

**RIDDLE MOUNTAIN
AND KIGER HERD
MANAGEMENT AREAS
WILD HORSE
GATHERING**

**ENVIRONMENTAL ASSESSMENT
OR-025-03-027-075**

**Bureau of Land Management
Burns District Office
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Hines, Oregon 97738**

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CHAPTER I: INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

With passage of the Wild Horse and Burro Act (Act) of 1971, Congress found that "Wild horses are living symbols of the pioneer spirit of the West". In addition, the Secretary was ordered to "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." From the passage of the Act, through present day, the Burns District Bureau of Land Management (BLM) has endeavored to meet the requirements of this portion of the Act. The procedures and policies implemented to accomplish this mandate have been constantly evolving over the years.

Throughout this period, BLM experience has grown, and the knowledge of the effects of current and past management on wild horses has increased. For example, wild horses have been shown to be capable of 18 to 25 percent increases in numbers annually. This can result in a doubling of the wild horse population about every 3 years. At the same time, nationwide awareness and attention has grown. As these factors have come together, the emphasis of the wild horse and burro program has shifted.

Program goals have expanded beyond simply establishing "thriving natural ecological balance" by setting an Appropriate Management Level (AML) for individual herds, to include achieving and maintaining viable, vigorous, and stable populations.

The Riddle Mountain and Kiger Herd Management Areas (HMAs) are analyzed for gathering in this document. The gathering of these HMAs are analyzed together in this document because they are on adjacent portions of the landscape, with similar ecology, the economics of gathering these HMAs during the same time period and for the reasons listed below:

The wild horses in these HMAs exhibit Spanish Mustang characteristics and are known as the Kiger Mustangs. The main objectives of management of these HMAs are to maintain healthy and sustainable herds that exhibit the dun factor colors and the physical characteristics of the Spanish Mustang. Periodically, exchange of stallions and/or mares between Riddle Mountain and Kiger HMAs is conducted by the BLM to maintain the genetic diversity of the herds. The HMAs are managed under the same Herd Management Plan which was completed in 1996. These HMAs are a designated Area of Critical Environmental Concern (the Kiger Mustang ACEC) which was designated to perpetuate the unique characteristics of the wild horses in these HMAs (see ACEC section for more detail).

AMLs for these HMAs have been previously established based on monitoring data and following a thorough public review. Documents containing this information are available for public review at the Burns District Office.

The numbers, age, and sex of animals proposed for removal are in conformance with The Wild Horse Population Model Version 3.2 developed by Dr. Steve Jenkins, Associate Professor, University of Nevada, Reno. The parameters used and the modeling runs completed for these HMAs are filed with the Riddle Mountain and Kiger Wild Horse Management Area Plan.

The 28,021-acre Riddle Mountain HMA is located approximately 50 air miles southeast of Burns, Oregon, and is southeast and adjacent to the Riddle Mountain portion of Steens Mountain (see general location map). Topography varies from gently rolling hills with valley bottoms to steep mountain slopes. The elevation varies from approximately 4,400 to 6,700 feet. The dominant plant communities are mountain big sagebrush/ bunchgrass, low sagebrush/bunchgrass with many of these plant communities encroached by juniper, some to the point of currently being juniper woodlands.

The 36,618-acre Kiger HMA is located approximately 45 air miles southeast of Burns, Oregon, and 2 miles east of Diamond, Oregon, on Steens Mountain (see the general location map). The topography and plant communities are as described for the Riddle Mountain HMA. The elevation varies within the HMA from approximately 4,400 to 6,500 feet.

The purpose of the action is to achieve and maintain wild horse AMLs which reflect the normal thriving ecological balance, to collect information on herd characteristics, to determine herd health, to maintain sustainable rangelands, and to maintain a healthy and viable wild horse population.

The Riddle Mountain and the Kiger HMAs were last gathered in 1999. A wild horse census of both HMAs was completed on September 17, 2002. This census indicated that within Riddle Mountain HMA there were 97 horses or 73 percent above the high end of the AML which is 33 to 56 horses. It is estimated with this year's foal crop there will be 116 animals which is 107 percent above the high end of AML.

The September 17, 2002, census indicated that within the Kiger HMA there were 141 horses within and adjacent to the HMA or 72 percent above the high end of the AML which is 51 to 82 horses. It is estimated with this year's foal crop there will be 169 horses which is 106 percent above the high end of AML.

Portions of the uplands in both HMAs have received heavy utilization on forage species with the combined use from wild horses, wildlife, and livestock. The livestock are within permitted numbers and are on management systems which provide periodic growing season rest and change the timing of grazing to allow forage plants to complete their reproductive cycle. Within Kiger HMA, Yank Springs, Yank Creek, the northern 3 miles of Swamp Creek, and Frog Creek riparian plant communities are being negatively impacted due to the concentration of horses resulting from heavy to severe utilization within these riparian areas.

