

UNITED STATES DEPARTMENT OF THE INTERIOR
BLM, BOISE DISTRICT
EA # ID-130-2009-EA-3686
Title Page

Applicant (if any): BLM Action	Proposed Action: Four-Mile HMA and Sands Basin HMA Wild Horse Gathers			EA No. ID-130-2009-EA-3686
State: Idaho	Counties: Washington, Gem, Payette, Owyhee	District: Boise	Field Offices: Four Rivers, Owyhee	Authority: NEPA, FLPMA, Taylor Grazing Act, WFRHBA, & 43 CFR Part 4700
Prepared By: FRFO & OFO ID Teams	Title: Four-Mile HMA and Sands Basin HMA Wild Horse Gathers			Report Date: 9/9/2009

LANDS INVOLVED

Allotment	Meridian	Township	Range	Sections	Total Acres in HMA
Willow Ridge - 00005	Boise	See Appendix 3			15,995 – BLM 925 – State 1,114 – Private <i>18,034 – TOTAL</i>
Sands Basin - 00521	Boise	See Appendix 4			9,448 – BLM 886 – State 1,381 – Private <i>11,715 – TOTAL</i>

<u>Consideration of Affected Resources</u>	N/A or Not Present	Applicable or Present, No Impact	Discussed in EA
Air Quality		X	
Areas of Critical Environmental Concern	X		
Cultural Resources			X
Environmental Justice (E.O. 12898)		X	
Farm Lands (prime or unique)	X		
Floodplains	X		
*Migratory Birds			X
Native American Religious Concerns			X
Grazing Management			X
Invasive, Nonnative Species			X
Recreation			X
Wastes, Hazardous or Solid	X		
Threatened or Endangered Species			X

Social and Economic			X
Soils			X
Vegetation			X
Water Quality (Drinking/Ground)			X
Wetlands/Riparian Zones			X
Wild Horses			X
Wild and Scenic Rivers (Eligible)	X		
Wilderness Study Areas	X		
Wildlife/Fisheries			X

*Migratory Birds are included in the Wildlife/Fisheries Section.

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1.0 Introduction

The Bureau of Land Management (BLM) is proposing to remove approximately 206 excess wild horses from the Four-Mile and Sands Basin Herd Management Areas (HMA), beginning on approximately October 6, 2009 in order to achieve a thriving natural ecological balance and ensure a multiple use relationship in the area. The Appropriate Management Level (AML) was established in the Big Willow Allotment Grazing Permit Issuance and Modifications and Associated Range Projects Environmental Assessment # ID-010-00125 (2001) for the Four-Mile HMA using a range of 37-60. The AML was established in the Owyhee Resource Management Plan (ORMP, 1999) for the Sands Basin HMA ranging between 33 and 64.

The last scheduled removal of excess wild horses from the Four-Mile and Sands Basin HMAs was completed in October of 2003: 57 wild horses were gathered and 37 horses were removed. *Porcine zona pellucida* (PZP) was administered to 20 mares that were released on the Four-Mile HMA. On the Sands Basin HMA, 28 wild horses were gathered and 16 horses were removed with 12 returned and 3 treated with PZP.

Current population estimates from a census flight in July of 2009 were 128 wild horses in the Four-Mile HMA and 121 wild horses in the Sands Basin HMA (both HMAs are approximately 3.5 times the low end of AML). This data suggests the average annual population growth rate has averaged 22.8% for the Four-Mile HMA and 25.3% for the Sands Basin HMA since the last gather.

Riparian and upland monitoring data from the Sands Basin HMA indicate resource damage is occurring as a result of the current overpopulation of wild horses. Utilization in riparian areas is heavy. In addition, trampling and streambank damage is evident. Utilization by wild horses of upland vegetation is also heavy. Utilization by wild horses is heavy in the north end of the Four-Mile HMA with trampling and trailing evident in Coonrod and George Way Gulches. For additional information, refer to the Affected Environment.

Analysis of information indicates the current AMLs of 37-60 and 33-64 wild horses, respectively, for the Four-Mile and Sands Basin HMAs is appropriate and that excess wild horses are present and require immediate removal.

1.1 Purpose of and Need for Action

The purpose of the Proposed Action is to remove approximately 206 excess wild horses within the Four-Mile and Sands Basin HMAs. Removal of the excess wild horses is needed to protect the range from deterioration associated with the overpopulation of wild horses as authorized under Section 3(b)(2) of the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA). The Bureau's determination of excess wild horses is based on vegetation and population monitoring in relation to use by wild horses. This data indicates current wild horse population levels are exceeding the two HMA's capacity to sustain wild horse use over the long-term. Resource damage is occurring and is likely to continue to occur without immediate action. By removing excess wild horses, a thriving natural ecological balance between wild horse populations, wildlife, vegetation, and available water would be achieved. As part of the Proposed Action, the

application of fertility control to mares released post-gather would slow the annual growth rate following the gather, allowing vegetation resources time to recover.

1.2 Summary of Proposed Action

The BLM proposes to conduct a wild horse gather in the Four-Mile and Sands Basin HMAs during the fall of 2009. Approximately 234 wild horses (85% of population) would be captured using primarily helicopter drive trapping methods, and approximately 206 wild horses would be removed for adoption. All remaining mares would be given an immunocontraceptive vaccine (approximately 11 mares) and released within the two HMAs.

1.3 Location and Setting

The Four-Mile HMA encompasses 18,034 total acres within the Four Rivers Field Office (FRFO) and is approximately 15 miles north of Emmett, Idaho (Appendix 3). The Sands Basin HMA includes 11,715 total acres within the Owyhee Field Office (OFO) and is approximately ten miles southwest of Marsing, Idaho (Appendix 4).

1.4 Conformance with the Land Use Plan

The Proposed Action for the Four-Mile HMA is in conformance with the Cascade Resource Management Plan (CRMP) dated July of 1988. The CRMP sets the following guidance;

- Wild horses in the Four-Mile HMA would be managed in accordance with the Wild Horse and Burro Act.

The Proposed Action is also in conformance with the Big Willow Allotment Grazing Permit Issuance and Modifications and Associated Range Projects Environmental Assessment # ID-010-00125.

- ...to establish an AML (appropriate management level) for the Four-Mile HMA while maintaining healthy native plant communities, a thriving natural ecological balance and avoiding deterioration of the range and watershed.
- The AML will be set at 60 horses with a range from 37 to 60 head. The annual AUMs allocated for the herd will range from 440 to 740.

The Proposed Action for the Sands Basin HMA is in conformance with the Owyhee RMP (December, 1999).

- Objective WHRS #1 states: “maintain wild and free-roaming horses in the Owyhee Wild Horse Herd Management Areas at appropriate management levels (AML) within a thriving natural ecological balance. Manage three HMAs for a total population ranging from 129 - 254 with an allocation of 2,304 AUMs of forage.” These figures also include the Black Mountain and Hardtrigger HMAs which would not be gathered.
- Management Action #4 states: “manage free-roaming horses as a component of the public lands in a manner that maintains or improves the rangeland ecosystem.”

1.5 Relationship to Statutes, Regulations, and Other Requirements

The Proposed Action would be in accordance with:

The Wild Horse and Burro Act of 1971 (Public Law (PL) 92-195 as amended by PL 94-579 (Federal Land Policy and Management Act (FLPMA) and PL 95-514 (Public Rangelands Improvement Act (PRIA))).

Section 302(b) of FLPMA, which states that all public lands are to be managed “to prevent unnecessary or undue degradation of the lands.”

Title 43 Code of Federal Regulations (CFR) parts 4700 and 4100:

- 1) 43 CFR 4710.3-1 - “Herd Management Areas shall be established for maintenance of wild horse and burro herds.”
- 2) 43 CFR 4720.1 - “Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.”
- 3) 43 CFR 4740 - “Motor Vehicles and Aircraft.”
- 4) 43 CFR 4750 - “Private Maintenance.”
- 5) 43 CFR 4180.2(b) - “Standards and guidelines must provide for conformance with the fundamentals of 4180.1.”

Cultural Resources Laws and Executive Orders

Southwest Idaho is the homeland of two culturally and linguistically related tribes: the Northern Shoshone and the Northern Paiute. In the latter half of the 19th century, reservations were established at Duck Valley on the Nevada/Idaho border west of the Bruneau River. The Shoshone-Paiute Tribes residing on Duck Valley today actively practice their culture and retain aboriginal rights and/or interests in this area. The United States government has a trust responsibility to federally recognized Native American Tribes that covers lands, natural resources, money, or other assets held by the federal government in trust or restricted against alienation for Native American Tribes and Native American individuals. The Shoshone-Paiute Tribes claim aboriginal rights to their traditional homelands as their treaties with the United States, the Boise Valley Treaty of 1864 and the Bruneau Valley Treaty of 1866, which would have extinguished aboriginal title to the lands now federally administered, were never ratified.

The Bureau of Land Management (BLM) is required to consult with Native American tribes to “help assure (1) that federally recognized tribal governments and Native American individuals, whose traditional uses of public land might be affected by a proposed BLM action, will have sufficient opportunity to contribute to the decision, and (2) that the decision maker will give tribal concerns proper consideration” (U.S. Department of the Interior, BLM Manual Handbook H-8120-1). Tribal coordination and consultation responsibilities are implemented under laws and executive orders that are specific to cultural resources which are referred to as “cultural resource authorities,” and under regulations that are not specific which are termed “general authorities.” Cultural resource authorities include: the National Historic Preservation Act of 1966, as amended (NHPA); the Archaeological Resources Protection Act of 1979 (ARPA); and the Native American Graves Protection and Repatriation Act of 1990, as amended (NAGPRA). General authorities include; the American Indian Religious Freedom Act of 1979 (AIRFA); the

National Environmental Policy Act of 1969 (NEPA); the Federal Land Policy and Management Act of 1976 (FLPMA); and Executive Order 13007-Indian Sacred Sites. The proposed action is in compliance with the aforementioned authorities.

The Proposed Action is in conformance with all applicable laws, regulations, and policy.

1.6 Scoping and Development of Issues

Livestock operators within the affected HMAs are concerned about the high numbers of wild horses within the two HMAs and the resource damage that is occurring.

A scoping document was sent to State/County/local government, the tribes, and interested publics on May 27, 2009. Comments were received from Idaho Fish and Game, Animal Welfare Institute, and Michael Lane. All the comments were carefully considered by BLM in developing this environmental assessment. The following issues identified as a result of scoping and were used to analyze the alternatives:

Comment: *The roundup, if it occurs, would be when?*

Response: The gather is scheduled for October 6-13, 2009.

Comment: *The numbers make it look like the herds are at 150% or so of the desired size - is that a safe generalization?*

Response: Please see Section 3.1.1, Wild Horses.

Comment: *When the report talks about Upper Jump Creek having suffered erosion - what have the herds done? Are banks caving off, is vegetation denuded?*

Response: Please see Section 3.5.1, Wetlands/Riparian Zones.

Comment: *Does Sand Basin also see grazing under the allotment system? Roughly how many head of beef?*

Response: Please see Section 3.8.1, Grazing Management.

Comment: *Need to prepare an EA or EIS: Though both the May 27, 2009 cover letter and the document itself both clearly indicate that the BLM is currently in the scoping phase of this planning effort, other language suggests that the BLM may believe that it can analyze the scoping comments and rely on them to complete a final EA. Such a scenario, which would avoid the publication of a Draft EA for public review, is not permitted under the National Environmental Policy Act.*

The BLM, in the May 27 cover letter, states that “after consideration of the comments received, the EA will be finalized, an alternative will be selected, and a “Final Decision in Full Force and Effect” will be issued.” In the actual scoping document, the BLM anticipates completion of the EA on September 30, 2009 (Draft Scoping Notice at 1). In this case, though NEPA does not require scoping on an EA (i.e., scoping, among other functions, is intended to be used to

determine whether an EA or EIS provides the most appropriate level of NEPA review), the BLM, to its credit, has elected to pursue a scoping phase in this planning process. By doing so, however, it does not obviate the need to publish and solicit public comment on a Draft EA. Therefore, the BLM is required to consider those comments received during the scoping process, publish a Draft EA or EIS, solicit public comments on the Draft EA or EIS, carefully consider those comments, and then publish a Finding of No Significant Impact (if an EA is used as the planning device) or a Record of Decision (if an EIS is used as the planning device).

The current scoping document is not sufficient, in regard to the disclosure of information or to the quality of the analysis of environmental impact, to constitute a Draft EA not to mention that it is labeled as a “Scoping Document for EA #ID-130-2009-EA-3686.” The BLM must clarify this matter and, ideally, distribute a letter to those who received/requested the Scoping Document to specify that the BLM will publish and solicit public comment on a Draft EA or Draft EIS on this matter.

Response: As per Idaho State Office (ISO) Instruction Memorandum (IM) #ID-2009-008, “The regulations at 40 CFR 1503.1 require the circulation of a draft EIS, but do not speak to the necessity of a draft EA. The regulations at 40 CFR 1501.4(d) (2) direct that in certain limited circumstances the agency shall make a Finding of No Significant Impact (FONSI) (to which the EA is attached or incorporated by reference) available for public review for 30 days before the agency makes its final determination whether to prepare an EIS. The circumstances are:

1. The proposed action is, or is closely similar to, one which normally requires preparation of an EIS.
2. The nature of the proposed action is one without precedent.

Until recently, the U.S. Court of Appeals for the Ninth Circuit case law did not directly address the circulation of a draft EA. In *Bering Strait Citizens v. U.S. Army Corps of Engineers* (9th Cir., January 3, 2008, No. 07-35506), the plaintiffs argued that the Corps was required to circulate the draft EA in order to comply with Council on Environmental Quality (CEQ) regulations to ‘involve environmental agencies, applicants, and the public, to the extent practicable,’ in preparation of an EA (40 CFR 1501.4(b)). In its opinion, the court stressed that the CEQ ‘regulations governing public involvement in the preparation of EAs are general in approach,’ and the court concluded that circulation of a draft EA is not required in every case. ‘Our conclusion is consistent with the views of other circuits, which uniformly have not insisted on the circulation of a draft EA.’

The court then addressed the level of public disclosure required under NEPA before the issuance of a final EA. The court concluded that, ‘An agency, when preparing an EA, must provide the public with sufficient environmental information, considered in the totality of circumstances, to permit members of the public to weigh in with their views and thus inform the agency decision-making process.’ In this case, the court found that the Corps had passed this test by disseminating information about the project widely throughout the community and environmental information was reasonably and thoroughly made available to the public.

The Department of the Interior (DOI) recently amended its regulations by adding a new part to codify its procedures for implementing NEPA (Federal Register, Vol. 73, No. 200, October 15, 2008). The regulations at 43 CFR 46.305 address public involvement in the environmental assessment process and state:

‘Publication of a “draft” environmental assessment is not required. Bureaus may seek comments on an environmental assessment if they determine it to be appropriate, such as when the level of public interest or the uncertainty of effects warrants, and may revise the environmental assessments based on comments received without the need of initiating another comment period.’

As noted in the BLM Handbook H-1790-1, 8.2, there must be some form of public involvement in the preparation of all EAs. Public involvement may include external scoping, public notification before and during preparation of the EA, public meetings, or public review and comment on a completed EA and unsigned FONSI. The type of public involvement is at the discretion of the manager. In Idaho BLM, public circulation of ‘pre-decisional’ EAs occurs at the discretion of the manager. In some cases, the ‘pre-decisional’ EA constitutes the first general public exposure to the proposal. Postponing public involvement and comment until after an EA is prepared is inefficient. For example, if pertinent issues or concerns are first raised after a ‘pre-decisional’ EA is completed, then substantial revisions and analysis may be necessary before the agency can proceed towards a decision. In summary, not only is the ‘pre-decisional’ or ‘draft’ EA not required by CEQ or DOI regulations, or the 9th Circuit Court, relying on it may be counterproductive to obtaining timely public input in an efficient and proactive manner.

Policy & Action: Idaho BLM will no longer use pre-decisional EAs as a means to seek public input unless the manager determines it appropriate given the regulations; rather, we will emphasize and rely on more overt and systematic compliance with the CEQ regulations at 40 CFR 1501.7 which state, “There **shall be an early and open process** for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action” (emphasis added). Although scoping is a process generally associated with preparation of an Environmental Impact Statement (EIS), the CEQ regulations at 40 CFR 1501.4(b) state that an agency ‘shall involve environmental agencies, applicants, and the public, to the extent practicable’ in preparing EAs. The same scoping process and products required for EISs may be applied to EAs, depending on the complexity of the proposed action, alternatives, and issues.

The CEQ regulations at 40 CFR 1501.7 require the following in an agency’s scoping process:

1. Invite the participation of affected federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons, including those who might not be in accord with the action on environmental grounds...
2. Determine the scope (§1508.25) and the significant issues to be analyzed in depth...
3. Identify, and eliminate from detailed study, the issues which are not significant or which have been covered by prior environmental review...
4. Allocate assignments for preparation of the environmental impact statement (or EA)...

5. Indicate any public environmental assessments or other environmental impact statements which are being or will be prepared that are related to but are not a part of the scope of analysis under consideration.
6. Identify other environmental review and consultation requirements.
7. Indicate the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decision-making schedule."

Comment: *Disclosure of vegetation utilization data: Based on information contained in the Scoping Document, the BLM's proposal to gather wild horses from the Four-Miles and Sands Basin HMA is based nearly entirely on alleged adverse impact of the wild horse population on native vegetation, rangeland conditions, and perhaps riparian area health. Some of the vegetation utilization data is summarized in the Scoping Document. While this summary is useful, far more information must be disclosed in any Draft EA or EIS. Specifically, the BLM must expand its disclosure of rangeland condition/vegetation utilization data to include:*

- *Identification of the specific areas where BLM field technicians collected rangeland condition/vegetation utilization data within the HMAs under review;*
- *The timing of such rangeland utilization surveys (fall, winter, spring, summer);*
- *The methodologies used to assess rangeland condition/vegetation utilization;*
- *Precipitation amounts and timing of precipitation events (by month if possible) from data collected from U.S. Geological Service or other federal/state entity that operated meteorological equipment as close to the Four-Mile and Sands Basin HMAs as is available;*
- *The AUMs and stocking rates for cattle and other livestock on the Four-Mile and Sands Basin HMAs, permitted versus actual use levels, and seasonal or temporal parameters on use (i.e., year-round grazing, rotational grazing, seasonal grazing);*
- *Assessment of the availability of water (ephemeral and permanent) for the wild horses and disclosure of any water sources within the HMAs that the wild horses can't access due to fences excluding them and/or conflicts with domestic livestock;*
- *Disclosure of any data, if available, on the assessment of riparian health within the HMAs and whether any perceived damage is caused by wild horses, cattle, or other domestic livestock;*
- *Assessment of the methodologies used, including any assumptions made, to attribute rangeland, vegetation, or riparian area damage to wild horses (i.e., how does the BLM determine that damage is attributable to wild horses versus cattle or domestic livestock).*

In disclosing this information, it is not sufficient to refer to other documents, including Resource Management Plans containing such data or descriptions unless any and all referenced documents are made available, in their entirety, on the Idaho State BLM office website and/or the Owyhee Field Office website. Preferably, however, the BLM will incorporate into the text of the Draft EA or Draft EIS or, at a minimum, append to the Draft EA or Draft EIS, all of the information referred to above.

Response: See Sections 3.1 – 3.11.

Comment: *Thriving Natural Ecological Balance and other relevant standards pertaining to the management of wild horses: The Wild and Free-Roaming Horses and Burros Act specifies that a “thriving natural ecological balance” must be maintained between wild horses/burros and wildlife. Domestic livestock, including cattle, are not part of the “thriving natural ecological balance” equation in that their forage consumption needs are not intended to be considered when determining what numbers of wild horses/burros and wildlife can share the range while maintaining the “thriving natural ecological balance.” Cattle and other livestock can be grazed within HMAs and Herd Areas but their use must not disturb the “thriving natural ecological balance” and it should not diminish, intentionally or unintentionally, use of these areas by wild horses/burros or wildlife. To the extent wild horse/burro Appropriate Management Levels are set lower to accommodate cattle use of the HMAs and HAs, they should be amended and increased to reflect whatever balance is necessary between numbers of wild horses/burros and wildlife only to achieve a “thriving natural ecological balance.”*

If the BLM does not interpret the WFHBA as described here, it must summarize its understanding and interpretation of the Act. This should not be limited to its interpretation of “thriving natural ecological balance” and its relevance to cattle but could – and should – include its interpretation of the entire Act, its implementing regulations, and any BLM policies that pertain to the management of wild horses/burros.

Response: The BLM understands that “The Secretary shall manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands” as per the Wild and Free-Roaming Horses and Burros Act of 1971. In accordance with 43 CFR 4700.0-6 (a) “Wild horses and burros shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat,” and (b) Wild horses and burros shall be considered comparably with other resource values in the formulation of land use plans.”

