372             | 318            |                |
| Highest Trial               | 422             | 364            |                |

\* 0 to 20+ year old wild horses

**Dogskin Mountain HMA**

**Average Growth Rate in 10 Years (in percent)**

|                             | Alternative A | Alternative C |
|-----------------------------|---------------|---------------|
| Lowest Trial                | -6.1          | 2.4           |
| 10 <sup>th</sup> Percentile | 4.6           | 11.4          |
| 25 <sup>th</sup> Percentile | 8.0           | 13.5          |
| Median Trial                | 11.6          | 15.9          |
| 75 <sup>th</sup> Percentile | 14.7          | 17.8          |
| 90 <sup>th</sup> Percentile | 17.3          | 19.3          |
| Highest Trial               | 21.4          | 24.3          |

**Population Sizes in 11 Years\***

| Alternative A               | Minimum | Average | Maximum |
|-----------------------------|---------|---------|---------|
| Lowest Trial                | 6       | 12      | 22      |
| 10 <sup>th</sup> Percentile | 9       | 16      | 23      |
| 25 <sup>th</sup> Percentile | 10      | 17      | 24      |
| Median Trial                | 12      | 19      | 26      |
| 75 <sup>th</sup> Percentile | 14      | 22      | 30      |
| 90 <sup>th</sup> Percentile | 16      | 24      | 33      |
| Highest Trial               | 22      | 28      | 38      |
| Alternative C               | Minimum | Average | Maximum |
| Lowest Trial                | 18      | 23      | 29      |
| 10 <sup>th</sup> Percentile | 22      | 42      | 76      |
| 25 <sup>th</sup> Percentile | 22      | 48      | 88      |
| Median Trial                | 23      | 54      | 102     |
| 75 <sup>th</sup> Percentile | 25      | 59      | 122     |
| 90 <sup>th</sup> Percentile | 27      | 66      | 146     |
| Highest Trial               | 33      | 93      | 202     |

\* 0 to 20+ year old wild horses

**Number of Wild horses Gathered and Removed in 11 Years\***

| Alternative A               | Gathered | Removed |
|-----------------------------|----------|---------|
| Lowest Trial                | 12       | 8       |
| 10 <sup>th</sup> Percentile | 38       | 21      |
| 25 <sup>th</sup> Percentile | 47       | 26      |
| Median Trial                | 56       | 32      |
| 75 <sup>th</sup> Percentile | 65       | 37      |
| 90 <sup>th</sup> Percentile | 74       | 41      |
| Highest Trial               | 92       | 58      |

\* 0 to 20+ year old wild horses

**Granite Peak HMA**

**Average Growth Rate in 10 Years (in percent)**

|                             | Alternative A | Alternative C |
|-----------------------------|---------------|---------------|
| Lowest Trial                | 2.0           | 7.2           |
| 10 <sup>th</sup> Percentile | 8.1           | 14.1          |
| 25 <sup>th</sup> Percentile | 12.1          | 16.2          |
| Median Trial                | 16.7          | 18.4          |
| 75 <sup>th</sup> Percentile | 20.1          | 21.4          |
| 90 <sup>th</sup> Percentile | 24.1          | 22.5          |
| Highest Trial               | 28.6          | 28.1          |

**Population Sizes in 11 Years\***

| Alternative A               | Minimum | Average | Maximum |
|-----------------------------|---------|---------|---------|
| Lowest Trial                | 5       | 11      | 18      |
| 10 <sup>th</sup> Percentile | 9       | 14      | 19      |
| 25 <sup>th</sup> Percentile | 10      | 15      | 20      |
| Median Trial                | 11      | 15      | 21      |
| 75 <sup>th</sup> Percentile | 12      | 16      | 24      |
| 90 <sup>th</sup> Percentile | 13      | 18      | 26      |
| Highest Trial               | 14      | 22      | 40      |
| Alternative C               | Minimum | Average | Maximum |
| Lowest Trial                | 8       | 16      | 25      |
| 10 <sup>th</sup> Percentile | 11      | 22      | 44      |
| 25 <sup>th</sup> Percentile | 11      | 28      | 52      |
| Median Trial                | 12      | 32      | 65      |
| 75 <sup>th</sup> Percentile | 13      | 38      | 82      |
| 90 <sup>th</sup> Percentile | 14      | 47      | 98      |
| Highest Trial               | 18      | 72      | 171     |