The Riddle Mountain herd depends on private land water sources in the Oriana Flat and Squaw Creek areas. With the current horse use there is competition for forage between livestock, wildlife, and horses on this private land. There are wild horses that have moved onto private lands in the Clark Field which is outside the HMA.

Although availability of water for horses is not a problem in these HMAs during this drought, the continued high level of forage utilization added to the existing stress on vegetation from drought since the year 2000 may result in loss of forage species within portions of these HMAs where the horses concentrate.

Therefore, horses need to be reduced in number to prevent further resource degradation.

Objectives include:

1. Reestablish the preselective removal gather sex distribution toward a 50 percent mare, 50 percent stud ratio as indicated by herd sex structure found during the first documented BLM gather in this area.
2. Reestablish preselective removal gather age class distribution toward a more "natural" year gather.
3. Reestablish or maintain herd characteristics typical of the Riddle Mountain and Kiger herds at the time of the passage of the Act.
4. Maintain the genetic diversity of the Riddle Mountain and Kiger herds.
5. To maintain the genetic diversity, collect information on herd characteristics and to determine herd health as many horses as possible will be captured in each HMA. As many as 116 horses in the Riddle Mountain herd and 169 horses in the Kiger herd would be captured. To maintain a thriving ecological balance between horses, wildlife, livestock and vegetation, approximately 83 horses would be removed from the Riddle Mountain herd and approximately 118 horses would be removed from the Kiger herd (based on the 2002 census) gathering to the low end of AML in each HMA, that is 33 and 51 animals, respectively.

CONFORMANCE WITH EXISTING LAND USE PLANS

The Three Rivers Resource Management Plan (RMP) which directs the management in the project area, approved in September 1992 has been reviewed. The proposed action is in conformance with this document (Chapter 2, Pages 43 to 50).

Relationship to Statutes, Regulations, Policies, Plans, or Other Environmental Analyses

This action is governed by the Wild Horse and Burro Act of 1971 (Public Law (PL) 92-195 as amended) and Title 43 Code of Federal Regulations (CFR), Part 4700. Gathering and disposal of the wild horses would be in accordance with PL 92-195 as amended by PL 94-579 (Federal Land Policy and Management Act (FLPMA)) and PL 95-514 (Public Rangelands Improvement Act (PIRA)). Section 302(b) of FLPMA states that all public lands are to be managed so as to prevent unnecessary or undue degradation of the lands. This action is also in conformance with the Steens Mountain Cooperative Management and Protection Act of 2000(Public Law 106-399).

The following are excerpts from CFRs:

- 1) 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."

- 2) 43 CFR 4710.3-1 – "Herd Management Areas shall be established for maintenance of wild horse and burro herds."
- 3) 43 CFR 4180.2(b) – "Standards and guidelines must provide for conformance with the fundamentals of 4180.1."

Gathering excess horses conforms to the Standards for Rangeland Health and Guidelines for Livestock Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington, August 12, 1997 (S&Gs; Appendix D). These S&Gs were developed with full public participation and in consultation with southeastern Oregon's Resource Advisory Council. They have been reviewed by the Departmental Review Team and found in compliance with the requirements of the regulations.

The proposed action is consistent with the 1991 Final Oregon Wilderness Environmental Impact Statement the Endangered Species Act Section 2(c) and 7(a)2.

The Three Rivers RMP, which constitutes the land use plan for the Three Rivers Resource Area, stresses the prevention of excess utilization of vegetative resources. In addition, the gathering of excess horses is consistent with the Smyth-Kiger (#5331), Happy Valley (#5309), and Burnt Flat (#5313) Allotment Management Plans, the Kiger Mustang ACEC plan of 1996 and the Riddle Mountain and Kiger HMA plan of 1996. The proposed action and alternative are in conformance with State, local and tribal laws, regulation and land use plans.

CHAPTER II: ALTERNATIVES INCLUDING THE PROPOSED ACTION

The proposed action and alternatives represent a reasonable range of alternatives based on the issues and goals identified through public scoping efforts.

A. Alternative 1 (Proposed Action)

The proposed action is to capture during the fall of 2003 as many as 116 horses in the Riddle Mountain HMA and 169 horses in the Kiger HMA (as close to 100 percent as practical) beginning in September of 2003, and continuing until completed. This would include removing approximately 83 horses from the Riddle Mountain HMA and approximately 118 horses from the Kiger HMA (based on the current census) and providing for the remaining population to be at the low end of AML for each HMA, which is 33 and 51 animals, respectively. This action would also include determining sex, age, and color, acquiring blood samples, assessing herd health (pregnancy/parasite loading/physical condition, etc.), sorting individuals as to age, size, sex, temperament and/or physical condition, and returning selected animals based on physical and conformation characteristics as identified in the HMA plan, primarily in the 6 to 10-year age group. This would ensure a vigorous and viable breeding population, reduce stress on vegetative communities and wildlife, and be in compliance with the Act and land use plans.