The AML for the Four-Mile HMA was established through the Big Willow Allotment Grazing Permit Issuance and Modifications and Associated Range Projects Environmental Assessment # ID-010-00125 (USDI 2001). The AML for the Sands Basin HMA was established through the 1999 Owyhee RMP (USDI 1999). AMLs were established based on monitoring data and following a thorough public review. There is a similar dietary overlap between wild horses and livestock. Therefore, Animal Unit Months (AUMs) were allocated to wild horses on a proportional basis with other uses of the allotments (wildlife, livestock) using the best available utilization data collected within the allotments (Table 3).

Table 1. Wild Horse Forage Allocations

Herd Management Area	Allocation (AUM)	AML Range
Four-Mile	440 – 740	37 – 60
Sands Basin	588	33 – 64

As stated in 1333(b)(2)(iv) of the Wild Free-Roaming Horses and Burros Act of 1971, “such additional information as becomes available to him from time to time, including that information developed in the research study mandated by this section, or in the absence of the information contained in (i-iv) above on the basis of all information currently available to him, that an

overpopulation exists on a given area of the public lands and that action is necessary to remove excess animals, he shall immediately remove excess animals from the range so as to achieve appropriate management levels. Such action shall be taken, in the following order and priority, until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation.”

Comment: *Wild horse census data and methodology: The Scoping Document provides information on the estimated number of horses within both the Four-Miles and Sands Basin HMAs. For the Four-Mile HMA the BLM estimates the wild horse population to number 117 horses based on a June 2008 census. This equates, according to the BLM, to a Population Gain Rate of 22.8%. Scoping Document at 2. For the Sands Basin HMA the BLM estimates the wild horse population to number 105 horses based on a June 2008 census. This equates, according to the BLM, to a Population Gain Rate since 2003 of 25.3%. Scoping Document at 2. In addition to disclosing these estimates, the BLM must disclose the methodologies it uses to count horses within these HMAs including any assumptions inherent to the use of such methodologies. In addition, the BLM must disclose wild horse population estimates for these HMAs collected in the past and the counting methodologies used for those counts. This information is essential for the public to evaluate the accuracy and reliability of the counting methodologies used, to assess whether the BLM has properly applied the methodology during its counts, and to determine if any assumptions inherent to the methodology have or have not been met.*

Response: See Table 6 for post-gather results and estimated wild horse numbers since the 2003 gather. These estimates and census results were gathered from helicopter with BLM personnel methodically flying in a grid pattern counting the number of adults and foals within each HMA.

Comment: *Condition of the wild horses: In the Scoping Document, the BLM defines “ecological carrying capacity” to mean the “level at which density-dependent population regulatory mechanisms would take effect within the herd.” Scoping Document at 5. While the BLM provides vegetation utilization data in the Scoping Document alleging that wild horses are over utilizing certain portions of the HMAs, the BLM discloses no information about the condition of the horses. It could be that these horses are not routinely observed by BLM officials and that, therefore, their current condition is not known and cannot be assessed until they are gathered if a gather is approved. Alternatively, if the BLM occasionally checks on these horses either via aerial or ground surveys, if they have received any reports from other uses of these lands, and or if the public has provided reports on the condition of these horses, that information must be disclosed in the Draft EA or Draft EIS. If the number of wild horses is drastically in excess of the ecological carrying capacity of the HMAs it would be expected that their condition is declining, mortality rates may be increasing, and productivity may be decreasing which, in time, would help to theoretically stabilize the population. Any such stability, if ever achieved, would likely be short-lived due to the dynamic nature of ecosystems and the constantly changing factors, primarily climate-related factors that affect the ability of ecosystems to support wildlife, wild horses, and domestic livestock, including cattle. AWI notes that in the event of ecosystem change triggered by a change in climatic parameters (i.e., increase in average ambient temperature, reduction in precipitation, changes in temporal precipitation patterns) resulting in a reduction in primary production, domestic livestock, including cattle, should be the first to be removed from the range followed by wild horses/burros. Considering the unique protections*

afforded wild horses/burros under the WFHBA and, particularly, the mandate to maintain a thriving natural ecological balance between wild horses and wildlife, the clear intent of Congress, while recognizing the multiple-use mandate of most BLM lands, was to give preference to wild horses over livestock on lands occupied by both.

Response: The wild horses in the Four-Mile and Sands Basin HMAs are regularly observed by BLM personnel. The current condition of the horses within these HMAs is good. No horses within these HMAs have had rib showing or have been any lower than a four on the “Henneke Body Condition Score” since the last gather in October of 2003. We believe it is appropriate to gather when the horses are healthy.

The “ecological carrying capacity” of the HMAs has not been reached and production rates have not appeared to decrease, nor have mortality rates appeared to increase. It is not the BLM’s intention to allow “ecological carrying capacity” to “stabilize” wild horse numbers regardless of how “short-lived” it may be. The increasingly high wild horse numbers above AML have shown heavy utilization on upland and riparian areas that are causing resource damage. Grazing permittees have voluntarily taken non-use on a portion of the Sands Basin Allotment grazing permit due to existing resource conditions. During, 2006-2008, actual use reports have shown the non-use of 105, 158, and 101 AUMs respectively. The actual use report for 2009 has not been submitted due to scheduled fall livestock use.

Comment: *Consideration of a reasonable range of alternatives: NEPA requires federal agencies to consider a reasonable range of alternatives to their proposed action. While a no-action alternative must always be analyzed so that the environmental impacts of action alternatives can be compared to the impacts associated with taking no action, any action alternatives evaluated must be reasonable, rigorously explored and objectively evaluated, include reasonable alternatives not within the jurisdiction of the lead agency. 40 CFR 1502.14(a) and (c).*

The three action alternatives described in the Scoping Document do not satisfy the NEPA requirements to assess a range of reasonable alternatives since the differences between the alternatives are solely based on the proposed number of horses to remove from the range and whether fertility control will be administered to mares returned to the range post gather. While simply changing numbers and adding or removing fertility control may give the appearance of distinct alternatives, this does not and should not satisfy NEPA requirements for the development and consideration of alternatives. Instead, the BLM should include alternatives that adjust the wild horse AML to permit a larger number of horses to remain on the range (even if this requires reducing domestic livestock stocking rates), acquiring additional private lands from willing sellers in the area and/or entering into conservation easements with private landholders to increase protections afforded to wild horses on those lands, consider translocating one or multiple bands of horses from the Four-Mile or Sands Basin HMAs together to some of the 19 million plus acres of land occupied by wild horses/burros when the 1971 WFHBA was promulgated; lands that the BLM has illegally closed to use by wild horses/burros. While these are just some examples of potential alternatives that the BLM should consider in its Draft EA or Draft EIS, they do not represent the entire scope of alternative options.

Response: You have identified several other alternatives in your comments above; however, these alternatives are outside the scope of the EA and the purpose and need of the proposed action.

In your first suggested alternative you state that “*the BLM should include alternatives that adjust the wild horse AML to permit a larger number of horses to remain on the range (even if this requires reducing domestic livestock stocking rates).*” Appropriate Management Levels have been established for both the Four Mile and the Sands Basin HMA’s. Both these HMAs are currently having resource issues and have exceeded the Appropriate Management Levels. Adjusting the AML to increase the number of wild horses above the current established AML would not be consistent with the CRMP and the ORMP and would require a Land Use Plan amendment. Adjusting AML to permit larger numbers of horses by reducing domestic livestock rates would not allow the BLM to be consistent with 43 CFR 4770, which in part requires the agency to implement laws relating to the protection, management and control of wild horses and burros as an integral part of the natural system of public lands under the principle of multiple use; Current monitoring data identified in the EA indicates that resource damage and issues exist in both HMAs and that wild horse numbers are currently in excess of AML. In part, 43 CFR 4720.1 requires the agency that upon current information and a determination by the authorized officer that excess of wild horses or burros exist, the authorized officer shall remove the excess animals immediately Through the Idaho Standards and Guidelines process, Boise District BLM manages the public lands within the Four Mile and Sands Basin HMAs for healthy ecosystems that will provide for all multiple uses of the public lands.

Your second suggested alternative is also outside the scope of this analysis. Acquiring private land constitutes a realty action that is not consistent with the purpose and need of this EA.

In your third suggested alternative, you stated “*translocating one or multiple bands of horses from the Four-Mile or Sands Basin HMAs together to some of the 19 million plus acres of land occupied by wild horses/burros when the 1971 WFHBA was promulgated; lands that the BLM has illegally closed to use by wild horses/burros*”

BLM is unclear on what specific lands you are referring to and if these lands fall in the two specific HMAs. The purpose and need for this action is to remove excess wild horses from two HMAs (Four Mile and Sands Basin) within the Boise District Office that have documented resource issues. The BLM is required to follow current policy, regulations, the Wild Horse and Burro Act of 1971 (Public Law (PL) 92-195 as amended by PL 94-579, FLPMA, and PL 95-514 [Public Rangelands Improvement (PRIA)]).

The BLM is also responsible for ensuring the health of the public land resources in these two HMAs are maintained and/or improved and these public lands in the HMAs are managed for multiple use. The BLM has met these requirements with the analysis of the four alternatives identified in this EA, Alternative 1 (No Action), Alternative 2 (Proposed Action – low end of AML with fertility control), Alternative 3 (mid-point of AML with no fertility control), and Alternative 4 (low end of AML with no fertility control). With the current resource damage occurring and the very high numbers of wild horses within the HMAs, the BLM believes that a reasonable range of alternatives has been analyzed.

Comment: *Do not predetermine outcome of NEPA process: The Scoping Document specifies that the gather of wild horses in the Four-Mile and Sands Basin HMAs is scheduled for November 1 through November 9, 2009. While AWI recognizes that the BLM plans such gathers in advance, the scheduling of gathers for specific dates raises serious concerns about whether any NEPA planning process is effectively a make-work exercise designed to substantiate a predetermined decision. In this case, since the gather is already scheduled, there is the distinct perception that a decision to proceed with the gather has already been made and that this scoping process and any subsequent NEPA process will not provide a meaningful opportunity for public input. The only way the BLM can avoid this perception both in this case and when it is considering future gathers of wild horses/burros is to initiate its planning efforts earlier so that said efforts can be completed before any gather is scheduled. This will create a scenario where any suggestion that the decision is tainted or influenced by a pre-existing gather schedule cannot be substantiated. This does not, of course, mean that the decision may not still have been predetermined but at least it would give the appearance of an objective decision-making process consistent with the requirements of NEPA.*

Response: The BLM did not predetermine the outcome of the NEPA process. It is very important to identify the proposed dates that the gather would occur on. The proposed date is very important not only for scheduling and planning purposes, but for the analysis as well. The timing of the gather is important for the analysis of soils, i.e. how any disturbances of gathering/not gathering affect soils, if the gather is during hunting season and how it would affect recreation. It is also important to know the age most foals would be at gather time, such as an early summer (i.e. July) gather may have several young foals on the ground, as well as possible pregnant mares at that time of the year.

Comment: *The Four-Mile Herd Management Area (HMA) provides important critical winter range habitat for mule deer, winter range for elk, and habitat for sage-grouse. Reducing horse stocking levels will likely protect and enhance winter range habitat for mule deer and elk, and will likely protect and enhance habitat for sage-grouse, one of the stated purposes of the Proposed Action in the draft EA.*

Response: The comment has been noted.

Comment: *The Sands Basin HMA provides habitat for mule deer, pronghorn antelope, upland game species such as chukar, and nongame species. Reducing horse stocking levels will likely reduce pressure on the existing perennial forbs and grasses, important habitat components for the above mentioned wildlife species.*

Response: The comment has been noted.

Comment: *The Department has concerns regarding the effectiveness of fertility control measures proposed in the draft EA. The difference between Alternative's 2 and 4 is that in Alternative 2, the BLM would implement fertility control to all mares captured and released back into the wild. Under Alternative 2, it's anticipated that 11 mares would receive fertility control in both HMAs. By 2012, fertility control (Alternative 2) is projected to lead to a decrease of three animals in each HMA as opposed to not implementing fertility control (Alternative 4).*

Given this small difference between the projected horse populations in Alternative's 2 and 4, the Department is interested in whether additional measures can be incorporated to increase fertility control effectiveness.

Response: See Section 3.1.2.2, Environmental Consequences - Wild Horses, Wild Horse Populations/Appropriate Management Levels and Appendix 7.

Comment: *Due to the increasing costs of maintaining horses, the public will likely continue illegal release of feral horses onto public lands. An additional concern the Department would like to see addressed in the EA is how the BLM proposes to define and manage horses that have been illegally released into areas with protected "wild" horses?*

Response: The unauthorized release of domestic horses on the public lands is a prohibited act and is viewed by BLM as unauthorized grazing use by livestock. BLM has authority under 43 CFR Subpart 4150 to take action; however, the BLM typically works in cooperation with the State Brand Inspector and local Sheriff to address this issue. As per Idaho Code Title 25, Chapter 23, "When a sheriff or brand inspector finds stray livestock or stray livestock are reported to him, he shall attempt to locate the owner and to notify the owner where the livestock may be found. If the owner refuses to, or does not take possession of the livestock within five (5) days after being notified of the location of the livestock, or if the owner is unknown or cannot be located, the sheriff or brand inspector shall seize the livestock or have some person hold and care for the livestock on behalf of the sheriff or brand inspector and the sheriff or brand inspector shall proceed to sell the livestock at a local public livestock market as provided for by law to the highest bidder for cash, after giving at least fifteen (15) days public notice of the sale."

2.0 Description of the Alternatives

2.1 Alternative Development Process

The Proposed Action and alternatives represent a range of reasonable alternatives based on issues and goals identified in land management documents. Please refer to Appendix 9 to see the Gather Policy and Selective Removal Criteria, per IM 2005-206 (USDI 2005).

This document will analyze four alternatives, including the Proposed Action and a No Action Alternative.

2.2 Alternatives Considered But Not Analyzed in Detail

An alternative was considered with no gelding of male horses. This alternative was not analyzed in detail due to Washington Office (WO) IM # 2009-063, Gelding of Wild Horses and Burros and Gelding Vouchers, which states, "geld all horses removed from the range or that are born in wild horse corral facilities once the horse is weanling or older." This alternative would be against BLM policy and guidance.

2.3 Description of Proposed Action and Alternatives

2.3.1 Alternative 1 – No Action

A wild horse gather would not take place in the HMAs. There would be no active management to control the size of these populations; therefore, the current populations would continue to increase at a rate of approximately 20% - 25% annually.

Non-compliance with 43 CFR 4700.0-6

The No Action Alternative does not comply with the regulatory requirements of 43 CFR 4700.0-6(a), which states “Wild horses and burros shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.”

Furthermore, the No Action is contrary to Section 3(b)(2) of the WFRHBA which requires the authorized officer to immediately remove excess wild horses to prevent further deterioration of the range associated with an overpopulation of wild horses. This action does not allow for managing wild horses in balance with other uses nor within the productive capacity of wild horse habitat. A No Action is also not in conformance with the ORMP, 1999 – Wild Horse Management Objective: WHRS 1 (page 21).

2.3.2 Actions Common to Alternatives 2-4

- The gather operation would be conducted in accordance with the Standard Operating Procedures (SOPs) in the National Gather Contract (Appendix 2).
- The helicopter drive trap method and helicopter assisted roping from horseback would be the primary gather methods used. To the extent possible, gather sites (traps) would be located in previously disturbed areas.
- A licensed veterinarian will be available to examine animals and make recommendations to BLM for the care and treatment of wild horses. Decisions to humanely euthanize animals in field situations will be made in conformance with BLM Policy (WO IM #2009-041).
- Animals will be removed using a selective removal strategy (age, sex, color, conformation).
- Approximately 28 animals would be released back to the range following the gather. Post-gather, every effort would be made to return released animals to the general area from which they were gathered.
- Data about sex, age, and color; herd health (pregnancy/parasite loading/physical condition/etc) would also be collected.
- Animals removed from the range would be offered for adoption or sale to individuals who can provide good homes, or placed in long-term holding pastures out of state.

2.3.3 Alternative 2 – Proposed Action - Removal to Lower Limit of AML with Fertility Control

Approximately 85% of the population or 234 wild horses would be gathered and captured, in accordance with Appendix 2 and 9, from the two HMAs in the fall of 2009 (Table 2). Of these, approximately 206 wild horses would be removed and the remaining animals would be released back to the HMAs. Immunocontraceptive research (application of *Porcine zona pellucidae* or PZP) would be conducted on all mares that would be returned to the public lands (approximately 8-15 mares).

Table 2. Alternative 2 - Removal to lower limit of AML with fertility control.

HMA	Anticipated #’s Prior to Gather	# Removed	# Returned	Total # Captured	Wild Horses Remaining
Four-Mile	144	107	15	122	37
Sands Basin	132	99	13	112	33
TOTAL	276	206	28	234	70

Treated mares would be identified and freeze marked with an Idaho State approved identification (such as a letter or a number) on the left hip to enable positive identification for future tracking and data collection of the animals. Some mares may have been treated in the past and may have a hip brand and may need an additional number to identify treatment. Fertility control actions would be in accordance with IM #2009-090 and Standard Operating Procedures for Fertility Control Treatment (Appendix 10).

2.3.4 Alternative 3 – Removal to Mid-Point of AML without Fertility Control

Approximately 232 wild horses would be captured within the two HMAs and approximately 178 wild horses would be removed (Table 4). The additional 30% (or more) of the animals that would be captured would allow adherence to the gather policy; wild horses 6 to 15 years of age should be removed last and only if management goals and objectives for the herd cannot be achieved through the removal of younger animals. The additional wild horses to be gathered would greatly improve the ability to select certain genetic traits, color, conformation, and sex ratios to ensure a healthy and viable wild horse herd. This would reduce the population to the mid-point of AML (Table 3) and the maximum population for which a thriving natural ecological balance would be maintained. No fertility control would be implemented.

Table 3. Removal to mid-point of AML without fertility control.

HMA	Anticipated #’s Prior to Gather	# Removed	# Returned	Total Captured	#	Wild Horses Remaining
Four-Mile	144	95	29	124		49
Sands Basin	132	83	25	108		49
TOTAL	276	178	54	232		98

2.3.5 Alternative 4 – Removal to Lower Limit of AML without Fertility Control

The capture, removal, and return strategies would be as described in Alternative 2; however, no fertility control would be implemented.