\* 0 to 20+ year old wild horses

**Number of Wild Horses Gathered and Removed in 11 Years\***

| Alternative A               | Gathered | Removed |
|-----------------------------|----------|---------|
| Lowest Trial                | 8        | 7       |
| 10 <sup>th</sup> Percentile | 13       | 8       |
| 25 <sup>th</sup> Percentile | 24       | 17      |
| Median Trial                | 32       | 22      |
| 75 <sup>th</sup> Percentile | 41       | 28      |
| 90 <sup>th</sup> Percentile | 48       | 34      |
| Highest Trial               | 81       | 52      |

\* 0 to 20+ year old wild horses

## APPENDIX F

### BLM Sensitive Species and Migratory Birds That May be Present in the HMAs (BLM 2010a, BLM 2011).

| Common Name                 | Scientific Name                   | Sensitive Species | Migratory Bird |
|-----------------------------|-----------------------------------|-------------------|----------------|
| Big brown bat               | <i>Eptesicus fuscus</i>           | X                 |                |
| Brazilian free-tailed bat   | <i>Tadarida brasiliensis</i>      | X                 |                |
| Bighorn sheep               | <i>Ovis canadensis</i>            | X                 |                |
| Brewer's sparrow            | <i>Spizella breweri</i>           | X                 | X              |
| Burrowing owl               | <i>Athene cunicularia</i>         | X                 | X              |
| California myotis           | <i>Myotis californicus</i>        | X                 |                |
| Dark kangaroo mouse         | <i>Microdipodops megacephalus</i> | X                 |                |
| Ferruginous hawk            | <i>Buteo regalis</i>              | X                 | X              |
| Fringed myotis              | <i>Myotis thysanodes</i>          | X                 |                |
| Golden eagle                | <i>Aquila chrysaetos</i>          | X                 | X              |
| Greater sage-grouse         | <i>Centrocercus urophasianus</i>  | X                 |                |
| Green-tailed towhee         | <i>Pipilo chlorurus</i>           |                   | X              |
| Hoary bat                   | <i>Lasiurus cinereus</i>          | X                 |                |
| Little brown bat            | <i>Myotis lucifugus</i>           | X                 |                |
| Loggerhead shrike           | <i>Lanius ludovicianus</i>        |                   | X              |
| Long-eared myotis           | <i>Myotis evotis</i>              | X                 |                |
| Long-legged myotis          | <i>Myotis volans</i>              | X                 |                |
| Mourning dove               | <i>Zenaida macroura</i>           |                   | X              |
| Northern goshawk            | <i>Accipiter gentilis</i>         | X                 |                |
| Pale kangaroo mouse         | <i>Microdipodops pallidus</i>     | X                 |                |
| Pallid bat                  | <i>Antrozous pallidus</i>         | X                 |                |
| Pinyon jay                  | <i>Gymnorhinus cyanocephalus</i>  | X                 | X              |
| Pygmy rabbit                | <i>Brachylagus idahoensis</i>     | X                 |                |
| Sage thrasher               | <i>Oreoscoptes montanus</i>       | X                 | X              |
| Sage sparrow                | <i>Amphispiza belli</i>           |                   | X              |
| Silver-haired bat           | <i>Lasionycteris noctivagans</i>  | X                 |                |
| Spotted bat                 | <i>Euderma maculatum</i>          | X                 |                |
| Townsend's big-eared bat    | <i>Corynorhinus townsendii</i>    | X                 |                |
| Western red bat             | <i>Lasiurus blossevillii</i>      | X                 |                |
| Western small-footed myotis | <i>Myotis ciliolabrum</i>         | X                 |                |
| Western pipistrelle bat     | <i>Pipistrellus hesperus</i>      | X                 |                |
| Yuma myotis                 | <i>Myotis yumanensis</i>          | X                 |                |