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. The method of capture to be used would be drive trapping with a helicopter. All capture and handling activities (including capture site selections) would be conducted in accordance with Standard Operating Procedures (SOPs) described in Attachment 1. All proposed trap sites would have an archaeological survey, sensitive plant survey and, depending on habitat, a pygmy rabbit survey to ensure avoidance of impacts to sensitive species. Selection of capture techniques would be based on several factors such as herd health, season of the year, and environmental considerations. A written Cooperative Agreement would be attained from the cooperating landowner if it is necessary to locate a capture site on private land. Noxious weed monitoring would be completed at trap sites for 2 to 3 years following gathering.

Determination of which horses would be returned to the range would be based on an analysis of existing population characteristics which are the dun factor colors, physical and conformation characteristics of Spanish Mustang horses. HMA objectives are to perpetuate the Spanish Mustang characteristics of the herds (see detailed description of colors and physical traits in the wild horse portion of the Affected Environment section).

B. Alternative 2 (No Action)

Under this alternative, wild horses would not be removed from the Riddle Mountain and the Kiger HMAs during September 2003. The existing population of 116 horses in the Riddle Mountain HMA and 169 horses in Kiger HMA would continue to increase at approximately 20 percent per year.

C. Alternatives Considered but Eliminated from Further Analysis

1. Alternative gathering methods were considered such as hay and water trapping. These methods are impractical due to the abundance of water sources and palatable forage available within these HMAs. Water and forage need to be scarce to employ these methods of trapping. Also, rounding up wild horses with saddle horses alone has proven to be inefficient and impractical.

The helicopter/roping method of gathering entails moving wild horses to a roping site by helicopter and then capturing the horses by roping. This is feasible, but this technique has only been used in limited circumstances where a small number of wild horses were difficult to trap. It poses a safety hazard to wild horses, personnel, and their saddle horses. Due to these reasons, this alternative as a primary method of gathering has been eliminated from further consideration.

2. Closure of the area to livestock use, or reduction of permitted use, was eliminated from consideration since it would not meet existing law, regulation, policy, nor concur with previous land use plan decisions. The Wild and Free Roaming Horse and Burro Act does require that these areas of public lands be managed for wild horses but states under Section 2a (Act) that even in case of ranges that are devoted principally for wild horse management, it is not necessary to devote these lands exclusively to their welfare in keeping with multiple-use management concept for public lands, but rather that these determinations be made through the land use plans.
3. Another alternative considered was wild horse management using fertility control measures to regulate the wild horse populations. This could be used as the only method of population control or in conjunction with other methods. This alternative was eliminated from further analysis because there is currently a strong public demand to adopt Kiger Mustangs and gathered animals are easily adopted. Furthermore, the immunocontraceptive vaccine has not been formally approved by the Food and Drug Administration for management based applications. Even with formal approval, an effective remote delivery methodology (aerial or water based) has not been developed for current formulations. The current data suggest that repeated long-term applications of the vaccine may affect fecundity.

CHAPTER III: AFFECTED ENVIRONMENT

Introduction:

The following critical elements of the human environment and other potential concerns were considered and determined not to be known to be affected nor impacted by the proposed action or alternatives and, therefore, will not be discussed further in this Environmental Assessment:

Adverse Energy Impact
Air Quality
Environmental Justice
Farmlands (prime or unique)
Floodplains
Hazardous Materials
American Indian Religious Concerns
Paleontology
Wild and Scenic Rivers
Water Quality (drinking/ground water)

The critical elements of the human environment which may be affected by the proposed action and or alternatives are:

ACECs
Cultural Heritage
Migratory Birds
Noxious Weeds
Special Status Species (fauna and flora)
Wilderness and Wilderness Study Areas (WSAs)

These critical elements will be described below:

A. Critical Elements

1. Areas of Critical Environmental Concern

The Kiger Mustang ACEC was analyzed in the Three Rivers Resource Management Plan/Environmental Impact Statement (1992). It was designated in 1992 (*Federal Register*, Volume 57, No. 202, Page 47671). This was established to designate the Kiger and Riddle Mountain HMAs 64,639 acres as the Kiger Mustang ACEC with the purpose of perpetuating the unique characteristics of the wild horses within these HMAs. These characteristics are the conformation, dun factor colors, markings and size which are typical of the Spanish Mustang type of wild horses (see detailed description under wild horses in this section).

2. Cultural Heritage

Various portions of the HMAs have been inventoried for cultural resources. The entire area, inclusive of the HMAs, was used by prehistoric people for hunting and gathering and by homesteaders settling the region. There is potential of historic and prehistoric sites within the HMAs. There are several cabins which are remnants of homesteads within the HMAs. There are no known cultural sites within the areas that have been used to trap wild horses in the past.