2.4 Comparison of Alternatives

Table 4: Comparison of Environmental Impacts

	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3	Alternative 4
Captured Horses	0	234	232	234
Removed Horses	0	206	178	206
Released Horses	0	28	54	28
Data Collection	No	Yes	Yes	Yes
Fertility Control	No	Yes	No	No
Gelding	No	Yes	Yes	Yes
Mares Treated w/Fertility	0	~11	0	0
Wild Horses	Continued negative impacts to habitat, and horse health would start to decline.	Improved wild horse habitat would occur and AML would be achieved on a four year gather cycle, with fertility control.	Improved wild horse habitat would occur and AML would be achieved, but for only two years.	Improved wild horse habitat would occur and AML would be achieved on a four year gather cycle.
Soils	Upland/Riparian use would continue to increase by wild horses by disturbance to the soil surface (hoof action) and decreasing soil surface cover (standing plant and litter amounts).	Slight soil compaction and impact would occur from concentration of horses and vehicles at the trap sites. Compaction and surface cover would be reduced if AML is achieved.	Slight soil compaction and impact would occur from concentration of horses and vehicles at the trap sites. Compaction and surface cover would be reduced if AML is achieved.	Slight soil compaction and impact would occur from concentration of horses and vehicles at the trap sites. Compaction and surface cover would be reduced if AML is achieved.
Water Quality Four Mile HMA	The three segments of Big Willow Creek occurring on public land in the HMA are in excellent condition and would be expected to continue in this condition since these three segments are inaccessible to wild horses. Four-Mile Creek is also mostly inaccessible to wild horses and is expected to continue to meet water quality standards. George Way and Coonrod Gulch are seasonal streams. Increase in sediment recruitment could occur as upland watersheds deteriorate with continue increases in wild horse numbers combined with livestock grazing	The three segments of Big Willow Creek occurring on public land in the HMA are in excellent condition and would be expected to continue in this condition since these three segments are inaccessible to wild horses. Four-Mile Creek is also mostly inaccessible to wild horses and is expected to continue to meet water quality standards. The seasonal streams and upland watersheds of both George Way and Coonrod Gulches would not deteriorate from overuse by wild horses and domestic livestock over the short through long terms.	The three segments of Big Willow Creek occurring on public land in the HMA are in excellent condition and would be expected to continue in this condition since these three segments are inaccessible to wild horses. Four-Mile Creek is also mostly inaccessible to wild horses and is expected to continue to meet water quality stand The seasonal streams and upland watersheds of both George Way and Coonrod Gulches would not deteriorate as much as in alternative 1 from overuse by	The three segments of Big Willow Creek occurring on public land in the HMA are in excellent condition and would be expected to continue in this condition since these three segments are inaccessible to wild horses. Four-Mile Creek is also mostly inaccessible to wild horses and is expected to continue to meet water quality standards. The seasonal streams and upland watersheds of both George Way and Coonrod Gulches would not deteriorate as rapidly from overuse by wild horses and domestic livestock than alternatives 1 and 3, but seasonal streams and upland watershed

			wild horses and domestic livestock during the short term by reducing wild horses to the mid AML.	conditions would also not remain as positive over the long term as alternative 2 due to no fertility control being utilized in this alt.
Water Quality Sands Basin HMA	Water quality would continue to decrease with very high numbers of horses.	Reduced pressure on riparian vegetation is expected in the Sands Basin HMA thus improvement to water quality is expected. With the Fertility control to the mares, water quality improvements in water quality would continue both in the short and long term more that Alternatives 1, 3, and 4.	Reduced pressure on riparian vegetation in the Sands Basin HMA, thus improvement in water quality is expected. However, the reduction in AML is to mid level and water quality improvement would occur only in the short term and as numbers increase, this improvement could diminish.	Reduced pressure on riparian vegetation in the Sands Basin HMA, thus improvement in water quality is expected. However, due to no fertility control for this alternative, numbers could likely increase, more quicker than in alternative 2 and the improvements in water quality could diminish more rapidly in time than in alternative 2.
Wetlands/Riparian Zone	High horse numbers would continue to cause riparian resource damage.	Reduced horse use would improve wetland/riparian habitat.	Reduced horse use would improve wetland/riparian habitat.	Reduced horse use would improve wetland/riparian habitat.
Wildlife/Fisheries	Wildlife populations in the HMAs would be forced to compete more for limited water and forage, which would most likely alter wildlife use patterns.	Reducing the overall grazing pressure through horse removal to the lower limit of AML would provide both immediate and longer-term indirect improvement in habitat conditions throughout the year.	In the short term (1-2 years), removal to mid-point AML would reduce the overall grazing pressure through horse removal and provide immediate indirect improvement in habitat conditions throughout the year.	Reducing the overall grazing pressure through horse removal to the lower limit of AML would provide both immediate and longer-term indirect improvement in habitat conditions throughout the year.
Grazing Management	Without removal of horses to the AML, vegetation utilization rates would exceed the capacity of the area, further degrading the forage resource and deteriorating the habitat.	The Proposed Action would allow present livestock use at allocated levels to continue. Wild horse utilization would decrease, areas that had year round horse pressure would be largely reduced, and allow vegetation use to be rotated without wild horses being more likely to graze in the area before and after the off-date of livestock.	The same as the Proposed Action would occur, but to a lesser extent due to less wild horses being removed.	The same as the Proposed Action would occur, but to a lesser extent due to no fertility control being utilized.
Cultural, Paleontological, and Historic Resources	No trap sites would be constructed and potential cultural or paleontological resources would not be disturbed.	There are no known impediments affecting access or use of the proposed project areas for religious or traditional uses by the Tribes.	There are no known impediments affecting access or use of the proposed project areas for religious or traditional uses by the Tribes.	There are no known impediments affecting access or use of the proposed project areas for religious or traditional uses by the Tribes.

3.0 Affected Environment and Environmental Consequences

3.1 Wild Horses

3.1.1 Affected Environment – Wild Horses

The Four-Mile HMA is located approximately 15 miles north of Emmett, Idaho. The Four-Mile HMA encompasses approximately 15,995 acres of public land, 925 acres of State land, and 1,114 acres of private land, for a total of 18,034 acres. Elevation in the Four-Mile HMA varies from approximately 3,100 ft in the lower drainages to 5,100 ft on Willow Ridge.

The Sands Basin HMA is located approximately ten miles southwest of Marsing, Idaho in the Sands Basin Allotment (#00521). The Sands Basin HMA encompasses approximately 9,448 acres of public land, 886 acres of State land, and 1,381 acres of private land, for a total of 11,715 acres. Elevation in the Sands Basin HMA varies from approximately 4,000 ft. near Jump Creek to 5,500 ft. at the top of the ridges.

Topographic features for both HMAs are mostly rolling hills and high, steep, rugged ridges, with deep drainages. The wide range in elevation and accessible terrain readily accommodates seasonal migration in the HMAs.

The Appropriate Management Levels for the Four-Mile and Sands Basin HMAs were established as a population range (see Table 5). AMLs were established based on an in-depth analysis of resource monitoring data and following a thorough public review. Animal Unit Months (AUMs) were allocated to wild horses on a proportional basis with other uses of the allotments (wildlife, livestock) using the best available utilization data collected within the allotments.

Table 5. Wild Horse Forage Allocations

HMA	Allocation (AUM)	AML Range	Year Established
Four-Mile	440 – 740	37-60	2001, EA#ID-010-00125
Sands Basin	588	33 – 64	1999, Owyhee RMP

The current population for the Four-Mile and Sands Basin HMAs following the 2009 foaling period is estimated at 128 and 121 wild horses, respectively. This estimate is based on a census completed in July of 2009.

The HMAs were last gathered in October of 2003 when 85 horses were captured and 53 were removed. The estimated post-gather population of horses was 76 (Four-Mile HMA – 42, Sands Basin HMA – 34).

Wild horse population census flights were conducted in the Four-Mile and Sands Basin HMAs in September of 2006 and in June of 2008. Estimated herd sizes exceeded the upper range of the AMLs by 95% and 64%, respectively in 2008 (Table 6). The annual estimated population growth between October of 2003 (last gather for these two HMAs) and the 2008 census was 22.8% on the Four-Mile HMA and 25.3% on the Sands Basin HMA (Table 6).

Table 6. Post-gather results and estimated wild horse numbers since the 2003 gather.

HMA	AML	2003 (Actual)	2004 (Est.)	2005 (Est.)	2006 Census (Sept.)	2007 (Est.)	2008 Census (June)	2009 Census (July)	PGR ¹
Four-Mile	37-60	42	52	63	76	96	117	128	22.8 %
Sands Basin	33-64	34	43	53	64	84	105	121	25.3 %

¹ PGR – The Population Gain Rate was calculated from the 2003 and 2008 census data which was correlated and verified using data from the 2006 census to determine the average percent increase per year.

Note - Although a census was completed in 2009, it is estimated that there will be an increase in wild horses during the proposed gather due to pregnant mares noted during the census flight. New foals have been seen on these HMAs as late as October.

The populations are expected to increase to 144 animals in the Four-Mile HMA and 132 animals in the Sands Basin HMA following the 2009 foaling season (Table 7), which is over twice the allocated high end of AML for each HMA.

Table 7. Anticipated wild horse numbers through 2010 if not gathered.

HMA	AML	2008 Census (PGR ¹)	2009 Census	2009 (Est.) (PGR ¹)	2010 (Est.) (PGR ¹)
Four-Mile	37-60	117 (22.8%)	128	144	177
Sands Basin	33-64	105 (25.3%)	121	132	165

¹ PGR – The Population Gain Rate was calculated from the 2003 and 2008 census data which was correlated and verified using data from the 2006 census to determine the average percent increase per year.

Note - Although a census was completed in 2009, it is estimated that there will be an increase in wild horses during the proposed gather due to pregnant mares noted during the census flight. New foals have been seen on these HMAs as late as October.

Wild Horse Habitat - Riparian monitoring completed in 2008 measured bank alteration at 59% and stubble height at two inches on the upper reaches of Jump Creek, located in the Sands Basin HMA. Overall, the upper reaches of Jump Creek have incised, and the current narrow riparian zone lacks vegetative diversity. The lower end of Jump Creek had a much higher stubble height (ten inches) with very little bank alteration (less than 5%), primarily due to an abundance of unpalatable cattails and rushes. Monitoring was also conducted on the HMA in March of 2009 to measure upland herbaceous species. Idaho fescue and bluebunch wheatgrass utilization was 53-63% on the Sands Basin HMA, prior to livestock turnout. Forage allocation for wild horses within the HMA is identified in the ORMP as 588 AUMs (the mid-point of AML (49) times 12 months). Current stocking rate on the Sands Basin HMA is approximately 1,584 AUMs (132 estimated wild horses times 12 months). The effect on vegetation and soils indicate the need to remove wild horses to the Appropriate Management Level (AML) in order to avoid further resource damage.

Upland utilization was completed on the Willow Ridge Allotment (within the Four-Mile HMA) in November of 2008. The southern end of the HMA had light use, with heavier use in the north end and into the head of Coonrod Gulch. Trailing to water was evident in Coonrod Gulch and within the George Way Gulch drainage, much more use from wild horses was visible and 53 head of horses were counted north of the drainage. Utilization was 37% in the George Way Gulch area of the HMA prior to livestock turnout. Considerable trailing to water was evident in the area in November 2008, and with the number of horses wintering in the area, utilization and trailing impacts are expected to have increased significantly. The Big Willow EA states a forage allocation of 440 to 740 AUMs for wild horses. Current stocking rate for the Four-Mile HMA is

approximately 1,728 (144 estimated wild horses times 12 months), which is significantly more AUMs than what was allocated in the EA.

Herd Dynamics - The sex ratio of the wild horses in the HMAs deviates slightly from a target population of 50% mares and 50% studs. The most recent gather within the Four-Mile and Sands Basin HMAs in October of 2003 estimated that 52% of the herds were female and 48% male. The current sex ratio of wild horses within the two HMAs is about 40-50% males to females, and the age structure is approximately 60% young (<4 years), 20% mid (5-14 years), and 20% old (15+ years).

Current Population - The population for the Four-Mile and Sands Basin HMAs following the spring foaling period in 2009 was approximately 128 and 121 wild horses, respectively, based on a census completed in July of 2009. The estimated population for 2009 following another foaling period using Population Gain Rates (Appendix 5) from 2008 is 144 horses in the Four-Mile HMA and 132 horses in the Sands Basin HMA.

HMA Genetic Diversity and Viability - Hair samples are important to determine genetic diversity and viability of the horse herds to ensure population diversity. After the 2000 gather, blood samples (now using hair samples) were taken on 17 horses from the Four-Mile and Owyhee Front HMAs. The following summarizes current knowledge of genetic diversity as it pertains to the Boise District HMAs (E. Gus Cothran, 2004):

- It is possible that small populations will be unable to maintain self-sustaining reproductive ability over the long term, unless there is a natural or management-induced influx of genetic information from neighboring herds. An exchange of only 2-3 breeding age animals per generation would maintain the genetic resources in small populations of about 100 animals. These 2-3 breeding age animals would come from other HMAs in the Boise District Office every 8-10 years to ensure genetic diversity
- There is little imminent risk of inbreeding since most wild horse herds sampled to date have large amounts of genetic heterozygosity. Genetic resources are lost slowly over periods of many generations, wild horses are long-lived with long generation intervals, and there is little imminent risk of inbreeding or population extinction.
- Current efforts with wild horses suggest management should allow for a 90% probability of maintaining at least 90% of the existing population diversity over the next 200 years.
- All HMAs genetic data will be re-tested for herd diversity during future gathers, and subsequent evaluations completed of the potential impact of management decisions.

3.1.2 Environmental Consequences – Wild Horses

3.1.2.1 Alternative 1 – No Action

Wild Horse Habitat/Wild Horse Populations – In the Four-Mile HMA, the population would be expected to grow from 144 currently to 177 following the 2010 foaling season. The population would be expected to grow from 132 currently to 165 in the Sands Basin HMA. The wild horse herds would be expected to continue to increase at approximately 21-31% annually in the near and mid-term.

This population growth of wild horses would compete with wildlife and livestock for the available water and forage resources. The areas closest to the water would experience severe utilization and degradation of range resources. Over time, the animals would deteriorate in condition as a result of declining forage availability and the increasing distance traveled to forage. The continued increases in population would eventually lead to catastrophic losses to the herd, which would be a function of the available forage, water, and the degradation of habitat. A point would be reached where the herd exceeds the ecological carrying capacity and both the habitat and the wild horse population would be critically unhealthy.

Ecological carrying capacity of the population would take effect within the herd if horse numbers are not reduced. The herd would show obvious signs of ill fitness, including poor individual animal condition, low birth rates, and high mortality rates in all age classes due to disease and/or increased vulnerability to predation.

A few wild horses already exist outside the boundaries within each HMA. With a larger increase of wild horses above AML, horses would be forced out of the HMA to find forage. Competition from other bands would further force wild horses outside the HMA boundaries.

Herd Characteristics/Herd Dynamics/HMA Genetic Diversity and Viability - No active management of the wild horses would occur if No Action was taken. Wild horse herds would show a decrease in size and conformation due to a lack of forage/nutrition and a large amount of competition due to the very high horse numbers. Herd dynamics would expect to favor studs due to the drop in conception that would come with decreased nutrition. Mares with nursing foals would have a hard time competing for forage, and older horses (20+ years old) would not be able to compete with younger and stronger horses. A lack of horse removal would also prevent the BLM from removing horses with undesirable traits.

This alternative would be contrary to law, regulation, and policy and would not achieve wild horse population in balance with the land's productive capability and other multiple uses.

3.1.2.2 Alternatives 2-4

Impacts Common to the Action Alternatives

Impacts to wild horses would take the form of direct and indirect impacts and may occur on either the individual or the population as a whole. Direct individual impacts are those impacts which occur to individual horses. These impacts include: handling stress associated with the roundup, capture, sorting, animal handling, and transportation of the animals. All phases of the capture, holding, adoption preparation and transport would be carried out according to Bureau policy with the intent of conducting a safe, humane operation. If conditions warrant, or if animal health and welfare is in jeopardy at any time, gather operations would be delayed, or halted.

Indirect individual impacts are those impacts which occur to individual horses after the initial stress event. Indirect individual impacts may include spontaneous abortions in mares, and increased social displacement and conflict in studs. These impacts, like direct individual impacts, are known to occur intermittently during wild horse gather operations. An example of an indirect individual impact would be the brief skirmish which occurs with older studs following sorting and release into the stud pen which lasts less than two minutes and ends when

one stud retreats. Traumatic injuries do not occur in most cases; however, they do occur. These injuries typically involve a bite and/or kicking with bruises which don't break the skin. Like direct individual impacts, the frequency of occurrence of these impacts among a population varies with the individual. Spontaneous abortion events are very rare, but are possible among mares following capture.

Well-constructed traps, safety-conscious corral construction at the holding facility, well-maintained equipment, and additional pens for animals determined to be kept separate from other animals would greatly decrease stress, and the potential for injury and illness. Implementation of the standard operating procedures related to capture, handling, and transport would result in minimal impacts to individuals over the short term.

Population wide direct impacts are immediate which would occur during or directly following capture activities. They include the displacement of bands during capture and the associated re-dispersal which occurs following release, the modification of herd demographics (age and sex ratios), temporary separation of members of individual bands of horses, re-establishment of bands following releases, and the removal of animals from the population. Direct population wide impacts have proven to be temporary in nature, with most impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release except a heightened awareness of human presence.

Wild Horse Habitat - Wild horse habitat would improve with the removal of horses in the short and long-term. Fewer horses would result in less trampling of soils and vegetation. Less competition would occur on vegetation, causing a decrease in utilization of palatable plant species. Vegetative vigor and the plants ability to survive in drought years, or times of heavy use would increase in the short and long-term. Although Alternatives 2-4 would improve wild horse habitat, Alternatives 2 and 4 would have a more significant improvement to wild horse use than Alternative 3, due to fewer horses.

Wild Horse Populations /Appropriate Management Level - Population modeling in Table 8 and Appendix 7 illustrates a median population size over an 11 year period and a median average growth rate over a 10 year period.

Table 8. Population modeling for the combined Four-Mile and Sand Basin HMAs.

Alternative	Population Sizes			Growth Rate
	Minimum	Average	Maximum	Average
1	270	957	2,210	23.0
2	80	121	268	18.5
3	112	159	270	23.1
4	80	125	271	23.2

¹ The Four-Mile and Sands Basin HMAs were combined for the population modeling due to size of the HMAs. The model is more accurate with larger wild horse numbers.

This model summarizes that Alternative 2 would have the lowest average wild horse populations during an 11 year period and the lowest average growth rate over a 10 year period, both of which would result in a slower population growth, which would allow vegetative resources to recover

and support all uses. This would also allow the HMAs to be in accordance with land use plans and reduce the likelihood of any emergency gathers or resource damage.

Table 9. Comparison of wild horse population increases by alternative for the Four-Mile and Sands Basin HMAs using population gain rates derived from census flights between 2003 and 2008.

HMA	AML Range (midpoint)	Alternative	2009	2010	2011	2012	**Population Gain Rate
Four-Mile	37-60 (49)	1	144	177	217	267	22.8%
		2	37*	43	53	65	22.8%
		3	49	60	74	91	22.8%
		4	37	45	55	68	22.8%
Sands Basin	33-64 (49)	1	132	165	207	259	25.3%
		2	33*	39	49	61	25.3%
		3	49	61	76	95	25.3%
		4	33	41	51	64	25.3%

* A Population Gain Rate of 17.1% was used on Four-Mile HMA and 19% on Sands Basin HMA (3/4 of normal rate) due to PZP that would be administered to mares that would be returned. Approximately half of the animals remaining on the HMAs following the gather would be mares and approximately 1/4 of those mares would have PZP administered.

** PGR – The Population Gain Rate was calculated from the 2003 and 2008 census data which was correlated and verified using data from the 2006 census to determine the average percent increase per year.

The immunocontraception proposed in Alternative 2 would have slight to moderate short term reductions in reproduction. Through implementation of fertility control, a horse population that is over AML is less likely prior to the next scheduled gather (four years). This would provide a viable population that would survive and be successful within the HMA during poor years when elements of the habitat are limiting due to severe winter conditions, drought, or other uncontrollable and unforeseeable environmental influences to the herd.

The Proposed Action would be the most desirable management action due to the estimation that the wild horse numbers would be well above the high end of AML in Alternative 3 and slightly higher in Alternative 4. This would also improve wild horse habitat throughout the HMAs by relieving pressure on forage and water, currently exhibited by wild horse numbers well above AML. As per Appendix 7, population levels remain much closer to AML throughout the 10 year model period of the Wild Horse Population Model with use of fertility control and removal to the low end of AML.

3.2 Soils

3.2.1 Affected Environment – Soils

Soils within the HMAs formed in alluvium and residuum derived dominantly from welded rhyolitic tuff, basalt and granitic parent materials. These soils occur on foothills, structural benches, and alluvial fan terraces. They are generally shallow to moderately deep, cool, and well drained. Surface textures are mostly gravelly loams (some modified by stoniness) with subsoils ranging from gravelly loam to gravelly clay loams. The hazard of erosion by water for these soils is slight to high depending on surface texture and slope. Soils information was gathered from the Soil Survey of Owyhee County Area Soil, Idaho (NRCS, 2003). Detailed soil information can be found at <http://soils.usda.gov/survey> and follow prompts to the above online soil survey.

3.2.2 Environmental Consequences – Soils

3.2.2.1 Alternative 1 – No Action

There would continue to be both direct and indirect negative impacts to soil site-stability and hydrologic function from the high number of horses in the HMAs. Types of impacts to soil site-stability and hydrology would be compounded in areas where livestock graze in common.

3.2.2.2 Alternatives 2-4

Direct impacts to soils would be mainly due to surface disturbing activity (construction and vehicular travel) during the gather and are similar for Alternatives 2-4. Soil would be displaced and/or compacted on approximately two acres at each site in the construction of the trap panels, use of the access routes, and in the round-up and loading of the wild horses. The area of severe surface disturbance would normally be less than 2,000 square feet. Minimal surface erosion from wind and water would be expected on these areas during the vegetative rehabilitation period (approximately 1 to 3 years).

Upland use by wild horses has a direct impact on the soil resource in the form of physical disturbance to the soil surface (hoof action) where they trail and congregate and indirect impacts where these animals utilize vegetation thereby decreasing soil surface cover (standing plant and litter amounts). Where livestock utilize these same areas there is a long-term negative, both direct and indirect, cumulative impact to soil site-stability and hydrologic function. By reducing the number of horses in the HMA's there would be a corresponding reduction in impacts to the resource. Alternatives 2 and 4 would provide the largest reduction in horses, thus reducing impacts to the resource to a greater extent than Alternative 3.