3. Migratory Birds

Migratory birds are known to use the project area for nesting, foraging, and resting as they pass through on their yearly migrations.

4. Noxious Weeds

There are several recorded noxious weed infestations within the Kiger HMA.

Recorded noxious weed infestations occupy approximately 75 acres within the HMA. The sites are 41 acres of Canada thistle, 10 acres of bull thistle, and 23 acres of perennial pepperweed. Noxious weed inventory and monitoring has not been completed for the HMAs. Medusaehead rye is expanding into both HMAs and there are unconfirmed reports of whitetop and Russian knapweed within both HMAs.

5. Special Status Fauna

Greater sage-grouse are found within the HMAs which contain spring, summer, and fall habitat. This species has leks within the HMAs and the area provides nesting and foraging habitat. Pygmy rabbits may be found on some of the lower elevation deep soil Wyoming sagebrush sites. Ferruginous hawks are known to be present within the HMAs. The Columbia spotted frog, which is a candidate species for listing as threatened, has been located on portions of Steens Mountain and may be found within these HMAs. The inland redband trout, a BLM tracking species, and Malheur mottled sculpin, a BLM assessment species are found in streams within the HMAs. Bighorn sheep are found in the Squaw Creek area of the Riddle Mountain HMA.

6. Special Status Flora

There are several Special Status plant sites in the Riddle Mountain HMA. Short-lobe penstemon (*Penstemon seorsus*) is a Bureau tracking species found in the juniper-sagebrush communities. This species also occurs within the Kiger HMA. Simpson hedgehog cactus (*Pediocactus simpsonii* var. *robustior*) is a Bureau tracking species which occurs on high elevation barren rocky areas on Steens Mountain. Back's sedge (*Carex backii*) is a Bureau assessment species which has been found in riparian areas that adjoin Kiger HMA. Smyth and Yank Creeks within Kiger HMA have similar habitat to where this species has been found. It is likely these riparian communities contain this species.

7. Water Quality

The only perennial stream within the Riddle Mountain HMA is Squaw Creek. Within the Kiger HMA there are several perennial streams: Yank Creek, Swamp Creek, Smyth Creek, and Frog Creek. None of the streams within the HMAs have been identified as water quality limited streams and are not on the State Department of Environmental Quality water quality limited streams 303(d) list. Data is lacking on water quality for most streams and springs within these HMAs. Yank Springs is major perennial spring which feeds Yank Creek. Water temperature data was collected in Yank Springs from June 2002 to April 2003. Water temperatures during this period ranged from 37 degrees Fahrenheit to 53 degrees Fahrenheit. None of these streams or Yank Springs are used for human consumption.

8. Wetlands and Riparian Zones

There are no wetlands within the HMAs. Yank Creek and Yank Springs riparian plant communities are in early seral succession and lack deciduous woody species regeneration. There has not been a functionality assessment completed on either the stream or the spring. This spring source and the stream riparian area are grazed seasonally by cattle and year-round by wild horses resulting in severe utilization. The northern 3 miles of Swamp Creek and its tributary, Frog Creek, are functioning at-risk with the trend being not apparent. The riparian plant community in this segment of the streams lacks deciduous woody regeneration; the remainder of this stream is in Proper Functioning Condition (PFC) with a healthy riparian plant community. The remainder of Swamp Creek, Smyth Creek, and Squaw Creek are in PFC with healthy riparian plant communities.

9. Wilderness and Wilderness Study Areas

The majority of the Riddle Mountain HMA that is public land is within the Stonehouse WSA (2-23L). There are no wilderness areas or WSAs within the Kiger HMA.

B. Noncritical Elements

1. Wild Horses

Total area of the Riddle Mountain HMA is 28,021 acres and the Kiger HMA is 36,618 acres. The Riddle Mountain HMA is located approximately 50 air miles southeast of Burns, Oregon, and is southeast and adjacent to Riddle Mountain (Map 1). The Kiger HMA is approximately 45 air miles southeast of Burns, Oregon, and 2 miles east of the town of Diamond (Map1). Both HMAs have intermixed private land with much of the private land fenced so horses have limited access.

Both HMAS are in the northeast portion of Steens Mountain at elevations from approximately 4,400 to 6,700 feet with an annual average precipitation of 12 to 14 inches per year.

The Riddle Mountain and Kiger HMAs have been gathered periodically since 1977. Numbers of horses captured and removed for each successive gather are documented in the Burns District Office.

The last census of these HMAs was completed on September 17, 2002. Current population estimates of the Riddle Mountain and Kiger herds are 116 and 169 animals, respectively. Of these 285 horses, 57 are foals under 1-year of age, which indicates a 20 percent population increase.

Horses within these HMAs are managed to perpetuate the physical characteristics of the Spanish Mustangs to include height of 13 to 15 hands for adults, weight of adults 750 to 1,000 pounds, light to medium boned, small feet, ear tips which are hooked, and females with fine muzzles. The horses that have the dun factor, which is a dominant color trait for Spanish Mustangs, are managed for in these herds. The dun factor colors are dun, red dun, grulla, buckskin, claybank, and variations of these colors. Markings on these animals include dorsal stripes; zebra stripes on the knees and hocks; chest, rib, and arm bars; shoulder patches and sawtooth marks alongside the dorsal stripes; dark color outlining the ears; and the top one-third of the ears on their backside darker than the body color. These animals also typically have fawn color inside the ears with multicolored manes and tails and cobwebbing on the face, often with face masks. The less white these horses have the stronger is the dun factor. Horses having the dun factor may have some or all of the markings listed.

Peak foaling period for these herds is from March through May. Peak breeding period is from April through June. Currently, the existing sex ratio within the complex is approximately 50/50.

The HMAs have been in drought since 2000 which has reduced forage production, this coupled with herd numbers exceeding AML has drastically increased utilization of forage. Yank Springs, Yank Creek, and Frog Creek within the Kiger HMA have severe utilization from wild horses which is contributing to the downward trend in riparian condition. Private land in both HMAs which have continuous wild horse access, and some of the fenced private land, are having increased utilization of forage by wild horses reducing forage for livestock and wildlife and, if allowed to continue, may negatively impact rangeland condition.

2. Grazing Management

Kiger HMA

The forage allocation for livestock in the Kiger HMA is currently 2,605 AUMs of active permitted use for the Smyth-Kiger Allotment (#05331) and 2,267 AUMs of active permitted use for the Happy Valley Allotment (#05309) which are the two grazing allotments within the HMA. Actual use for livestock grazing the past 5 years has averaged approximately 520 AUMs less than active permitted use within the Smyth-Kiger Allotment and 303 AUMs less than active permitted use within the Happy Valley Allotment. This has been voluntary nonuse taken by the permittees.

There is one permittee who grazes livestock on the Smyth-Kiger Allotment during a season of use of April 1 to October 31. There is also one permittee who grazes livestock on the Happy Valley Allotment during a season of use of April 1 to November 30. Both allotments have rotational grazing systems which provide periodic growing season rest and or deferment. Water for livestock and wild horses is mainly available from springs, perennial streams, and waterholes. There is no shortage of water for wildlife, wild horses or livestock.

Overall rangeland trend is stable to upward throughout the Smyth-Kiger Allotment. Current utilization levels are within an acceptable range (approximately 50 percent) on the uplands except in the pastures where the larger bands of horses are located (Swamp Creek Pasture has 60 percent average utilization and Yank Springs Pasture average utilization is 70 percent). Yank Springs, Yank Creek, Frog Creek, and the northern 3 miles of Swamp Creek riparian plant communities are currently being grazed at heavy to severe levels of utilization from the combined use of cattle and wild horses. Overall rangeland trend is upward throughout the Happy Valley Allotment. Current utilization levels are within acceptable levels of 50 percent or less.

Riddle Mountain HMA

Forage allocation for livestock in the Riddle Mountain HMA is currently 3,863 AUMs of active permitted use in the Burnt Flat Allotment (#05313). Actual use for livestock grazing for the past 5 years has averaged approximately 2,984 AUMs.

There is one permittee who grazes livestock within the HMA during a season of use of June 15 to October 31. The Burnt Flat Allotment grazing system is deferred use. Water for livestock, wildlife, and wild horses is mainly available from springs and waterholes.

Overall rangeland trend is stable to upward throughout the Burnt Flat Allotment. Current utilization levels are within an acceptable range (approximately 50 percent) on most uplands.

3. Wildlife

The HMAs are spring, summer, and fall range with some winter range for mule deer, elk, and antelope. Upland game birds include mourning doves in the spring and summer. Chukars and valley quail are found at the lower elevations within the HMAs. Common snipe inhabit areas around springs and riparian areas.

Many raptors are found within the general area such as golden eagles, prairie falcons, red-tailed hawks, kestrels, and great-horned owls. The area also provides habitat for many other bird species and a myriad of small mammals as well as badgers, cougars, bobcats, and coyotes.

Forage allocation outlined in the Three Rivers RMP is 87 AUMs for deer, 7 AUMs for antelope, and 140 AUMs for elk within the Kiger HMA and 83 AUMs for deer, 7 AUMs for antelope, and 64 AUMs for elk within the Riddle Mountain HMA.