3.3 Water Quality

3.3.1 Affected Environment – Water Quality

Four-Mile HMA

The designated beneficial uses of Big Willow Creek described in Idaho water quality standards (IDAPA 58.01.02) are cold water aquatic life (CWAL), salmonid spawning (SS), and primary contact recreation (PCR) from the source to the mouth. In addition, Big Willow Creek has a general use designation for secondary contact recreation, agricultural water supply, wildlife habitat, and aesthetics.

Big Willow Creek was placed on the 1998 §303(d) list of impaired waters by EPA for reasons associated with excess temperature. It was subsequently carried forward to the 2002 Integrated Report (§303(d) list/§305(b) report). The information evaluated by DEQ (Lower Payette River Subbasin Assessment and Total Maximum Daily Load 2008) confirmed temperature is impairing the beneficial uses of Big Willow Creek. DEQ has completed a TMDL for temperature in Big Willow Creek from its headwaters to the Payette River. The DEQ found no bacterial impairment to primary and secondary contact recreation. BLM data (2009) indicate no bacterial impairment to water quality. Much of the riparian community in the lower segments of Big Willow Creek was severely disturbed by region-wide flood events in January 1997. The plant community is slowly returning to the newly established floodplain and shade characteristics in those segments

are indicative of that recovery. It is anticipated that recovery would continue and that shade levels and solar load levels would meet target reductions in those areas in the future. Effective shade targets were established for Big Willow Creek based on the concept that maximum shading under potential natural vegetation equals natural background temperature levels. Shade targets were derived from effective shade curves developed for similar vegetation types in the Northwest.

The three segments of Big Willow Creek occurring on public lands in the HMA are in excellent condition, and provide dense shading (estimated 75-80% canopy cover) to protect the water body from solar heating; these segments are meeting the TMDL shade target for stream temperature protection.

Both George Way Gulch and Coonrod Gulch are seasonal flow regime streams. The DEQ temperature standards for seasonal cold water biota apply only when in-stream flows are \geq one-cubic-foot per second. Generally, flows of this magnitude only occur in early spring during snow melt, so it is assumed these streams are meeting water quality standards for temperature. Water quality standards for primary and secondary contact recreation only apply to streams when flows are \geq five cubic feet per second (5 cfs). Flows in these drainages would not commonly equal or exceed 5 cfs, so bacterial standards for primary and secondary contact recreation do not apply.

Sands Basin HMA

Jump Creek has a general use designation for secondary contact recreation, agricultural water supply, wildlife habitat, and aesthetics. Additionally, the State of Idaho assigned cold water biota and primary contact recreation beneficial uses to Jump Creek from its source to its confluence with the Snake River (IDEQ, 2004). Jump Creek from its headwaters to the Snake River is listed on the State of Idaho's 303(d) water quality limited stream segments due to habitat alteration.

No specific water quality parameters have been taken on this segment of Jump Creek. However, data from modified MIM data taken in 2008 indicated that the lower section of Jump Creek (pasture 2) appeared to have adequate vegetation and streambank stability to protect the water quality. On the upper reaches of Jump Creek in pasture 4, 2008 Multiple Indicator Monitoring (MIM) data indicated decreased bank stability and low median stubble height. Both parameters indicate decreased streambank protection from high flows, and higher likelihood of increased sedimentation, turbidity, and water temperatures.

3.3.2 Environmental Consequences – Water Quality

3.3.2.1 Alternative 1 – No Action

Four-Mile HMA

The three Big Willow Creek segments on public lands are inaccessible to wild horses and domestic livestock due to very steep slopes, rocky substrates, and dense riparian vegetation. No evidence of past or present wild horse or domestic livestock use was encountered along public lands segments of Big Willow Creek in July 2009. It is not anticipated that increased wild horse

populations would increase the use of this stream and negatively affect water quality over the short through long terms.

Perennial segments of Four-Mile Creek are mostly inaccessible to wild horses and livestock due to dense vegetation, a riparian exclosure, and the western HMA boundary fence. Four -Mile Creek is mostly an intermittent flow regime stream with occasional occurrences of perennial sections with summer flows less than 0.10 cubic feet per second. The DEQ temperature standards for seasonal cold water biota apply to this stream only when in-stream flows are \geq one-cubic-foot per second (1 cfs). Generally, flows of this magnitude only occur in early spring during snow melt, so it is assumed the stream would continue to meet water quality standards for temperature over the short through long terms. This stream is not listed on the IDEQ 303(d) list of water quality impaired streams.

Both George Way Gulch and Coonrod Gulch have seasonal stream flow regimes. The DEQ temperature standards for seasonal cold water biota apply only when in-stream flows are \geq one-cubic-foot per second. Generally, flows of this magnitude only occur in early spring during snow melt, so it is assumed that each stream would continue to meet water quality standards for temperature over the short through long terms. These first order streams are not listed on the DEQ 303(d) list of water quality impaired streams. An increase in sediment recruitment could occur in all seasonal streams in the HMA as upland watersheds deteriorate from combined grazing use by both wild horses and domestic livestock over the short through long-terms.

Sands Basin HMA

Continued problems would become increasingly evident in the Sands Basin HMA with annual increases in wild horse numbers and year-long use in the Jump Creek drainage. Damage to streambanks due to hoof action and riparian vegetation composition changes to less desirable species would continue to occur in stream segments within Pasture 4. These impacts would increase sedimentation, turbidity, and water temperature. Stream segments in pasture 2 and segments that are near well traveled roads would not have the severity of impacts as Pasture 4 due to occasional human disturbance, but impacts would increase as horse numbers increase. Long-term impacts to Jump Creek and tributaries would be an overall decline in water quality due to streambank trampling and riparian vegetation composition change to less desirable species due to excessive horse numbers. Jump Creek would not meet its beneficial uses and would remain on the 303(d) list for impaired stream.

3.3.2.2 Alternatives 2 and 4

Four-Mile HMA

Water Quality in Big Willow Creek would remain unchanged over the short through long terms. Wild horse removal as described in Alternative 2 and Alternative 4 would aid in preventing grazing and trampling damage along seasonal streams in this watershed. Willow Creek would continue to meet the assigned shade TMDLs on public land segments of this stream over the short through long terms as wild horses and domestic livestock cannot access this stream. Reduced horse numbers in the short-term (2-3 years) would decrease grazing impacts on riparian vegetation and impacts on streambanks associated with hoof action around springs. If current horse management continues with a gather every four years, long-term wild horse impacts would likely be negligible. Periodic removal of wild horses would aid in maintaining streamside

vegetation that would aid in slowing water flows and catch sediment in seasonal drainages. These alternatives would nearly eliminate wild horse use as a factor encumbering water quality in the Four-Mile HMA. The streams and upland watersheds of both George Way and Coonrod Gulches would not deteriorate from overuse by wild horses and domestic livestock over the short through long-terms.

Sands Basin HMA

Wild horse removal per Alternative 2 and Alternative 4 would aid in relieving grazing and trampling pressure on the Jump Creek drainage area. Reduced horse numbers in the short-term (2-3 years) would decrease grazing impacts on riparian vegetation and impacts on streambanks associated with hoof action. If current horse management persists with a gather every four years, long-term horse impacts would be negligible. Minimizing and relieving these impacts to the stream and riparian areas would allow Jump Creek and tributaries to function properly, increasing riparian vegetation that would aid in slowing water flows, catching sediment, and lowering water temperature due to shade from riparian vegetation. These alternatives would aid Jump Creek in eventual removal from the 303(d) list and full attainment of its beneficial uses.

3.3.2.3 Alternative 3

Four-Mile HMA

Alternative 3 would have similar short-term impacts as Alternatives 2 and 4. However, in 2011 and 2012, wild horse numbers are projected to exceed the AML. Wild horse removal per Alternative 3 would aid in preventing grazing and trampling damage to areas currently in good condition including the intermittent segments of Fourmile Creek, and George Way Gulch, and Coonrod Gulch. It is not anticipated that increased wild horse populations would increase the use of these areas and negatively affect water quality over the short through long terms.

Sands Basin HMA

Alternative 3 would have similar short-term impacts as Alternatives 2 and 4. However, in 2011 and 2012, wild horse numbers are projected to exceed the AML. Physical damage to streambanks due to hoof action and riparian vegetation defoliation would intensify with increasing horse numbers, until another wild horse gather on year 4. Water quality impacts would include incremental increases in sedimentation and turbidity along with increasing water temperatures due to riparian vegetation defoliation at wild horse congregation points throughout the Jump Creek drainage. The net gains in water quality experienced in the first 2 years after horse removal would likely be diminished or nullified by the later impacts incurred by excessive wild horse numbers. Overall water quality in the Jump creek drainage would likely remain the same and would continue to be on the 303(d) list for water quality limited streams.

3.4 Wetlands/Riparian Zone

3.4.1 Affected Environment – Wetlands/Riparian Zone

Four-Mile HMA

Riparian resources within the Four-Mile HMA include approximately one-mile of Big Willow Creek, a perennial flow regime stream. The plant community type along Big Willow Creek is classified as mountain alder/redosier dogwood, which represents the potential natural plant community. This stream was recently inventoried and evaluated for functioning condition

according to protocols described in A User Guide for Assessing Proper Functioning Condition for Lotic Areas (TR-1737-15 1998). Big Willow Creek was found in proper functioning condition throughout the three short segments occurring on public lands. Domestic livestock and wild horses have no impact on this stream as it is largely confined in a narrow valley with very steep banks. The stream channel and floodplain characteristics are mostly geologically controlled by coarse rock and bedrock and are nearly 100% vegetated and stable. No evidence of past or present use by wild horses or domestic livestock was encountered along any segment of this stream.

Four-Mile Creek has a mostly seasonal flow regime and is dominated by arroyo willows and mesic upland grasses and forbs. However, short segments of this stream have perennial flows which support wetland obligate plant species including several species of sedges and rushes. Also, Pacific and arroyo willows and various introduced tree species including box elder, locust, and apple trees also occur here. All segments of this stream were in proper functioning condition.

Coonrod Gulch and George Way Gulch have entirely seasonal stream flows. No obligate hydric plant species were present in these streams so they were not evaluated for functioning condition. However, these streams are functioning within their capability given the seasonal flow regimes. Grazing impacts from wild horse and domestic livestock use are apparent in the upper George Way Gulch, and Coonrod Gulch watersheds. Wild horse use in George Way and Coonrod Gulches occurs mostly in early to mid spring.

Sands Basin HMA

Riparian resources within the Sands Basin HMA include Jump Creek drainage containing one wet meadow complex within that drainage, and one spring in Pasture 4. Jump Creek is a perennial stream with intermittent segments within the Middle Snake River-Jump Creek watershed (HUC- 1705010308). Approximately 2.5 miles of Jump Creek out of a total of 6.8 miles are on public lands that flow through the Sands Basin Allotment (Appendix 4). The Jump Creek section in Pasture 2 (approximately one mile) is a wet meadow complex with a low gradient meandering channel. The stream channel migrated sometime in the recent past (40 years), leaving a broad wet meadow complex. From 2008 observations, the entire channel is heavily vegetated with cattails. The wet meadow section of the channel is predominately vegetated with: Baltic rush, Nebraska sedge, Beaked sedge, American bulrush, Kentucky blue grass, and salt grass. No obligate wetland shrubs have been observed. Median herbaceous stubble heights taken in 2000 and 2008 were eight and ten inches, respectively. An additional stubble height was taken in 2000 in Pasture 2 on a lower section of Jump Creek and was calculated at 4.5 inch median. Both 2003 greenline and 2008 modified MIM data rated the stream bank as stable with 100% vegetated cover.

Two stream segments flow through Pasture 4 of the Sands Basin Allotment; Jump Creek and a perennial tributary (T18) to Jump Creek (a total of 1.5 miles). Observations from 2008 modified MIM identified that section of Jump Creek as a low gradient geologically constricted channel. Riparian vegetation observed include Baltic rush, Nebraska sedge, Duck weed, and two willow plants. Median stubble height data measured in 2002 and 2008 were four and two inches, respectively. Though not measured, 2003 greenline data noted the herbaceous stubble height

was less than 4 inches. The greenline data also identified heavy hoof action on the stream banks, however they were well vegetated. Analogous to results from the greenline data, the 2008 modified MIM data identified 59% bank alteration and 100% vegetation cover on the stream banks. Greenline data identified wild horses in the pasture and observations from the modified MIM data identified hoof impacts were primarily from horses.

Additionally, in 2008 herbaceous stubble heights were measured again on Jump Creek in November to identify regrowth and possible wild horse use. Median stubble height in Pasture 2 was not measured but estimated to be over seven inches. However, in Pasture 4, median stubble heights on Jump Creek and T18 were both three inches. Extensive pugging and bank shearing were also noted, as well as horse sign on Jump Creek.

Sands Basin wet meadow complex in Pasture 4 was assessed as functional-at-risk in 2007 due to the presence of a head cut at the lower end of the meadow. The head cut appeared stable due to abundant obligate riparian vegetation in and around the head cut. No current information exists on the unnamed spring in Pasture 4.

3.4.2 Environmental Consequences – Wetlands/Riparian Zone

3.4.2.1 Alternative 1 – No Action

Four-Mile HMA

Over the long-term, the increasing horse population may result in formation and redistribution of new wild horse bands in the HMA. However, as wild horse cannot access the segments of Big Willow Creek due to geologic features, it is not anticipated that the increased horse population would have any negative short or long term effect on this stream.

Over the short through long-terms, combined use by domestic livestock and wild horses could negatively affect the functioning condition of intermittent springs, seasonal streams, and first field watersheds. This would include short segments of Four-Mile Creek inside the western HMA boundary fence, and the upper segments of George Way and Coonrod Gulches, particularly in spring when these seasonal streams have surface water available.

Sands Basin HMA

This alternative would contradict the direction and objectives for riparian management prescribed in the Owyhee RMP. Passive, continuous grazing rarely results in riparian maintenance and recovery because heavy grazing use prevents root reserves from developing in riparian vegetation to a level that would permit reproduction of the few surviving native hydric species in streams (USDI, 2006). The excessive use would continue to jeopardize the functioning condition of these streams, and would likely result in decreased functioning conditions of streams allotment wide, over both the short and long-terms. Riparian impacts would become increasingly evident with annual increases in wild horse numbers and year-long use in the Jump Creek drainage. Short-term impacts including streambank damage due to hoof action and riparian vegetation composition changes to less desirable species would occur in stream segments within Pasture 4. Stream segments in Pasture 2 and segments that are near well traveled roads would not have the severity of impacts as Pasture 4 due to occasional human disturbance, but impacts would increase as horse numbers increase.

Long-term impacts would increase due to the increased wild horse numbers. Stream channel and vegetation damage due to increased trampling and more intensive grazing use over prolonged periods (>5 years) would soon reach untenable levels, prompting episodes of channel down cutting and bank caving. Jump Creek would not function properly and would eventually not meet Rangeland Health Standards.

3.4.2.2 Alternatives 2 and 4

Four-Mile HMA

Big Willow Creek would continue to be in proper functioning condition over the short through long-terms. Wild horse removals per Alternative 2 and Alternative 4 would aid in preventing grazing and trampling damage to areas currently in good condition including the intermittent segments of Four-Mile Creek, George Way Gulch, and Coonrod Gulch.

Sands Basin HMA

Wild horse removal per Alternative 2 and Alternative 4 would aid in relieving grazing and trampling pressure on the Jump Creek drainage area. Reduced horse numbers in the short-term (2-3 years) would decrease grazing impacts on riparian vegetation and impacts on streambanks associated with hoof action. If current horse management persists with a gather every four years, long-term horse impacts would be negligible. Minimizing and relieving these impacts to the stream and riparian areas would allow Jump Creek and tributaries to function properly by increasing deep rooted riparian vegetation that would aid in slowing water flows, catching sediment, and building/rebuilding streambanks.

3.4.2.3 Alternative 3

Four-Mile HMA

Alternative 3 would have similar short-term impacts as Alternatives 2 and 4. However, in 2011 and 2012, wild horse numbers are projected to exceed the AML. Big Willow Creek would continue to be in proper functioning condition over the short through long terms because it is inaccessible. Wild horse removal per Alternative 3 would aid in preventing grazing and trampling damage to areas currently in good condition including the intermittent segments of Fourmile Creek, and George Way Gulch, and Coonrod Gulch.

Sands Basin HMA

Alternative 3 would have similar short-term impacts as Alternatives 2 and 4. However, in 2011 and 2012, wild horse numbers are projected to exceed the AML. Physical damage to streambanks due to hoof action and riparian vegetation defoliation would intensify with increasing horse numbers, until another wild horse gather on year four. Impacts associated with increasing horse numbers include increased bank trampling, widening of stream channels, and increased riparian vegetation defoliation at wild horse congregation points throughout the Jump Creek drainage. The net gains in riparian vegetation and stream bank stability experienced in the first 2 years after horse removal would be diminished or nullified by the later impacts occurred due to excessive wild horse numbers. As wild horse populations continue to expand both in terms of numbers and distribution, there is a good likelihood that these stream channels would become degraded and affect overall stream system stability.

3.5 Upland Vegetation w/Noxious Weeds and Special Status Plants

3.5.1 Affected Environment – Upland Vegetation w/Noxious Weeds and Special Status Plants

Upland Vegetation

Four-Mile HMA

A large percentage of the upland vegetation in this HMA has been altered by past wildfires and the subsequent invasion of exotic annual grasses (cheatgrass and medusahead). In the southern and eastern portions of the HMA, the native vegetation has been largely replaced by invasive exotic annual grasses, and in the northern and northwestern portions, the native plant communities are largely intact along the ridges and upper slopes. Cheatgrass and/or medusahead have invaded the lower portions of the drainages. The native vegetation is characterized by bluebunch wheatgrass with scattered antelope bitterbrush, basin big sagebrush in drainages, and low sagebrush on the rocky areas with thin soils. The area within the George Way Gulch area has the most evidence of grazing use, some hill slopes exhibit evidence of use and some disturbance.

Sands Basin HMA

A large portion of the upland vegetation within this HMA has been altered by past wild land fires. The 1960 Johnstone fire burned approximately 3,167 acres in the southeast portion of the HMA and the 2002 Trimby wildfire burned approximately 3,144 acres in the west-northwest portion of the HMA. Both areas were reseeded following the wildfire; however, due to the length of time that has occurred since the Johnstone fire; the native plant community has become reestablished amongst the seeded species with exotic annual grasses co-dominating the plant community.

The native plant community is characterized by basin big sagebrush with bluebunch wheatgrass in the deeper soils, and low sagebrush in the soils with a clay restriction layer. The current plant community consists of pockets of sagebrush with some seeded perennial grasses intermixed with native perennial grasses and invasive exotic annual grasses (cheatgrass and medusahead).

Noxious Weeds

Four-Mile HMA

Multiple populations of several noxious weed species have been identified and some have received chemical or mechanical treatments. These populations are concentrated in the northwestern portion of the HMA, and include; rush skeletonweed, Russian knapweed, diffuse knapweed, and Scotch thistle.

Sands Basin HMA

Several occurrences of noxious weeds have been documented within the Sands Basin HMA. Canada thistle, scotch thistle, purple loosestrife, puncture vine, Tamarisk, and white top have all been identified and some areas have been chemically or mechanically treated to control these weeds species.

Special Status Plants

No federally listed plant species are known to occur in these HMAs although the U.S. Fish and Wildlife Service (USFWS) considers all of Idaho to be within the potential range of Ute ladies'-tresses (*Spiranthes diluvialis*), a federally threatened orchid species. This plant occurs in springs, seeps, and riparian habitats. Due to the difficulty in narrowly defining potential habitat for this species, USFWS has chosen to apply a loose definition and requires Section 7 consultation only in three counties of southeast Idaho or in areas where the plant is actually found (USFWS 2002). Surveys specifically for this plant are recommended prior to authorizing federal actions in southwest Idaho, but not required.

Four-Mile HMA

No populations of BLM special status plants are known to occur within the Four mile HMA.

Sands Basin HMA

No populations of BLM special status plants are known to occur within the Sands Basin HMA; however, several BLM special status plant species occur within a five mile radius of the center of the HMA (Table 9) (IDFG-CDC 2006). The Lomatium and Astragalus species have perennial life spans which extend over several years, and the other species are annual species which complete their life cycles in one year.

Table 10. Special Status Plant Species known to occur adjacent to the Sands Basin HMA

HMA	Special Status Plant Species	BLM Status*
Sands Basin	<i>Chaenactis cusickii</i> (Cusick's false yarrow)	2
	<i>Lomatium packardiae</i> (Packard's desert parsley)	2
	<i>Mentzelia mollis</i> (smooth stickleaf)	2
	<i>Cymopterus acaulis</i> var. <i>greeleyorum</i> (Greeley's wavewing)	3
	<i>Phacelia lutea</i> var. <i>calva</i> (Malheur phacelia)	3
	<i>Astragalus conjunctus</i> (Stiff milkvetch)	5 (watch)
	<i>Astragalus purshii</i> var. <i>ophiogenes</i> (Snake River milkvetch)	5 (watch)

*Status; 1- Federally Threatened, Endangered, Proposed and Candidate Species, 2 – Range wide/Globally Imperiled Species - High Endangerment, 3 – Range wide/Globally Imperiled Species - Moderate Endangerment, 4 – Species of Concern, 5 – Watch Species.