4. Vegetation

Plant communities in the HMAs primarily consist of mountain big sagebrush bunchgrass and low sagebrush-bunchgrass with the associated grasses and forbs changing with elevation. At the lower elevations Sandberg's bluegrass and Thurber's needlegrass and bluebunch wheatgrass are associated grasses. With increased elevation and precipitation Idaho fescue is often the dominant grass. Most of the mountain and low sagebrush plant communities are being encroached by western juniper. These communities are in various stages of transition to juniper woodlands. As these plant communities develop into woodlands, plant diversity decreases. There are also aspen plant communities scattered in deeper soil sites, often in areas that accumulate added snowpack. Many of these aspen communities have also been encroached by juniper. There are some crested wheatgrass seedings within the HMAs. Silver sagebrush-Nevada bluegrass communities occur to a lesser extent on sites with seasonal high water tables.

Riparian plant communities occur along the streams and springs with such species as Nebraska sedge, beak sedge, baltic rush, several species of willows, Kentucky bluegrass, and various other sedges, rushes, grasses, and forbs.

5. Soils

The soils found in the HMAs are mostly fine-textured clay loams with depths varying from several inches to 60+ inches, depending on the location on the landscape. Most of the soils, except on deep soil bottoms, are rocky on the surface and most soils have coarse fragments (rocks) throughout the profile. Many of the soils have a limiting layer (cemented lime) at various depths that may affect or prevent root penetration.

6. Recreation

Recreation is dispersed with the most common uses being hunting, wild horse viewing, wildlife viewing, photography, hiking, and off-highway vehicle use on existing roads and ways within the area. Hunting and wild horse viewing comprise the majority of recreational use in the area. Hunting use has increased on this portion of Steens Mountain since 2000 when the west and east slope of Steens Mountain was designated as wilderness. Bighorn sheep hunting season is from August 16 to September 15, cow elk season is from September 13 to September 21, and mule deer season begins October 4.

7. Visual Resources

The HMAs are in Visual Resource Management (VRM) Classes II and III. The objective of Class II is to retain the existing character of the landscape. The level of change to the landscape is to be low and not attract attention. The objective of Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape within this VRM class is moderate and should not dominate the view to the casual observer.

CHAPTER IV: ENVIRONMENTAL CONSEQUENCES

A. Alternative 1 (Proposed Action)

Critical Elements

1. Areas of Critical Environmental Concern

The primary objective of the Kiger Mustang ACEC is to perpetuate and protect the conformation characteristics and dun factor color of the wild horses in the Kiger and Riddle Mountain HMAs. The proposed action to gather the horses to reduce numbers to the lower level of AML, assess herd health and return the horses to the HMA to ensure the proper sex ratio, various age classes, and animals which possess the characteristics of the Kiger Mustang as outlined above will help to protect the special values the ACEC was established to protect.

2. Cultural Heritage

There would be no impacts to cultural heritage under the proposed action. All proposed trap sites and holding pen sites would be surveyed for cultural values and any area found to have a cultural site would be avoided.

3. Migratory Birds

Managing of the wild horse herds within the AMLs would reduce the possibility of trampling of nests and fledglings. There would be increased vegetative cover which would decrease the vulnerability for ground nesting migratory birds for predation of nests and fledglings. Approximately 2 acres of habitat at and immediately adjacent to trap sites would be negatively impacted for a period of 1 to 3 years until vegetation recovery occurs.

4. Noxious Weeds

Noxious weeds are spread by disturbance which removes perennial native vegetation cover such as congregation areas of wild horses. When the population of wild horses is managed within AML the frequency of congregation areas and other disturbance areas which remove vegetative cover is lessened, reducing the possibility of increased noxious weed infestations. Wild horse trap sites will be disturbed, removing vegetation cover. However these areas will be monitored for 2 to 3 years or until native vegetation recovers to ensure no new noxious weed infestations occur.

5. Special Status Fauna

The impacts to Greater sage-grouse would be similar to migratory birds as described above. Gathering wild horses and managing the population within the AML would provide for less year-round grazing in riparian areas. Reduction of yearlong grazing and late season grazing would result in an increase in the amount and vigor of herbaceous and deciduous woody riparian species, and allow progression of the riparian plant communities toward later seral stages. Improved riparian conditions would result in more cover and shading along streams, narrowing of stream channels, and potentially a reduction in water temperature. Lower numbers of animals may result in less compaction of moist riparian soils and less shearing of streambanks, leading to improved riparian vegetation, narrowing of stream channels, and reduction of sediment into the streams. This would result in improved habitat for redband trout, Malheur mottled sculpin, Columbia spotted frog, and other aquatic organisms. Many terrestrial wildlife species may encounter temporary disturbance from gathering operations with a helicopter. This would be a short-term disruption of normal activities.

6. Special Status Flora

The possible negative impacts of over grazing and removal of Short-lobe Penstemon and Back's sedge would be reduced by gathering the wild horses and managing the population within the AML. There are no impacts from wild horses to Simpson hedgehog cactus. There would be no impacts to sensitive plant species during gathering of wild horses by strategically locating traps away from Special Status plant populations.

7. Water Quality

Water temperature during the hot season may decrease on some streams due to the increase in vegetation cover which provides shade, thereby cooling the stream.