3.5.2 Environmental Consequences – Upland Vegetation w/Noxious Weeds and Special Status Plants

3.5.2.1 Alternative 1 – No Action

Four-Mile and Sands Basin HMAs

The No-Action Alternative would allow for unrestricted increases in the number of horses in the HMAs, which would increase the demand for forage on the plant communities and result in higher use levels on a broader area. The predicted over utilization would eventually lead to resource degradation, and in combination with the allocated livestock AUMs, would exceed carrying capacity and the utilization would shift to browsing of shrubs, which would become hedged and weak. The overall weakening of the perennial plants would result in increases in

invasive and noxious weeds. No impact would be expected to special status plants, as none are known to occur within either HMA.

3.5.2.2 Alternative 2

Four-Mile and Sands Basin HMAs

The lower levels of wild horses allow them to remain in more remote areas which do not overlap into livestock use areas as much. This results in lower utilization of native grasses, and decrease competition with wildlife and livestock. This reduction would provide plants with relief from grazing pressure and promote healthy and vigorous perennial plants, build root reserves, increase the plants abilities to compete with noxious and invasive species, and recover from grazing. Appropriate horse numbers would minimize soil disturbance and reduce the threat of noxious and invasive weed encroachment. Most noxious and invasive weeds are non-indigenous and have evolved under grazing practices that cause soil disturbance and erosion (Sheley and Petroff 1999).

No impact would be expected to special status plants, as none are known to occur within either HMA.

3.5.2.3 Alternative 3

Four-Mile and Sands Basin HMAs

Impacts described under Alternative 1, would be partially mitigated, but the relief would be short-lived, and the impacts described for Alternative 1 would be expected in a few years when the horse numbers again exceed the AML.

No impact would be expected to special status plants, as none are known to occur within either HMA.

3.5.2.4 Alternative 4

Four-Mile and Sands Basin HMAs

This alternative would provide some relief to the plant communities from forage requirements. When horse numbers approach the maximum limit of the HMA, the impacts described for Alternative 1 would be expected.

No impact would be expected to special status plants, as none are known to occur within either HMA.

3.6 Wildlife/Fisheries

3.6.1 Affected Environment – Wildlife/Fisheries

Four-Mile HMA

This management area is mostly a rocky ridge that burned in the 1980's, and is now dominated by native grasses on the higher elevations and cheatgrass and medusahead in the lower elevations. Wyoming sagebrush, stiff sage, and bitterbrush have returned since the fire, which includes some segments of perennial stream and riparian habitat along Big Willow and Four-Mile Creeks.

No threatened or endangered species are known from the area. Although it is close to some habitat occupied by the Southern Idaho Ground Squirrel, a Candidate species for federal listing, none have been found in the Four-Mile Management Area. From field review, the habitat is too rocky to support them. Other BLM Sensitive species that may occur in the area include sage grouse, loggerhead shrike, sage sparrow, and Brewer's sparrow; however, the patches of sage are so small that these birds are probably very few. Redband trout are found in Big Willow Creek. Big game species include antelope, mule deer (especially wintering) and wintering elk.

Most of the Four-Mile management area is classified as "restoration habitat" for sage grouse, because sagebrush was burned off in the 1980's. About a half section along the west side is mapped as key habitat, with intact sagebrush. However, from telemetry studies in the area, it is not currently known to be used by sage grouse.

Sands Basin HMA

Numerous species of wildlife occur within the project area. No threatened or endangered or animals are known to exist at or around trap sites. Golden eagles, which are managed under the Bald and Golden Eagle Protection Act (1962), are likely nesting in the area. Special status species that are known or may occur in the area are identified in Table 10.

Table 11. Special status species that know or are likely to occur in the Sands Basin HMA.

Species	Status/Type	Key Habitat Associations
Greater Sage-grouse (<i>Centrocercus urophasianus</i>)	S/2	Big sagebrush, low sagebrush, meadow, riparian
Ferruginous Hawk (<i>Buteo regalis</i>)	S/3	Cliff, rock outcrop, open juniper, big sagebrush, low sagebrush
Swainson's Hawk (<i>Buteo swainsoni</i>)	S/5	Desert and grassland ecosystems
Prairie Falcon (<i>Falco mexicanus</i>)	S/3	Cliff/canyon, big sagebrush, low sagebrush
Western Burrowing Owl (<i>Athene cunicularia</i>)	S/5	prefer open grassland habitat
Short-eared Owl (<i>Asio Flammeus</i>)	S/5	Open country, grasslands, weedy areas
Golden Eagle (<i>Aquila chrysaetos</i>)	BGEA	Cliff, big sagebrush, low sagebrush
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	S,SSC/3	Big sagebrush, juniper
Sage Thrasher (<i>Oreoscoptes montanus</i>)	S/5	Big sagebrush
Sage Sparrow (<i>Amphispiza belli</i>)	S/3	Big sagebrush
Brewer's Sparrow (<i>Spizella breweri</i>)	S/3	Big sagebrush
Black-throated sparrow (<i>Amphispiza bilineata</i>)	S/4	Deserts, especially rocky slopes
Pygmy Rabbit (<i>Brachylagus idahoensis</i>)	S,SSC/2	Big sagebrush
California Bighorn Sheep (<i>Ovis Canadensis californicus</i>)	S/3	Steep canyons with adjacent open sagebrush/grass
Fringed Myotis (<i>Myotis thysanodes</i>)	S/3	Roosting/hibernation: Caves, rock outcrops Foraging: Juniper, sagebrush, meadow
Spotted Bat (<i>Euderma maculatum</i>)	S,SSC/3	Roosting/hibernation: Cliffs, canyons, rock outcrops; Foraging: Juniper, sagebrush
Townsend's Big-eared Bat (<i>Corynorhinus townsendii</i>)	S,SSC/3	Roosting/hibernation: Caves, trees

		Foraging: Juniper, sagebrush, canyon
Western Pipistrelle (<i>Pipistrellus hesperus</i>)	S,SSC/5	Roosting/hibernation: Caves, rock outcrops, Foraging: Juniper, sagebrush, canyon
Western Toad (<i>Bufo boreas</i>)	S/3	Ephemeral pools and streams, all upland habitats
Woodhouse Toad (<i>Bufo woodhousii</i>)	S/3	Sagebrush deserts, grasslands, desert streams, woods, valleys, floodplains
Redband Trout (<i>Oncorhynchus mykiss gibbsi</i>)	S,SSC/2	Streams and rivers throughout the Owyhee Resource Area.
Great Basin Collared Lizard (<i>Crotaphytus bicinctores</i>)	S/3	Arid rocky canyons with sparse vegetation.
Longnose Snake (<i>Rhinocheilus lecontei</i>)	S/3	Deserts, prairies and brush-land and is most abundant in areas of loose soils
Western Ground Snake (<i>Sonora semiannulata</i>)	S/3	Arid and semi-arid habitat, especially near talus, usually associated with loose soil
Common Garter Snake (<i>Thamnophis sirtalis</i>)	S/3	Usually found near water and swims readily

1 = Status SSC - State of Idaho Species of Special Concern, S - BLM Sensitive Species.

2 = Type - 1 is Federally Threatened or Endangered Proposed or Candidate Species, 2 is Rangewide/Globally Imperiled Species, 3 is Regional/State Imperiled Species, 4 is Peripheral Species, and 5 is Watch Species (not considered sensitive)

BGEA = Bald and Golden Eagle Protection Act

Inventory and monitoring data are limited or absent for the vast majority of these species. Therefore, very little is known about their distribution, population status or trend within the allotment. Their occurrence within the allotment has either been verified through field observation or assumed likely because the allotment falls within the species known range and contains habitat types capable of supporting the species. The following is a brief description of surveys and/or monitoring efforts that have been conducted for special status animal species within the Sands Basin HMA.

Sage grouse lek (breeding ground) surveys/counts have been conducted periodically by BLM and Idaho Department of Fish and Game biologists since the late 1970s. No active leks have been discovered within the Sands Basin HMA.

Primary game species present in the herd areas include pronghorn antelope, California bighorn sheep, mountain lions, coyotes, bobcats, and mule deer. Sage grouse, California quail, and chukar partridge are game birds species that inhabit the area. Many non-game species are also found in the sagebrush steppe habitat. Riparian habitats found along creeks and around springs provide important habitat for wildlife in the Sands Basin HMA.

The HMA has one main riparian area, Jump Creek, and several springs. Jump Creek is a small stream that flows from south to north and it is intermittent in the HMA. Jump Creek within the HMA may support fish on a seasonal basis during higher flows and fish may move into the HMA to spawn during spring high flows. Even though fish may not be present in the HMA, effects from riparian degradation and over utilization of upland habitat would likely impact fisheries habitat downstream of the HMA. Riparian habitat is lacking and a riparian area with greater amounts of vegetative cover would better provide for the needs of dependant special status animals.

Red-band trout is found in Jump Creek although distribution is limited due to the intermittent nature of Jump Creek above Jump Creek Falls. Improved riparian conditions would likely increase flows in Jump Creek and improve conditions for redband trout.

3.6.2 Environmental Consequences – Wildlife/Fisheries

3.6.2.1 Alternative 1 – No Action

Four-Mile HMA

Effects to wildlife can be separated into effects of horses on the habitat, and short term effects of the roundup operations themselves. If horses were allowed to increase without limits, grazing use levels would approach 100%, the native grasses would die or become less productive due to year-round heavy grazing, and the bitterbrush and other shrubs would become severely hedged and provide less winter browse for deer and elk. Without control, predicted population growth of the horse herd would result in four times the number of horses (267) by the year 2012. In the 18,000 acre HMA this would provide each horse only 5.6 acres/month for forage. The cattle stocking rate in the HMA is currently 10 acres per cow per month, which is based on a formula leaving approximately 50% of the production for wild horses, wildlife, and plant maintenance. Horses eat about 20% more per day than a cow, approximately 34 lbs/day versus 28 lbs/day. Thus, at a stocking rate of 5.6 acres per horse per month, the wild horses would require over 100% of the production, so that no forage would be left for wildlife. Additionally, such heavy use would degrade plant vigor and the habitat would be on a strong downward trend. Potential for weed invasion would increase, reducing habitat quality for wildlife.

The wildlife that would be affected most directly are those that would compete with horses for forage: deer, elk, and other herbivorous wildlife. With no control on horse numbers, the habitat would eventually become unsuitable for these species. Although wild horses spend much time up on the ridges, they do need water and will use riparian areas. Uncontrolled increase of the horse herd would also eventually cause degradation of riparian habitats through trampling and grazing of herbaceous and shrub species, reducing habitat and habitat quality for riparian wildlife. Sagebrush would eventually be thinned through trampling and herbivory by the horses, reducing habitat and habitat quality for the sagebrush birds.

In this alternative, there would be no short-term disturbance to wildlife from the horse roundup itself in either HMA.

Sands Basin HMA

Overuse by wild horses would lead to severely degraded habitat conditions for all wildlife species if there is no management of horse numbers. Wildlife population numbers would likely be lower and some species would likely leave to areas where suitable habitat could be found or where prey numbers were higher. Species diversity would decrease within Sands Basin HMA. Riparian species would likely be the most impacted since wild horses tend to congregate and loaf in those areas. Degraded riparian conditions would lead to negative impacts to redband trout by increasing surface fines that degrade spawning substrates and by causing a reduction in stream habitat complexity.

3.6.2.2 Alternatives 2 and 4

Four-Mile HMA

Reducing the horse herd to the lower AML of 37 would improve habitat conditions for wildlife in both the short and long term, by reducing the grazing use to levels that the land can support. By 2012, the herd would have increased to 65 in Alternative 2 and 68 in Alternative 4, just above

the upper AML, and this would mean 23 acres per horse per month on the 18,000 acre area. At this peak population they would be eating about 25% of the production, but in three out of four years the use levels would be less. At this grazing rate, there would be more forage and cover available for wildlife in the form of grasses, forbs, and shrubs than in any other alternative. Springs in the uplands would support more vegetation for food and cover for wildlife. Currently Four-Mile and Big Willow Creeks are in proper functioning condition, and would remain in that condition under this alternative.

The short-term (a few days) disturbance from the horse roundup itself would have minor local effects, causing some wildlife to move to other areas or hide. The corral sites for the gather are rocky and dominated by annual grasses; thus the gather would not damage any special wildlife habitats.

Fisheries in the HMA are limited to Big Willow Creek only. As this stream is largely inaccessible to wild horses, these alternatives would have little to no direct effect on fisheries over the short and long-terms.

Sands Basin HMA

All wildlife species would benefit from reduced numbers of horses. Reducing the overall grazing pressure through horse removal would provide both immediate and long-term improvement in habitat conditions throughout the year. Grazing management which moderates or defers use of mutually preferred vegetation would increase herbaceous forage availability and reduce reliance on alternate woody browse by livestock and horses, or inappropriate seasonal use by big game (as a winter forage base for deer). These alternatives would maintain or enhance plant diversity and vigor in the mixed shrub and sagebrush communities by promoting divergent forage selection and enhancing animal nutrition, especially on late summer through early winter ranges, thus improving wildlife habitat. Although non-wildlife grazing use, including horses, can be managed in a manner that enhances or maintains important forage attributes of seasonal big game ranges, the cumulative influence of inappropriate grazing use (timing or intensity) that exceeds range capacity (as demonstrated by range monitoring data) and depresses the vigor, density, persistence and diversity of vegetation is counterproductive to all species.

The area used to trap and hold the horses for transport would receive vegetation damage and some concentrated ground disturbance. This ground disturbance may displace some small mammals but it would be on a small scale with short-term duration. Alternative 2, and to a slightly lesser extent Alternative 4, would provide the longest period of improvement for wildlife and lead to greater recovery of habitat because horse numbers would likely remain within the desired AML.

3.6.2.3 Alternative 3

Four-Mile HMA

Reducing the horse herd in Alternative 3 to the mid-AML level of 49 from the current (2009) number of 144 would provide at least short-term improvement in habitat conditions throughout the year. There would be more grass and browse available for wildlife. However, within one year the horse herd would reach the upper AML level of 60. Without another roundup, by the year 2012 there would be 91, or half again as many horses as the upper AML of 60, for a stocking

rate of 16 acres per horse per month. At this level, horses would be eating about 35% of the production, cattle another 50%, and only 15 % would be left for wildlife and plant maintenance, which is not enough for plant maintenance alone. Horses would be competing severely year-round with wildlife for food, water, and cover, as well as trampling and degrading the crucial wildlife habitat of wet areas. Habitat quality would be on a downward trend, because the physiologic needs of the plants would not be met.

The short-term (a few days) disturbance from the horse roundup itself would have minor local effects, causing animals to move to other areas or hide. The corral sites for the gather are rocky and dominated by annual grasses, thus the gather would not damage any special wildlife habitats.

Fisheries in the HMA are limited to Big Willow Creek only. As this stream is largely inaccessible to wild horses, this alternative would have little to no direct effect on fisheries over the short and long-terms.

Sands Basin HMA

In the short term (1-2 years), removal to mid-point AML would reduce the overall grazing pressure and provide immediate improvement in habitat conditions throughout the year. However, the expected limited short term reduction in AML to the mid-point would not provide as much relief on mutually preferred forages by big game. Heavy horse use would occur at a quicker rate than if horses were reduced to the lower limit of AML and require more frequent gathers to stay within AML.

3.7 Grazing Management

3.7.1 Affected Environment – Grazing Management

Four-Mile and Sands Basin HMAs

The rangeland management program in the Four-Mile HMA includes the Willow Ridge Allotment and is currently grazed by A.L. Cattle Co. from 03/01 – 08/15 and 11/01 – 12/31 (Table 12). Water for livestock and wild horses is mainly available from springs and reservoirs during late winter to early summer.

The Sands Basin HMA is within the Sands Basin Allotment and is currently grazed by the Chipmunk Grazing Association in the spring and fall with cattle. Water for livestock and wild horses is mainly available from springs and creeks during late winter to early summer. Throughout the summer, flows diminish and water resources become dry and excessive use by wild horses in and around perennial riparian areas occurs.

Table 12. Livestock Grazing Allotments within the Four-Mile and Sands Basin HMAs.

HMA	Allotment (#)	Season of Use	#/Kind of Livestock	Active Preference
Four-Mile	Willow Ridge (00005)	03/01 – 08/15	1,115C	3,264 AUMs
		11/01 – 12/31	1,115C	1,185 AUMs
Sands Basin	Sands Basin (00521)	04/01 – 06/05	600C	911 AUMs
		10/01 – 10/31	123C	88 AUMs

¹ 100% of each allotment is within the respective HMAs.

3.7.2 Environmental Consequences – Grazing Management

3.7.2.1 Alternative 1 – No Action

Four-Mile and Sands Basin HMAs

Without periodic removal of horses, vegetation utilization rates would exceed the capacity of the area, further degrading the forage resource and deteriorating the habitat. As the productivity and composition of desirable forage species decreases, an increase in the invasion of undesirable species would occur. This decline would continue to the point that there would be both insufficient plant cover for range site protection and insufficient forage for all rangeland users, which in turn would reduce stocking rates and possible closure of the allotments, which could put the livestock permittees out of business.

3.7.2.2 Alternatives 2-4

Four-Mile and Sands Basin HMAs

The Proposed Action (Alternative 2) and to a slightly lesser extent Alternative 4, would allow present livestock use at allocated levels to continue as authorized by the land use plans and grazing permits. Present use levels would also not be affected with Alternative 3, but at year 3, wild horse numbers would be above the high end of AML and may impact future livestock grazing after that year. Wild horse utilization would decrease, especially in areas of high concentrations, such as Jump Creek, George Way Gulch, Coonrod Gulch, and Four-Mile Creek. Areas that had year round horse pressure would be largely reduced, and allow vegetation use to be deferred or rotated without wild horses being more likely to graze in the area before and after the off-date of livestock. Wild horse removal would allow livestock grazing permittees to utilize their entire allotment, while currently in areas of horse concentration; little forage is available for livestock.

Livestock may be grazing in the Willow Ridge Allotment at the time of the gather. This would cause the permittee to move livestock out of the pasture that horses are being gathered from and stress may put on the livestock when the helicopter is in the area. This would put an additional burden on the livestock operator to ensure his cattle are out of the area, but impacts would be slight and only for a short time per trap site (one day).

3.8 Cultural, Paleontological, and Historical Resources

3.8.1 Affected Environment – Cultural, Paleontological, and Historical Resources

Four-Mile HMA

The Four Mile HMA has not been systematically surveyed for cultural, paleontological, and historical resources. Previous surveys recorded prehistoric and historic sites in the HMA. Goodale's Cutoff passes through the area, which is a historic trail that dates to the early 1860s. Both trap sites are located in areas that were surveyed in 1988. No cultural sites were recorded around the trap in Section 20. In 2009, that trap area was surveyed for this proposed horse gather, but no sites were discovered.

The trap in Section 8 was surveyed and sites were recorded near the trap site in 1988. In 2009, the trap area was surveyed to identify, evaluate and monitor the sites' conditions and determine if the proposed horse gather would impact those recorded sites.

Sands Basin HMA

The Sands Basin area is a landscape that has been associated with humankind for thousands of years. The land provided aboriginal peoples and later Euroamerican settlers the opportunity to construct suitable dwellings, acquire needed natural resources and maintain an adequate subsistence. Archaeological investigations of the area are limited, only five native American and Euroamerican sites have been recorded within 1½ miles of the proposed project areas. No site is closer than ½ mile away and no site has been determined eligible for the National Register.

3.8.2 Environmental Consequences – Cultural, Paleontological, and Historical Resources

3.8.2.1 Alternative 1 – No Action

Four-Mile HMA

In the No Action Alternative, the wild horse gather would not take place. Therefore, no ground disturbances would occur and no cultural or paleontological resources would be affected.

Sands Basin HMA

In the No Action Alternative, the wild horse gather would not take place. Therefore, no ground disturbances would occur and no cultural or paleontological resources would be affected.

3.8.2.2 Alternatives 2-4

Native American Religious Concerns

The Shoshone-Paiute Tribes actively practice their culture and retain aboriginal rights and/or interests in this area. As Native American traditions and practices are tied to the elements of the natural environment, any impacts to the earth and its natural environment are of concern to the Shoshone-Paiute Tribes. For both HMAs, there are no known impediments affecting access or use of the proposed project areas for religious or traditional uses by the Tribes.

Four-Mile and Sands Basin HMAs

Alternatives 2, 3, and 4 require gathering horses and employing traps and temporary corrals to contain and process the animals prior to their transport or release. At each of the containment areas, ground disturbance is expected to occur as a consequence of site preparation and trampling. All of the trap and corral sites together with any off-road access routes proposed for this project have been or will be inventoried for cultural and paleontological resources. All sites would be avoided. For the Sands Basin HMA, no such resources have been discovered at any of these locations as result of the inventories and subsequently none would be affected by these proposed alternatives.

3.9 Recreation and Visual Resources

3.9.1 Affected Environment – Recreation and Visual Resources

The proposed areas receive a frequent amount of recreational use from motorized and non-motorized recreationists, depending upon the season. Currently the spring and fall seasons attract more visitors to these areas than do the summer and winter seasons, due to the hunting seasons and more desirable weather conditions. Recreationists visit the two HMAs on occasion to view the wild horses in their natural environment for photographs and sightseeing.

The main recreational activities within the HMA's include hunting, Off-Highway Vehicle (OHV) riding, camping, and horseback riding. Other activities include wildlife viewing, picnicking, hiking, driving for pleasure, nature study, rock hounding, and mountain bike riding.

The Recreation Opportunity Spectrum classification is used to characterize the type of recreational opportunity settings, activities, and experience opportunities that can be expected in different areas on public land. The HMA's provides a mix of semi-primitive non-motorized, semi-primitive motorized, and roaded natural settings for recreation (1999).

The off-highway vehicle designation for the HMA's is limited to existing roads and trails. An increasing amount of OHV and motorized use is occurring in the area. Cross-country motor vehicle travel is not authorized in the Four Rivers or Owyhee Resource Areas.

Four-Mile HMA

Lands located within the Four Rivers HMA are categorized as Visual Resource Management (VRM) class III. The VRM class III objective is to partially retain the existing character of the landscape and the level of change to the characteristic of the landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features or the characteristic landscape. This classification occurs where the amount of use is relatively high and scenic quality is generally good. Maintenance, construction, and reconstruction of rangeland facilities, roads, and vegetation treatment projects are permitted. In this classification emphasis is placed on construction techniques that would reduce the projects visual impacts to the natural landscape (1999).

Sands Basin HMA

Public lands within the Sands basin HMA are categorized as VRM class IV. The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic of the landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location and minimal disturbance (1999).

3.9.2 Environmental Consequences – Recreation and Visual Resources

3.9.2.1 Alternative 1 – No Action

Four-Mile and Sands Basin HMAs

If the wild horse gather did not take place, recreationists would not be affected. Visual resource conditions of the area would be maintained, and would continue the impacts to scenic quality that occur in areas of heavy wild horse use.

3.9.2.2 Alternatives 2-4

Four-Mile and Sands Basin HMAs

The Proposed Action and Alternatives would potentially limit public access along the main roads (Sands Basin and Big Flat) through the Sands Basin and Four-Mile HMA's, as well as access to roads along these segments for a short period of time. Access along these roads could be temporarily delayed (3-4 hours) during aerial operations while wild horses are being gathered. This would cause an inconvenience to travelers in the area and require them to take another route. The largest group of recreationists expected to be impacted during a fall gather would be hunters. While the gather is being conducted, hunters may be forced to locate alternative hunting areas for a short time period until the gather is completed and access to the desired location is once again granted. Following the gather, it would also be more difficult for the public to view wild horses. This may cause wild horse viewers and photographers to increase their search time for the animals.

With the exception of when aerial operations are occurring during the gather, there are no impacts expected to recreation opportunities in these areas. Short term impacts to recreation as a result of the proposed project would be minimal. There are no long term impacts expected as a result of the proposed action.

The Proposed Action and Alternative 4 would improve scenic quality in some areas as vegetative conditions improve as a result of the reduced grazing pressure from horses. In areas where trap sites are located some negative visual effects would occur by creating areas of disturbance. The proposed project and minimal impacts associated with the project are considered acceptable with the VRM objectives for this area.

3.10 Social and Economic Resources

3.10.1 Affected Environment – Social and Economic Resources

The livestock industry is an important component of the local economy in and around both HMAs. Ranchers rely extensively on public lands shared by wild horses to provide forage and maintain viable ranching operations.

Recreation, including both casual use and commercial-guided recreation, is increasing on public lands in both areas. It is anticipated that within the regional economy, positive economic impacts (income) would occur over time for local businesses' related to recreation, as recreational use continues to increase.

For a detailed discussion of the Social and Economic conditions in Owyhee County and the region influenced by public lands in the area, see the Owyhee RMP/EIS, July 1999 (pgs III-60 to III-73).

3.10.2 Environmental Consequences – Social and Economic Resources

3.10.2.1 Alternative 1 – No Action

Four-Mile and Sands Basin HMAs

Under this alternative, overall economic viability of traditional livestock grazing in both HMAs would decrease over the long term as range conditions and forage availability decline from excessive horse use. This excessive horse use is grazing use beyond the established allocation or AML for wild horses in these areas.

3.10.2.2 Alternatives 2-4

Four-Mile and Sands Basin HMAs

Under these alternatives, overall economic viability of traditional livestock grazing in both areas would not be expected to change over the long term. Continuation of present livestock grazing management combined with the AML for wild horses on the affected allotments would help to maintain the social and economic benefits currently being realized by local individuals and the community.

3.11 Cumulative Impacts

Cumulative impacts are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

3.11.1 Scope of Analysis

3.11.1.1 Wild Horses

Four-Mile HMA

The analysis area, approximately 70,552 acres within the Big Willow Management Area includes the Four-Mile HMA. This HMA is the only HMA within the analysis area. The time period analyzed includes the period 1988 through 2012, when most of the impact of gather activities would occur, the current CRMP was completed, and the Four Rivers Resource Management Plan is scheduled to be completed.

Sands Basin HMA

The analysis area, approximately 131,251 acres, includes the three HMAs in the Owyhee Front (Black Mountain, Hardtrigger, Sands Basin). These HMAs represent all herds identified in the Owyhee RMP (USDI 1999). Horses are not known to naturally move between the Sands Basin HMA and the Black Mountain/Hardtrigger HMAs; however, horses may be moved between HMAs during gathers to increase genetic variability. The time period analyzed includes the period 1997 through 2012, when the impact of gather activities is most apparent.

3.11.1.2 Vegetation and Grazing Management

Livestock grazing has a long history in the region dating back to the late 1800's. Today, it remains the dominant use of the cumulative impact assessment area. Throughout its history, ranching has remained a dispersed activity characterized by localized areas of more intensive use. The grazed acreage on private holdings is not subject to administration by the Federal government.

In order to support the management of these allotments, a variety of range improvement projects have been implemented through the years. Several springs have been developed and many miles of permanent fencing (both public and private), several troughs and cattleguards have been constructed in support of grazing management objectives in the assessment area.

Four-Mile HMA

The analysis area, approximately 70,552 acres in the Big Willow Management Area, includes grazing allotments from Emmett, ID north to Indian Valley, ID, east to Squaw Creek, and west to Little Willow Creek. It includes all or portions of 14 grazing allotments (1 of which is Fenced Federal Range). This area includes watersheds associated with the HMA. The time period considered begins in 1997 when Idaho Standards and Guidelines were initiated and ends in 2015 when all grazing permits within the area should be implementing changes required by the Standards and Guidelines.

Sands Basin HMA

The analysis area, approximately 285,000 acres, includes grazing allotments on the northeast face of the Owyhee Front from the Oregon border, south to the eastern edge of the Rabbit Creek drainage. It includes all or portions of 31 grazing allotments (10 of which are Fenced Federal Range). This area includes watersheds associated with the HMAs. The time period considered begins in 1997 when Idaho Standards and Guidelines were initiated and ends in 2015 when all grazing permits within the area should be implementing changes required by the Standards and Guidelines.

3.11.1.3 Riparian and Water Quality

Four-Mile HMA

The area considered for cumulative effects on riparian and water quality in the Four-Mile HMA includes the Big Willow Management Area and includes the time that it would be most impacted, from 1997 when Idaho Standards and Guidelines were initiated and ends in 2015 when all grazing permits within the area should be implementing changes required by the Standards and Guidelines.

Sands Basin HMA

Cumulative impacts to riparian and water quality resources are analyzed and based on the Middle Snake River-Jump Creek watershed scale. The time period analyzed includes the period 1997 through 2015, when all grazing permits within the area should be implementing changes required by the Standards and Guidelines.

3.11.1.4 Recreation and Visual Resources

Travel management planning is the proactive management of public access and natural resources in compliance with travel-related regulations and according to the best land use management principles. It involves a comprehensive approach that considers various aspects of road and trail system planning and management, specifically natural resource management; road and trail design and maintenance; and recreation and non-recreation uses of roads and trails. Within this context, travel activities are evaluated as a means of access to public lands. They are also evaluated according to the effects of motorized and non-motorized travel on public lands and resources and on the people who use them.

Four-Mile HMA

Cumulative impacts in the Big Willow Watershed include the Cascade RMP from 1988 and the upcoming Four Rivers Resource Management Plan scheduled to be completed by 2012.

Sands Basin HMA

Cumulative impacts to recreation and visual resources within the Sands Basin HMA and surrounding area (Owyhee Front) would consist of past and future Travel Management Planning efforts. The Hemingway Butte Play Area Mitigation Project (2006), the Wilson Creek Travel Management Plan (2007), and the Murphy Travel Management Plan (2009 - currently under litigation) are major planning documents affecting the Owyhee Front. The Omnibus Public Lands Management Act of 2009, Title I, Subtitle F, Owyhee Public Land Management, was recently passed and requires BLM to complete: (1) a transportation plan for the Owyhee Front by no later than one year after enactment of the Act; and (2) a transportation plan for BLM land in the county outside the Owyhee Front by no later than three years after enactment of the Act.

3.11.1.5 Wildlife/Fisheries

Four-Mile HMA

The analysis area considered is approximately 70,552 acres in the Big Willow Management Area. The time period considered begins in 1997 when Idaho Standards and Guidelines were initiated and ends in 2015 when all grazing permits within the area should be implementing changes required by the Standards and Guidelines and would include the time when the impact of gather activities is most apparent to wildlife.

Sands Basin HMA

The area considered for cumulative impacts includes the area of the Owyhee Front from Highway 95 west to Succor Creek and south to McBride Creek from 1997 when Idaho Standards and Guidelines were initiated and ends in 2015 when all grazing permits within the area should be implementing changes required by the Standards and Guidelines. This scope of analysis was chosen because the impacts of the horse gather would not be expected to have any influence beyond the area described above.

3.11.2 Environmental Consequences – Cumulative Impacts

3.11.2.1 Wild Horses

Prior to the Wild Free-Roaming Horse and Burro Act of 1971, wild horses and burros were unprotected. Wild horse and burro numbers were limited by natural processes, permittee control,

and mustanging. Management of wild horses in the Sands Basin, Black Mountain, and Hardtrigger HMAs has been completed by the BLM through several wild horse gathers since the 1971 Act. Wild horse populations and subsequent grazing impacts were dependent on adoptions, long-term holding facility capacity, and funding. Impacts to herd demographics and herd health in wild horse populations occurred from artificial management related to gathers. Increased recreation temporarily displaced wild horse populations as a result of human interaction, especially during the foaling season.

Actions that would maintain wild horse populations below the upper range of AMLs (Alternatives 2 and 4) would help maintain the short and long term health of those populations. Individually healthy populations would provide animals for relocation to other HMAs. These horses would be one of the most effective ways of maintaining overall genetic diversity and, consequently, ensuring herd viability in the analysis area over the long term. Changes in grazing management that would result in improvements in habitat conditions would have negligible (lower elevations) to slight (upper elevations) benefits to wild horses over the long term. Changes in OHV management would not be expected to occur in the Sands Basin area before 2011; therefore, benefits from improved OHV management would be as described in Section 3.10.

Much of the area has burned in the last 20-30 years and could burn in future years. Fire has drastically reduced the amount of shrubs and more would be lost in future fires. A variety of invasive weeds have established since the fires, including cheatgrass, medusahead rye, and rush skeletonweed. These weeds are poor quality forage for wild horses compared to the native grasses and forbs.

Actions that result in overpopulation and unhealthy animals (Alternatives 1 and 3) could adversely affect the long term health of those populations. Health of individual animals would be reduced and opportunities for transplanting animals would be reduced or eliminated resulting in a long-term decrease in genetic diversity and reduced herd viability.

3.11.2.2 Vegetation and Grazing Management

Four-Mile and Sands Basin HMA

Prior to the Taylor Grazing Act, livestock grazing and wild horses had significant impacts to the vegetation resources within the impact assessment area by eliminating or greatly reducing the primary under story plants. Cheatgrass was introduced into the areas in the early 1900's. The primary successional under story plants species are lacking on gentle slopes where both livestock and wild horses concentrate. The present management system has mitigated past vegetation impacts. The Sands Basin Allotment livestock grazing permit was renewed in 2002, but was stayed by Judge C. Randall Grant Jr. and will be fully processed before the 2011 grazing season.

Future activities from livestock grazing, recreation, road construction/maintenance, mining activities, and vegetation projects would continue to slightly impact the soils, vegetation, and wetland and riparian zones within the impact assessment area. Impacts from grazing are likely to change and continue to improve from present conditions. Impacts from recreation and road construction or maintenance would slightly increase from the past and present conditions.

Impacts from implementation of vegetation projects would increase short term impacts to soil, vegetation, and wetland/riparian resources, but would be a benefit in the long term. Along with the past, present, and reasonable foreseeable future actions there should be an incremental improvement in ecological condition over a period of time. If management can maintain wild horse numbers at AML and monitor livestock use, there should be a long term increase in ecological condition. There should be a lesser degree of incremental impact from the improvement in ecological condition over a period of time.

Vegetation conditions throughout the analysis area are similar to those described in section 3.6 and are generally related to elevation, precipitation, and animal use levels. Low precipitation in lower elevation areas are dominated by shrubs with annual grass understories. Upper elevation areas with higher precipitation are dominated by shrubs and perennial grasses. Within the upper elevation areas, increaser grasses (Sandberg bluegrass, squirrel tail) are more prevalent in areas receiving moderate to heavy use from livestock and/or wild horses, and decreaser grasses (Idaho fescue, bluebunch wheatgrass) are more prevalent in areas receiving none to slight use.

Maintenance of wild horse populations at or below AMLs (Alternatives 2 and 4) and improved management of livestock grazing would result in negligible to moderate improvements in vegetation conditions over the long term. The least degree of improvement would be expected in lower elevation areas where annual species dominate and wild horse and livestock use overlaps. The greatest degree of improvement would be expected to occur at upper elevations in areas where livestock and wild horse use does not overlap. This is due to competition for nutrients with the exotic annual grasses in the low elevation areas. Typically, without any major disturbance or treatment, native perennial vegetation cannot compete with these species under normal conditions.

3.11.2.3 Riparian and Water Quality

Four-Mile HMA

Cumulative impacts to riparian and water quality resources are analyzed on a watershed scale. Livestock grazing occurs concurrently with wild horse use in the Willow Ridge Allotment. This allotment is up for 10 year grazing permit renewal in 2011. Improvements made in livestock grazing (timing, duration, and season of use along with the appropriate stocking density) would coincide with an appropriate and managed wild horse population to benefit riparian and water quality resources in the Four-Mile Creek and Little Willow Creek drainages. Maintaining the current proper functioning condition of riparian area would protect water quality in Big Willow Creek, and would reduce the possibility that water quality would violate state water quality standards for temperature and bacterial levels.

Big Willow Creek was placed on the 1998 §303(d) list of impaired waters by EPA for reasons associated with temperature. It was subsequently carried forward to the 2002 Integrated Report (§303(d) list/§305(b) report). The information evaluated by IDEQ confirmed temperature is impairing the beneficial uses of Big Willow Creek.

Effective shade targets were established for Big Willow Creek based on the concept that maximum shading under potential natural vegetation equals natural background temperature levels.

The perennial segments of Big Willow Creek occurring lower in the watershed downstream of the HMA boundary lacked sufficient shade to meet targets. A reduction in solar loading (direct sunlight) and an increase in shade is necessary for these segments to meet load objectives. Stream segments on public lands segments fully met DEQ shade targets and do not negatively impact water quality in the downstream segments of this stream.

DEQ has completed a TMDL for temperature in Big Willow Creek from its headwaters to the Payette River. In addition, DEQ is proposing to place Big Willow Creek on the state's list of impaired water bodies for flow and habitat alteration and to retain it on the list for unknown pollutants.

Sands Basin HMA

Livestock grazing occurs concurrently with wild horse use in the Sands Basin and surrounding allotments. The Sands Basin Allotment is also up for 10 year grazing permit renewal.

Improvements made in livestock grazing (timing, duration, and season of use along with the appropriate stocking density) would be able to coincide with an appropriate and managed wild horse population to benefit riparian and water quality resources in the Jump Creek drainage.

Riparian vegetation improvement would eventually stabilize streambanks and slow erosional processes to more natural levels. These long-term improvements in riparian condition would positively affect water quality by decreasing in-channel sediment, and if riparian vegetation is tall enough, shade and cool the stream water. Eventually the improvements in physical and biological stream components would lead to the attainment of Idaho State water quality criteria in Jump Creek, and removal from the 303(d) list by IDEQ.

3.11.2.4 Recreation and Visual Resources

Travel Management Planning would limit motorized and mechanized uses to designated routes and in some cases reduce the current mileage available; however, over the long-term travel planning would help protect and ensure recreational access to the area. Planning would lead to the production of maps and educational information and provide users with a numbered trail system and loop opportunities, thus enhancing the overall recreation experience. Implementation of travel plans typically include, but are not limited to, such things as: installation of signs and kiosks, rehabilitation of closed routes, closure of unauthorized play areas, maintenance of designated routes, and designation of parking areas and trailhead.

By improving OHV management through route designation the BLM would minimize impacts to wildlife/wild horse habitat, reduce the introduction of invasive weeds, and decrease the conflicts among the various motorized and non-motorized recreation users, as well as interactions between recreationists and livestock. Travel planning and route designation would also improve visual resources throughout the area and prevent damage to natural and cultural resources resulting from the unauthorized proliferation of roads and trail on public lands.

3.11.2.5 Wildlife/Fisheries

Four-Mile HMA

The Four-Mile HMA constitutes about one-quarter of the Big Willow Management Area. In the area, other actions that have or could in the future affect wildlife habitat are wildfire and cattle grazing. Of these, wildfire has been and probably will be in the future the largest influence on

wildlife habitat. Well over 50% of the area has burned in the last 20-30 years, and could burn again. Cover of bitterbrush is still less than 5% in the HMA over 20 years after the wildfires. Fire in this area has drastically reduced the amount of winter range for deer and elk by eliminating shrubs for years. A variety of invasive weeds are well established in the watershed since the fires, including cheatgrass, medusahead rye, and rush skeletonweed. These weeds are poor quality forage for wildlife compared to the native grasses and forbs. Cattle grazing occurs on all the public lands in the watershed, including the Four-Mile HMA. Trends in wildlife habitat condition are static to upward under current and planned management.

The cumulative impacts of managing wild horse populations in the HMA at AML, combined with the effects of wildfire and cattle grazing, would be a modest improvement in condition of one-quarter of the public land in the watershed. In the future, this improvement could be overshadowed by potential but unpredictable wildfires, which could decrease shrubs and native grasses and forbs and increase weeds.

Sands Basin HMA

There are two main impacts with the potential to for cumulative effects. These impacts are horses in excess of AML in the HMA and impacts from the gather itself. Impacts from horses have been described throughout this document and are associated with over utilization. Impacts from the gather would consist of vegetation trampling in the holding pen area and ground disturbance. Within the scope of analysis, wildfire and livestock grazing are the only activities that would potentially lead to additional cumulative impacts. However, if wildfires are quickly suppressed and livestock management is correctly applied, there would not be over utilization of range resources.

4.0 Consultation and Coordination

On March 17, 2009, Owyhee Field Office staff met with livestock grazing permittees to discuss livestock grazing and wild horse numbers and impacts to their allotment in the herd management areas. Tribal consultation and coordination with Owyhee County was initiated on May 27, 2009 during a Wings and Roots Campfire session in the Boise District Office BLM. The scoping document was also sent to the Gem, Washington, and Payette County Commissioner's on May 27, 2009, as well as all other interested parties.