Wild horses are grazing yearlong on many riparian areas, decreasing shading cover along these streams. If the horses are gathered and managed within the AMLs this negative impact to water temperatures would be expected to decrease. Reducing the numbers of wild horses grazing on Yank Springs, Yank Creek, the northern 3 miles of Swamp Creek and Frog Creek would decrease sediment deposited within these streams.

8. Wetlands and Riparian Zones

On Yank Springs, Yank Creek, Frog Creek, and the northern 3 miles of Swamp Creek the negative impacts of over grazing and continuous grazing by wild horses would be reduced by removing animals and managing at AMLs to create a thriving natural ecological balance. The reduction in late season grazing by horses would allow for the establishment of deciduous woody riparian species (see the above discussion under Special Status Fauna).

9. Wilderness and Wilderness Study Areas

The proposed action would not impair the area's wilderness values. If the proposal's impacts had existed at the time of intensive inventory, those impacts would not have disqualified the area from being identified as a WSA. Also, the addition of this proposal would not produce an aggregate effect upon the area's wilderness characteristics or values that would constrain the Secretary's recommendation with respect to the area's suitability or unsuitability for preservation as wilderness.

During the gathering operation, the opportunity for outstanding solitude would be temporarily reduced within the Stonehouse WSA as a result of the helicopter activity. The panels would be removed upon completion of the gather, eliminating any visual impacts from the trap. The impacts of removing the horses include an improvement in vegetation, soil, wildlife habitat, and the natural appearance of the entire WSA.

Noncritical Elements

1. Wild Horses

Impacts to wild horses under the proposed action 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 and are immediately associated with implementation of the proposed action. These impacts include handling stress associated with the roundup, capture, sorting, animal handling, and transportation of the animals. The intensity of these impacts varies by individual, and are indicated by behaviors ranging from nervous agitation to physical distress. Mortality of individuals from this impact is infrequent, but does occur in .5 to 1-percent of horses gathered in a given roundup.

There are no indications that these direct impacts persist beyond a short time following the stress event. They would be expected to completely dissipate following release.

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 most older studs following sorting and release into the stud pen which lasts less than 2 minutes and ends when one stud retreats. Traumatic injuries occasionally occur. These injuries typically involve a bite and/or kicking with bruises which do not 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 among mares following captures.

Populationwide direct impacts are immediate effects which would occur during or immediately following implementation of the proposed action. They include the displacement of bands during capture and the associated redispersal which occurs following release, the modification of herd demographics (age and sex ratios), the temporary separation of members of individual bands of horses, the reestablishment of bands following releases, and the removal of animals from the population. With exception of changes to herd demographics, direct populationwide impacts have proven, over the last 20 years, to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within 1-month of release except a heightened awareness of human presence.

The effect of band displacement on a population as a result of gather operations has been observed in several HMAs following releases. Observations have been made of individual and populationwide horse response following releases from both the trap site where particular animals were captured and from the central holding facility where all captured animals were held. Most horses relocated themselves from the release site back to their home ranges within 12 to 24 hours and at times much faster. This redistribution occurred following a brief "reorientation swing" involving horses ranging out from the release site in a curving arc until their bearings were apparently restored. Following this initial random travel, most horses lined out and headed off in a particular direction often without deviating from that line until they disappeared into the mountain or over the horizon. Assertions that horses are simply taking the most direct route away from humans are not accurate, as instances where horses reverse their original direction crossing back in front of the release trailer or holding area are fairly common following the reorientation swing.

Specialists have also observed horse behavior, following releases, as it relates to bands which are separated at capture. While the affinity of individual animals to their band would be expected to vary, it was a very common observation that mares or studs broke from the group they were released with unexpected behavior for a social animal exercising the flight response, and headed toward a particular animal or group of animals. Following this activity, the pair or trio of horses continue the reorientation swing and then lined out together in a common direction. In some cases, individual groups were observed later together in a new area presumed to be the site of their original home range. Some specialists have noted individual mares reassociated with specific studs or mare groups following capture.

The effect of removal of horses from the population would not be expected to have impact on herd dynamics or population variables as long as the selection criteria for the removal ensured a "typical" population structure was maintained. Obvious potential impacts on horse herds and populations, from exercising poor selection criteria not based on herd dynamics, includes modification of age or sex ratios to favor a particular class of animal.

Effects resulting from successive removals causing shifts in sex ratios away from normal ranges are fairly self evident. If selection criteria leaves more studs than mares, band size would be expected to decrease, competition for mares would be expected to increase, recruitment age for reproduction among mares would be expected to decline, and size and number of bachelor bands would be expected to increase. On the other hand, a selection criteria which leaves more mares than studs would be expected to result in fewer and smaller bachelor bands, increased reproduction on a proportional basis with the herd, lengthening of the time after birth when individual mares begin actively reproducing, and larger band sizes.