4.1 List of Preparers

Brian McCabe	Archaeologist
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Al Tarter	Natural Resource Specialist
Pat Kane	Weed Management Specialist
Steve Leonard	Wild Horse and Burro Specialist

Prepared By: Chris Robbins, Rangeland Management Specialist

Reviewed By: Buddy Green, Field Manager

4.2 List of Tribes, Agencies, Organizations, and Individuals Consulted

Shoshone Paiute Tribes	Sabrina Amidon
Animal Welfare Institute	Owyhee Cnty Natural Resources Committee
Idaho Fish and Game	Friends of Mustangs
Michael Lane	Owyhee County
A.L. Cattle Inc.	Washington County
Resource Advisory Council	Gem County
Sam Mattise	Payette County

4.3 Public Participation

A public hearing was held on September 4, 2009, to discuss the use of helicopters and motorized vehicles to capture the wild horses. During this meeting, the public was given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses. However, no public attended this public meeting and no additional new information or concerns reading this gather were brought forward.

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5.0 Appendices

5.1 Appendix 1 – Trap Site Locations

The following areas would be inventoried for trap site locations before the Four Rivers and Owyhee Wild Horse Gathers beginning on October 6, 2009 (see Appendix 3A and 3B for locations on a map). Additional trap sites may be located and inventoried in nearby areas (within 5 miles) prior to construction of trap sites.

Four-Mile HMA

1. T10N, R1W, Section 20, UTM (NAD 1983) Zone 11 541282E 4891989N
2. T10N, R1W, Section 21, UTM (NAD 1983) Zone 11 542361E 4892504N
3. T9N, R1W, Section 8, UTM (NAD 1983) Zone 11 541858E 4887158N

Sands Basin HMA

1. T1N, R5W, Section 8, UTM (NAD 1983) Zone 11 502592E 4808945N
2. T1N, R6W, Section 23, UTM (NAD 1983) Zone 11 499199E 48069057N

5.2 Appendix 2 – Standard Operating Procedures

Methods for Humane Capturing, Handling, Holding, and Transporting of Wild Horses

Helicopter Removals with or without a Contract

The helicopter drive trapping method employed for capture operations requires that horses be herded to a trap of portable panels and on extremely rare occasions to ropers who, after roping the animal, would bring it to the trap. Gathering would be conducted by using agency personnel or contractors experienced in the humane capture and handling of wild horses. The following stipulations and procedures would be followed during the contract period to ensure the welfare, safety and humane treatment of the wild horses in accordance with the provisions of 43 CFR 4700 and the Great Basin Wild Horse Gathers Capture contract.

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

a. Helicopter Drive Trapping

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

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

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

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

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

b. Helicopter Assisted Roping

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

Roping would be performed in such a manner that bands would remain together. Foals would not be left behind.

2. Other Non-Helicopter Capture Methods

a. Water Trapping

Water trapping is not applicable when animals are dispersed over a large area. This method is not applicable to use in the Four Mile and Sand Basin HMAs.

c. Bait Trapping

Bait trapping is not applicable when animals are dispersed over a large area. This method is not applicable to use in the Four Mile and Sand Basin HMAs.

d. Net Gunning

The net-gunning aerial capture technique uses weighted nets to individually capture wild animals. This method is not applicable to gather a large number of animals and is not applicable to use in the Four Mile and Sand Basin HMAs.

3. Stipulations for Portable Corral Traps/Exclosures

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

The Idaho Department of Fish and Game would be notified as soon as possible if any wildlife became injured during capture operations. Wildlife caught inside traps would be released immediately.

4. Contract Helicopter, Pilot and Communications

The contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the contractor would comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State of Idaho.

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

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

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

All incidents/accidents occurring during the performance of any delivery order would be immediately reported to the COR/PI.

5. Non-Contract Helicopter Operations

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

There would be daily briefings with the helicopter pilot, Authorized Officer, and all personnel involved in the day's operation. The purposes of this meeting would be to discuss in detail:

- all information gathered during the familiarization flight such as hazards, location of horses, potential problems, etc.;
- any safety hazards anticipated for the coming day's operation or any safety problems observed by the Authorized Officer or anyone else;
- outline the plan of action;
- delineate course of actions;
- specifically position the hazers and their responsibilities;
- logistics; and
- timing.

After each flight, capture personnel would discuss any problems and suggest solutions. This may be accomplished over the radio or on the ground as the need dictates.

A flight operations plan would be filed with the Boise Dispatch Center. This plan would describe the area to be flown and the expected time frames of flight operations. A weather forecast would be acquired from the dispatcher. There would be no flights on days of high or gusty, erratic winds or days with poor visibility. Two-way radio communication between the helicopter and the ground crew would be maintained at all times during the operation.

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

6. Animal Handling and Care

Prior to any gathering operations, the COR/PI would provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation would include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. A veterinarian will be available during gather operations.

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

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

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

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

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

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

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

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

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

a. Trap Site Selection

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

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

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

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

b. Trap/Facility Requirements

All traps, wings, and holding facilities would 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 would be constructed of portable panels, the top of which would not be less than 72 inches high for horses, and the bottom rail of which would not be more than 12 inches from ground level. All traps and holding facilities would be oval or round in design.
- b. All loading chute sides would be fully covered with plywood (without holes) or like material. The loading chute would also be a minimum of 6 feet high.
- c. All runways would be of sufficient length and height to ensure animal and wrangler safety. and may be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 6 feet above ground level.
- d. If a government furnished portable chute is used to restrain, age, or to provide additional care for animals, it would be placed in the runway in a manner as instructed by or in concurrence with the Authorized Officer.

- e. All crowding pens including the gates leading to the runways may, if necessary to prevent injuries from escape attempts, be covered with a material which prevents the animals from seeing out (plywood, burlap, snow fence etc.) and should be covered a minimum of 2 foot to 6 feet above ground level.
- f. When holding facilities are used, and alternate pens are necessary to separate mares or jennies with small foals, animals which would be released, sick and injured animals or to facilitate sorting as to age, number, size, temperament, sex, and condition, they would be constructed to minimize injury due to fighting and trampling. In some cases, the Government would require that animals be restrained for determining an animal's age or for other purposes. In these instances, the Government would provide a portable restraining chute. Either segregation or temporary marking and later segregation would be at the discretion of the COR/PI.
- g. If animals are held in the traps and/or holding facilities, a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day would be supplied. Animals held for 10 hours or more in the traps or holding facilities would 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.
- h. Separate water troughs would be provided at each pen where animals are being held. Water troughs would be constructed of such material (e.g. rubber, rubber over metal) so as to avoid injury to animals.
- i. When dust conditions occur within or adjacent to the trap or holding facility, the contractor would be required to wet down the ground with water.

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

The contractor would restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction would be done by the most humane method available. Authority for humane destruction of wild horses is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Destruction of Wild Horses and Burros and Disposal of Remains, and is in accordance with BLM policy as expressed in Instructional Memorandum No. 98-141.

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

- a. The animal shows a hopeless prognosis for life.
- b. Suffers from a chronic or incurable disease, or serious congenital defect.
- c. Requires continuous care for the relief of pain and suffering.
- d. Not capable of maintaining a body condition rating of one in a normal rangeland environment.

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

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

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

8. Motorized Equipment

All motorized equipment employed in the transportation of captured animals would be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The contractor would provide the Authorized Officer with a current safety inspection (less than one year old) of all tractor/stock trailers used to transport animals to final destination.

Vehicles would be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.

Only stock trailers with a covered top would be allowed for transporting animals from trap site(s) to temporary holding facilities. Only stock trailers or single deck trucks would be used to haul animals from temporary holding facilities to final destination(s). Sides or stock racks of transporting vehicles would be a minimum height of 6 feet 6 inches from the vehicle floor. Single deck trucks with trailers 40 feet or longer would have two (2) partition gates providing three (3) compartments within the trailer to separate animals. The compartments would be of equal size plus or minus 10 percent. Trailers less than 40 feet would have at least one partition gate providing two (2) compartments within the trailer to separate animals. The compartments would be of equal size plus or minus 10 percent. Each partition would be a minimum of 6 feet high and would have at the minimum a 5 foot wide swinging gate. The use of double deck trailers is unacceptable and would not be allowed.

All vehicles used to transport animals to the final destination(s) would be equipped with at least one (1) door at the rear end of the vehicle, which is capable of sliding either horizontally or vertically. The rear door must be capable of opening the full width of the trailer. All panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of the trailer must be strong enough, so that the animals cannot push their hooves through the sides. Final approval of vehicles to transport animals would be held by the Authorized Officer.

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

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

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

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

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

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

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

9. Special Stipulations

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

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

Gathering would be conducted when soils are dry or frozen and conditions are optimal for safety and protection of the horses and wranglers. Whenever possible, scheduling of gathering activities would minimize impacts with big game hunting seasons.

Gathers would not be conducted during peak foaling season which for this gather is March 1 through June 30, to reduce the chance of injury or stress to pregnant mares or mares with young foals.

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

Standard operating procedures in the siting and construction of traps would avoid adverse impacts from trap siting, construction, or operation to wildlife species, including threatened, endangered, or sensitive species.

10. Herd Health and Viability Data Collection

The following information would be collected from each animal captured: age, sex, color, overall health, pregnancy or nursing status. In addition, blood or hair samples may be collected from individuals within the herd.

a. Population Management Plan/Selective Addition or Removal

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

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

11. Public Participation

Prior to conducting a gather, a communications plan or similar document summarizing the procedures to follow when media or interested public request information or viewing opportunities during the gather would be prepared. The public must adhere to guidance from the agency representative and viewing must be prearranged.

12. Safety

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

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

All BLM personnel, contractors and volunteers would wear protective clothing suitable for work of this nature. BLM would alert observers of the requirement to dress properly. BLM would assure that members of the public are in safe observation areas.

BLM personnel or the contract veterinarian would accomplish the handling of hazardous, or potentially hazardous materials such as liquid nitrogen and vaccination needles in a safe and conscientious manner.

13. Responsibility and Lines of Communication

The COR/PIs, from the Boise District, have the direct responsibility to ensure the contractor's compliance with the contract stipulations.

The Field Manager and Associate District Manager would take an active role to ensure the appropriate lines of communication are established between the field, Field Office, District Office, and State Office.

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

14. Glossary

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

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

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

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

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

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

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

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

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

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

Henneke Condition Scoring System for Horses --- A system developed based upon visual appraisal and palpable fat cover, to compare the body condition of horses. Areas of the horses body which reflect changes in body fat content were selected and a condition score system developed. The areas selected as being indicative of changes in stored fat are the lumbar spinous areas; ribs, tailhead, the area behind the shoulder, neck and withers. The following is the rating system:

1). Poor, this animal is considered emaciated; 2). Very Thin, 3). Thin, 4). Moderately Thin, this is the minimum acceptable amount of body fat, but not enough for the horse to handle illness or extreme stress, 5). Moderate, the average performance horse would score within this range, 6). Moderate to Fleshy, this is a good conditioned pleasure horse, 7). Fleshy, 8). Fat, 9). Extremely Fat (Summarized from *Maintain a horse in good condition, a condition score system for horses*, by Don R. Henneke. printed in Wild Horse and Burro News.

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

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

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

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

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

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

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

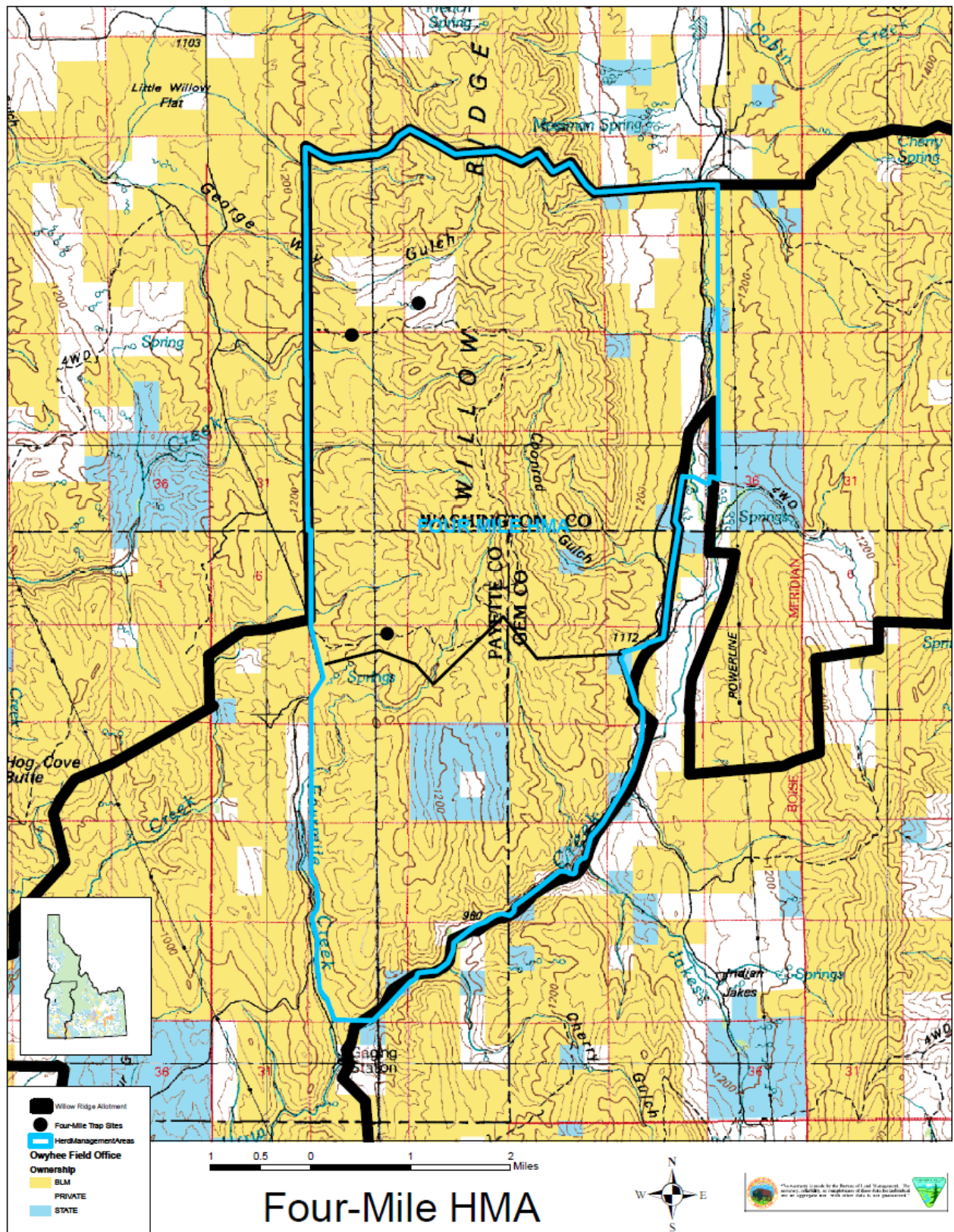
Research - Science based inquiry, investigation or experimentation aimed at increasing knowledge about wild horses conducted by accredited universities or federal government research organizations with the active participation of BLM wild horse professionals.

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

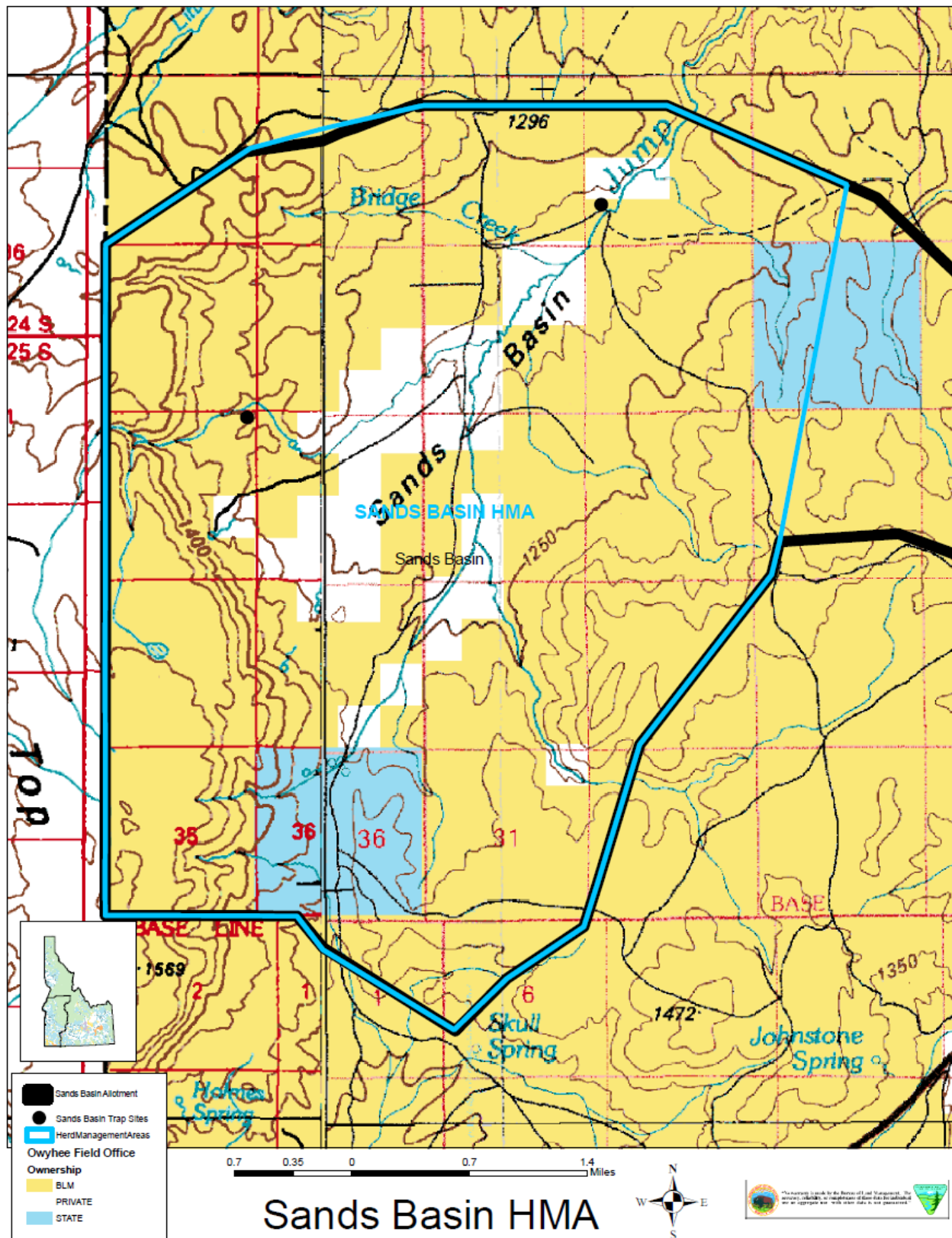
Studies - Science based investigation of specific aspects of wild horse habitat or populations in supplement to established monitoring. These investigations would not be established following rigid experimental protocols and could include drawing blood on animals to study genetics, disease and general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

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

5.3 Appendix 3 – Four-Mile HMA Boundary/Allotment Map



5.4 Appendix 4 – Sands Basin HMA Boundary/Allotment Map



5.5 Appendix 5 – Census Data and Population Gain Rates (PGR).

The Population Gain Rate was calculated from the 2003 and 2008 census data which was correlated and verified using data from the 2006 census to determine the average percent increase per year.

Year	Four-Mile HMA	Sands Basin HMA
2003	42 (census)	34 (census)
2004	$(42 * 22.8\%) + 42 = 52$	$(34 * 25.3\%) + 34 = 43$
2005	$(52 * 22.8\%) + 52 = 63$	$(43 * 25.3\%) + 43 = 53$
2006	$(63 * 22.8\%) + 63 = 78$ 76 (census)	$(53 * 25.3\%) + 53 = 67$ 64 (census)
2007	$(78 * 22.8\%) + 78 = 96$	$(67 * 25.3\%) + 67 = 84$
2008	$(96 * 22.8\%) + 96 = 117$ 117 (census)	$(84 * 25.3\%) + 84 = 105$ 105 (census)
2009	$(117 * 22.8\%) + 117 = 144$ 128 (census)	$(105 * 25.3\%) + 105 = 132$ 121 (census)

5.6 Appendix 6 – Historic Census and Removal Data

Year	Four-Mile	Sands Basin
2009 (July)	128	121
2008 (June)	117	105
2007 (Mar.)	NA	NA
2006 (Sept.)	76	64
2004	NA	NA
2003	*42	*34
2002	NA	54
2001	64	*37
2000	58	62
1999	NA	48
1998	37	47

* Horses were gathered during the calendar year.

5.7 Appendix 7 – Population Modeling

Population Modeling

The Wild Horse Population Model Version 3.2 developed by Dr. Steve Jenkins was used to estimate the population growth and size of herds five years after the gather. The data used in the statistical analysis of the Four-Mile and Sands Basin HMAs was extrapolated from the June of 2008 Census and the age and sex structure of the FY2004 gather.

The environmental and demographic model option was selected as a means to project population growth while weighing both environmental and demographic variables during “good” and “bad” years. Results of the Jenkins population model are not considered a “prediction” of what will happen to the herds in the future. Results of the model are being used as an aid to evaluate the management practices that are identified in this document and to project population growth.

The modeling analysis made the following assumptions:

1. The current age selection policy would continue through the lifetime of the modeling analysis. The model was run on a 10 year cycle to see what the population would do in out years.
2. Gathers would be completed every four years with the herds lowered to the low AML limit for Alternatives 2 and 4, and mid-point of AML for Alternative 3. No gathers would be anticipated for the No Action Alternative.
3. The herd would rise to at least the high AML limit prior to a gather (Alternatives 2-4).
4. Foals are included in the appropriate management level.
5. 85% of the herd can be located during gather operations; 15% are not found.
6. Fertility control and removal are being used as management tools in Alternative 2 only.
7. Fertility control is 90% effective in year 1, 80% effective in year 2, and 58% effective in year 3.
8. Survival probabilities and foaling rates from a study by S. H. Jenkins conducted from 1996-2000 on the Pryor Mountain HMA were used in this model.
9. The lowest and highest trials were dropped.

Population Size Graph

The population size summary graph shows cumulative frequency distributions across trials of minimum population sizes, average population sizes, and maximum population sizes. Suppose you ran 100 trials in a simulation. The minimum population size in each trial is the smallest number of horses that were present in the population in any year of that trial. This might have been the first year, or the last, or some intermediate year, and the year in which the minimum occurs is not the same for all trials. The graph will show 100 points in a light blue color, each point representing the minimum for one trial. These points are arranged in order from smallest to largest, so the leftmost point of this sequence is the minimum of the population sizes, or the smallest population size ever seen in five years of 100 trials.

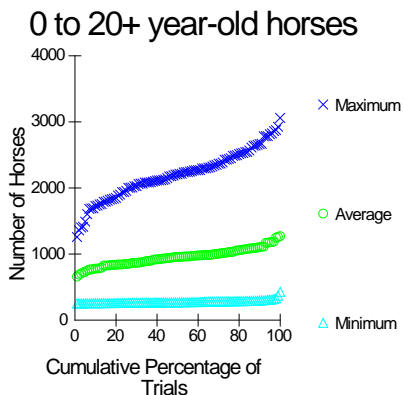
Growth Rate Graph

The growth rate graph shows the distribution of average growth rate across all trials in graphical format. The direct effects of removals are not counted in computing annual growth rates, although a selective removal may change the average foaling rate or survival rate of individuals in the population and may indirectly affect the growth rate.

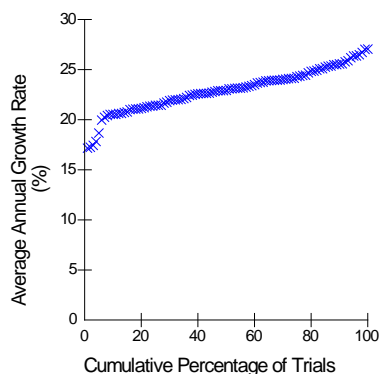
A. Four-Mile and Sands Basin HMAs

1. No Action (Alternative 1)

Population Size



Growth Rate

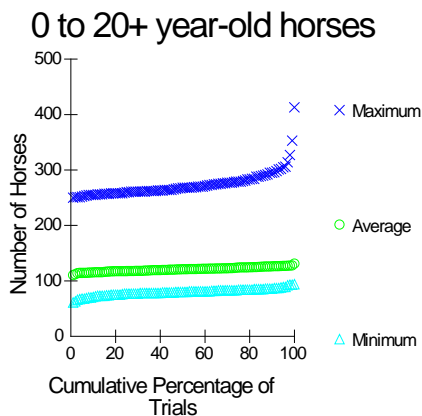


In eleven years and 100 trials, the minimum tenth percentile of 0 to 20+ year old horses obtained was 256 and the maximum 90th percentile was 2,667. The average population size across eleven years ranged from 270 to 2,210 with a median of 957.

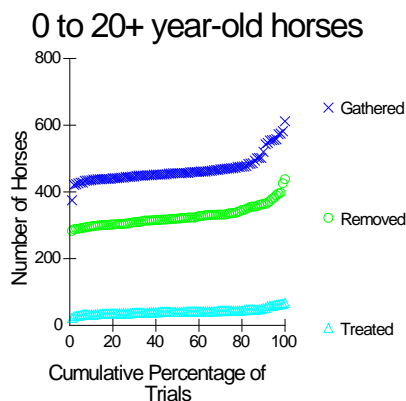
The population growth graph indicates the average growth rate over eleven years. In 100 trials, the tenth percentile growth rate was 20.5%, while the 90th percentile growth rate was 25.6%. The median growth rate was 23.0%.

2. Proposed Action (Alternative 2)

Population Size



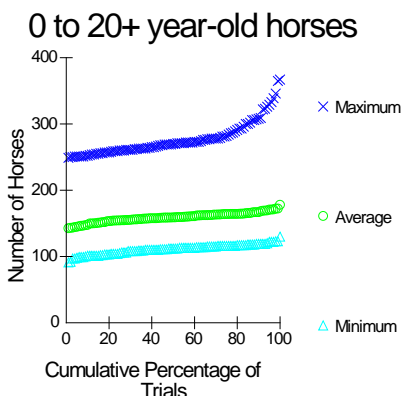
Growth Rate



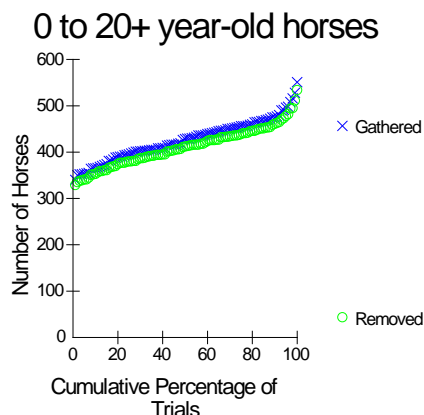
In eleven years and 100 trials, the minimum tenth percentile of 0 to 20+ year old horses obtained was 72 and the maximum 90th percentile was 296. The average population size across eleven years ranged from 80 to 268 with a median of 121.

The population growth graph indicates the average growth rate over eleven years. In 100 trials, the tenth percentile growth rate was 15.8%, while the 90th percentile growth rate was 21.2%. The median growth rate was 18.5%. The calculated population gain rate per Appendix 5 for this population is 22.8%.

3. Alternative 3 Population Size



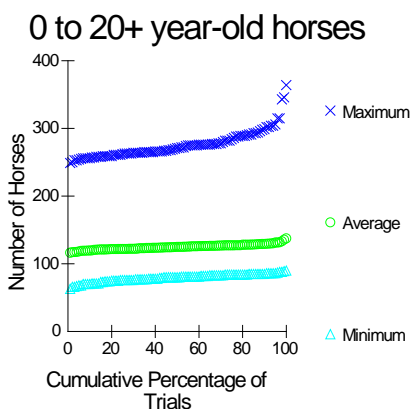
Growth Rate



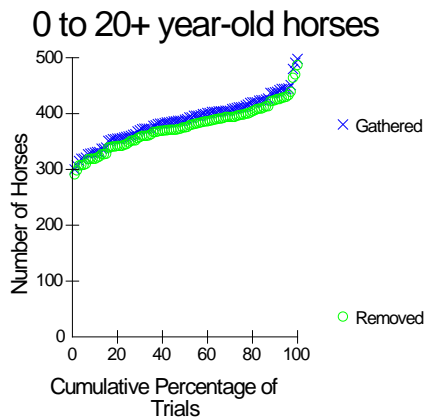
In eleven years and 100 trials, the minimum tenth percentile of 0 to 20+ year old horses obtained was 101 and the maximum 90th percentile was 308. The average population size across eleven years ranged from 112 to 270 with a median of 159.

The population growth graph indicates the average growth rate over eleven years. In 100 trials, the tenth percentile growth rate was 19.2%, while the 90th percentile growth rate was 26.8%. The median growth rate was 23.1%.

4. Alternative 4 Population Size



Growth Rate



In eleven years and 100 trials, the minimum tenth percentile of 0 to 20+ year old horses obtained was 70 and the maximum 90th percentile was 300. The average population size across eleven years ranged from 80 to 271 with a median of 125.

The population growth graph indicates the average growth rate over eleven years. In 100 trials, the tenth percentile growth rate was 20.4%, while the 90th percentile growth rate was 25.9%. The median growth rate was 23.2%.

Summary

As the population model illustrates, Alternative 2 has the lowest average population over 11 years and the lowest growth rate over 10 years. With the No Action Alternative, wild horse numbers are predicted to be 957 horses over the two HMAs.

5.8 Appendix 8 – IM # 2005-206

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

August 10, 2005

In Reply Refer To:
4710 (WO 260) P
Ref: IM 2004-138
IM 2004-151

EMS TRANSMISSION 08/16/2005
Instruction Memorandum No. 2005-206
Expires: 09/30/2006

To: All Field Officials (except Alaska)
From: Assistant Director, Renewable Resources and Planning
Subject: Gather Policy & Selective Removal Criteria

Program Area: Wild Horse and Burro Program

Purpose: This Instruction Memorandum (IM) establishes gather policy and selective removal criteria for wild horses and burros.

A. Gather Requirements

1. Appropriate Management Level Achievement (AML)

Periodic removals will be planned and conducted to achieve and maintain AML and be consistent with AML establishment and removal decisions. Removals below AML may be warranted when a gather is being conducted as an “emergency gather” as defined in I.M. 2004-151 or where significant rationale is presented to justify a reduction below AML

2. National Environmental Policy Act (NEPA) Analysis and Decision

A current NEPA analysis and gather plan is required. This NEPA analysis and determination to remove excess animals must include and be supported by the following elements required by case law and the Public Rangelands Improvement Act (1978): vegetative utilization and trend, actual use, climatic data and current census. Along with standard components, the NEPA analysis must also contain the following:

- a. Results of population modeling that forecast impacts to the Herd Management Area's (HMA's) population resulting from removals and fertility control treatments.
 - b. The desired post-gather on-the-range population number, age structure and sex ratio for the managed population.
 - c. Fertility control will be considered in all Gather Plan/NEPA documents (IM No. 2004-138) and will be addressed in the population model analysis. A "do not apply" decision will be justified in the rationale.
 - d. The collection of blood samples for development of genetic baseline data.
3. Where removals are necessary to achieve or maintain thriving natural ecological balance, all decisions shall be issued full force and effect under the authority of 43 CFR § 4770.3(c).
 4. All gathers that have been approved by Washington Office (WO) through the annual work plan process and that are listed on the National Gather Schedule may proceed without further approval. Changes to the gather schedule involving increased removal numbers for listed gathers, adding new gathers, or substituting gathers require approval by WO-260. Requests for such gathers will be submitted using Attachment 1 to WO-260, Reno National Program Office (NPO), for review and approval by the WO-260 Group Manager.

No WO approval is required for the removal of up to 10 nuisance animals per instance unless a national contractor conducts the removal.
 5. A gather and removal report (Attachment 2) is required for each wild horse and burro gather. Partial completion reports shall be filed periodically (every 2 to 5 days) during large lengthy gathers. A final report for all gathers will be submitted to the State WH&B Lead and WO-260, NPO, within ten days of gather completion.

B. Selective Removal Requirements

The selective removal criteria described below applies to all excess wild horses removed from the range. These criteria are not applicable to wild burros.

When gathers are conducted emphasis would be placed on the removal of younger more adoptable animals. However, the long term welfare of wild horse herds is critical and it is imperative that close attention be given to the post-gather on-the-range herd sex ratio and age structure to assure a healthy sustainable population.

Animals with conditions that may prevent adoption should be released to the range if herd health would not be compromised or harmed. Example conditions are disease, congenital or genetic defects, physical defect due to previous injury, and recent but not life threatening injury.

1. Age Criteria: Wild Horses will be removed in the following priority order:

a). *Age Class -Five Years and Younger*

Wild horses five years of age and younger should be the first priority for removal and placement into the national adoption program.

b). *Age Class - Six to Fifteen Years Old*

Wild horses six to fifteen years of age should be removed last and only if management goals and objectives for the herd can't be achieved through the removal of younger animals.

Animals encountered during gather operations should be released if, in the opinion of the Authorized Officer, they may not tolerate the stress of transportation, preparation and holding but would survive if released. Older animals in acceptable body condition with significant tooth loss and/or excessive tooth wear should also be released. Some situations, such as removals from private land, total removals, or emergency situations require exceptions to this.

c). *Age Class Sixteen Years and Older*

Wild horses aged sixteen years and older should not be removed from the range unless specific exceptions prevent them from being turned back and left on the range.

C. Potential Exceptions to Selective Removal Requirements

1. Nuisance animals
2. Animals outside of an HMA
3. Land use plan or activity plan identifies certain characteristics that are to be selectively managed for in a particular HMA (Examples: Spanish characteristics, Bashkir "Curly" or others).
4. Total removals required by law or land use plan decisions
5. Court ordered gathers
6. Emergency gathers (see IM 2004-151)
7. Removal of wild horses treated with fertility control PZP. Specific instructions are outlined in IM 2004-138 in regards to removal of these animals.

Timeframe: The wild horse and burro gather and selective removal requirements identified in this IM are effective immediately and will expire on September 30, 2006.

Budget Impact: Once AML is attained, it will cost approximately \$1.7 million in additional gather costs annually to implement the selective removal policy. This action, on an annual basis, will avoid removal of about 1,500 unadoptable animals (older than five years) that would cost about \$10 million to maintain in captivity over their lifetime.

This policy will achieve significant cost savings by minimizing the numbers of less adoptable animals removed prior to the achievement of AML and making the removal of older animals negligible in future years.

Background: The 1992 Strategic plan for the WH&B program defined criteria for limiting the age classes of animals removed so that only the most adoptable animals were removed. The selective removal criteria from Fiscal Years 1992 through 1995 allowed the removal of animals five years of age and younger. In 1996, because of drought conditions in many western states, the selective removal policy was changed to allow for the removal of animals nine years of age and younger. In 2002, the removal policy was modified to allow for prioritized age specific removals: 1st priority remove five years of age and younger animals, 2nd priority 10 years and older and last priority animals aged six to nine years if AML could not be achieved.

This selective removal policy provides for the long term welfare of on the range populations, emphasizes the removal of the most adoptable younger animals to maintain and achieve AML and directs that older horses less able to stand the rigors of capture, preparation, and transportation stay on the range.

Manual/Handbook Sections Affected: The gather and selective removal requirements do not change or affect any section of any manual or handbook.

Coordination: Varying policies on selective removal have been in place and coordinated with field staffs since the early 1990's. The revised policy was developed by the WO, circulated to field offices for review and comment, and presented to the National Wild Horse and Burro Advisory Board. In addition, the concept of selective removal was part of the FY 2001 Strategy to Achieve Healthy Lands and Viable Herds; The Restoration of Threatened Watersheds Initiative that was widely communicated to Congress and the general public.

Contact: Questions concerning this policy should be directed to Dean Bolstad in the Wild Horse and Burro National Program Office, at (775) 861-6611.

Signed by:

Authenticated by:

Laura Ceperley

Barbara J. Brown

Acting Assistant Director

Policy & Records Group, WO-560

Renewable Resources and Planning

5.9 Appendix 9 – Capture and Removal Procedures

The Boise District would conduct gathers in two herd management areas during October 6th through October 13th. The Idaho Wild Horse Management (IWHM) Core Team would direct gather operations and a contractor would be hired to conduct the trapping and trailering of wild horses to the Boise District Corrals on Pleasant Valley Rd.

Multiple capture sites (traps) may be used to capture wild horses from the HMAs. Whenever possible, capture sites would be located in previously disturbed areas. All capture and handling activities (including capture site selections) would be conducted in accordance with Standard Operating Procedures (SOPs) described in Appendix 2. Additional trap sites within 5 miles may be identified and inventoried prior to gather if new locations would provide wild horses a shorter distance to run and easier access to get equipment to and horses gathered into.

An APHIS Veterinarian has been requested to be on-site throughout the duration of the gather operations to examine animals and make recommendations to the Core Team Specialists for care and treatment of injured horses. Consultation with a veterinarian would take place prior to euthanasia in accordance with IM # 2009-041.

Young foals that are gathered as orphans that are weak or need special care would be adopted to qualified adopters immediately or given to horse rescue volunteers. Every precaution would be taken to ensure that young or weak foals are safely gathered and cared for.

Impacts would be kept to a minimum by following the Standard Operating Procedures described in Appendix 2.

The pilot for this horse gather would be provided through an existing contract with the BLM. In accordance with BLM and Office of Aircraft Service (OAS) regulations, no BLM personnel would be allowed in the helicopter during the actual moving of horses. The decision regarding bands of horses to be captured would be made by the Boise District Wild Horse and Burro Program Lead during a pre-gather flight. Bands of horses located outside the HMA boundary would be gathered or driven by helicopter back into the HMA.

Existing roads and trails would be used to move horses to the trap to the greatest extent possible.

Other safeguards to ensure the safety of the horses and people would include:

1. Allotment and pasture fences would be rolled back, as appropriate, from the path of horses en route to the temporary traps.
2. Use of the temporary traps would ensure that horses would not have to travel excessive distances. This is especially critical for foals.
3. The rate of movement of horses to the trap would not exceed those set by the BLM authorized officer, taking into account the distance to the trap, the prevailing weather

conditions, the presence of foals, and the general condition of the horses. Generally, horses would be moved an average of 5-6 miles per hour or less to avoid stress.

4. The gathering would take place during early October when most foals are older than four months. Young foals would not be pushed more than 5 miles. All precautions would be taken to ensure safe capture.

Data Collection

The following data would be collected during the gather, to assure an adequate database of genetic diversity, historical origins of the herd, and unique markers.

1. **Sex ratio/Age Structure.** The number of release animals along with their sex and age would be recorded. An estimate of the number, sex, and age of animals that were not gathered would be estimated and recorded.
2. **Reproduction and Survival.** Information on reproduction and survival would be collected to the extent possible, through documentation of the wild horses captured during the gather, and the age of those released following the gather.
3. **Characteristics.** Color and size of the animals would be recorded. The type of horse would be noted if it can be determined, or a general impression of the type of horses gathered within the HMA. The blood analysis would provide a comparison with domestic breeds and other wild populations that have been tested.
4. **Other Data.** All other data believed to be essential to the population management effort would be collected during the gather. This may include parasite load, disease, percentage of pregnant mares, or other data.

Holding and Transporting Procedures

Captured animals would be transported by truck from the temporary trap sites to the Boise District Corrals in Boise, where they would be separated by sex, age class, and wet/dry mares and injured animals. Food and water would be available if it became necessary to hold horses at the temporary trap site longer than 12 hours. Older horses (16 years old and over) may be separated and returned to the herd areas, while younger animals would be removed. The veterinarian would do a visual examination of each horse either at the trap site or immediately after they arrive in Boise to ensure that there are no physical or biological abnormalities or life threatening conditions present. Preparation would consist of freeze branding, aging, worming, blood samples for Coggins testing, and inoculations. Horses would then be available for private adoption through the BLM adoption program.

All branded horses caught during the gathering process would be impounded at the corrals in Boise until the owner can provide proof of ownership of the horse. Proof of ownership would be subject to the laws of the State of Idaho. A willful trespass fee per Animal Unit Month (AUM) and a prorated cost of the removal would be charged to retrieve these animals. Unclaimed branded animals would be turned over to the Idaho State Brand Inspector.

All medical waste generated during the course of operations will be handled and disposed of by the licensed veterinarian. The liquid nitrogen will be handled only by experienced BLM personnel. The hazmat coordinator will be notified in the case of nitrogen spillage. Fragile soils will be avoided when selecting trap and other construction sites, including limited amount and kind of off-road vehicular activity. Compliance and consistency with the state nonpoint source management plan, state water quality standards and the Clean Water Act (CWA) is mandatory. The CWA places responsibility for protection of water quality with the states and requires federal agency compliance.

Destruction of Injured Horses

Injured or lame horses would be destroyed by the veterinarian or a BLM employee only after approval by the BLM authorized officer. Animals would be destroyed in the most humane manner possible by lethal injection or with a firearm. Only injectable barbiturates (e.g. sodium phenobarbital) would be permitted for use as euthanasia agents. Firearms would be used only as a last resort where a horse cannot be safely restrained for the administration of drugs. At no time would carcasses or any part thereof be sold or processed into a commercial product.

5.10 Appendix 10 – Standard Operating Procedures for Fertility Control Treatment

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

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

coordinated through NPO. After expiration of the three year holding period, the animal may be placed in the adoption program or sent to a long-term holding facility.