Effects resulting from successive removals causing shifts in age dynamics away from normal ranges are likewise, fairly obvious. Herd shifts favoring older age horses (over 15 years) have been observed resulting in a favoring of studs over mares in some herds. Explanations include sex-based differences in reproductive stress (relative demand for individual contributions to reproduction) and biological stress (timing the most physically demanding period of the annual cycle).

For studs, reproductive stress is based on dominance in the herd and by definition is confined to a fairly narrow period in their lifespan when they are capable of defending a mare group. For mares, recurrent reproductive stress starts as early as age 2 and continues until as late as age 15 or 16, and sometimes as late as 20. Biological stress in wild horses tends to indicate a selection against mares. Biological stress is based on the degree, duration, and timing of biologically demanding activities during the annual reproductive cycle.

For mares, the greatest biological stress is during pregnancy and lactation. In wild horse populations, this occurs in late winter or early spring when forage availability is at its lowest level, and body condition is at its poorest. For studs, biological stress is at its peak during the breeding season. This peak biological demand is in the late spring and early summer and is more suited to a rapid recovery and a lower energy deficit than for mares.

The susceptibility of the older herd to extreme climatic events would depend on the age of the dominant class in the group. Generally, survival rates of horses are very high (exceeding 98 percent) for mature animals and lower for very young. This survivability declines again at some older age. Similarly, reproductive success also declines at some age. The threshold age has not been established at which susceptibility to extreme events and reproductive senescence occurs. It is reasonable to conclude that the older the population, the more prone it would be to a catastrophic die-off as a result of reduced resistance to disease, lowered body condition, and/or reduced reproductive capacity.

The effects of successive removals on populations causing shifts in herd demographics favoring younger horses (under 15 years) would also have direct consequences on the population. These impacts are not thought of typically as adverse to a population. They include development of a population which is expected to be more biologically fit, more reproductively viable, and more capable of enduring stresses associated with traumatic natural and artificial events.

The proposed action would reduce the potential impacts on wild horse populations by establishing a procedure for determining what selective removal criteria is warranted for the herd. This more flexible procedure of removing horses under 6 years and over 10 years old, would allow for the correction of any existing discrepancies in herd dynamics which could predispose a population to increased chances for catastrophic impacts. The proposed action would establish a standard for selection which would minimize the possibility for developing negative age or sex based selection effects in the population in the future.

2. Grazing Management

The proposed action would allow present livestock use at allocated levels to continue with the current management systems. During gathering in the Riddle Mountain HMA, use of the helicopter would be coordinated with the private landowner and permittee to avoid prematurely causing cattle to move toward home. The cattle in this area are normally moved using a helicopter.

3. Wildlife

Wildlife populations in the areas from which horses are gathered by the helicopter would be forced to seek cover in areas adjacent to the flight path. This would not cause them to abandon their normal habitat areas as the disturbance would be of short duration (2 to 3 days) and very localized. Competition for water and/or forage between wild horses and wildlife would be reduced. Vegetative cover used for nesting and hiding cover would increase when horses are managed within AML.

4. Vegetation

In the immediate vicinity of the catch pens or corrals and the loading chute short-term disturbance would occur. The vegetation would be trampled during panel installation by personnel and vehicles and severely trampled in the catch pen area by wild horses, domestic horses, and the wranglers. It is estimated and anticipated that 1 to 3 years would be required for native vegetation to become reestablished under average conditions with no reclamation. The total area of impact per trap would be approximately 2 acres, with less than one-quarter acre severely disturbed. Less than 1-AUM of livestock forage would be temporarily lost for one grazing season at each trap site used.

There would be a positive impact to the upland and riparian vegetation by reducing the total numbers of wild horses grazing yearlong within the HMAs. Lessened utilization would allow critical growth period rest for key cool season grasses. The composition of vegetation would change to a higher percentage of desirable plants, vegetative cover would increase and erosion would decrease.

5. Soils

Soil loss and compaction would be expected to decrease in those areas near water sources and other sites where horses concentrate. Lower populations of horses would result in less hoof traffic, thereby decreasing any possible negative impacts to soil biological crusts.

Soil may be compacted on approximately 2 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 is normally less than 2,000 square feet. Minimal surface wind and water erosion is expected on these areas during the vegetative rehabilitation period (approximately 1 to 3 years).

6. Recreation

There would be short-term impacts in localized areas during gathering. If gathering is completed during any hunt, wildlife will move away from the direct flight path of the helicopter with possible disruption of hunting within this flight pattern. The helicopter would be highly visible to people hiking in the area. All efforts would be made to avoid areas where bighorn sheep hunting may occur.

7. Visual Resources

The visual resources would improve with increased vegetation cover on the uplands and riparian areas which are currently heavily grazed by wild horses. This would be a direct benefit to the overall scenic quality of the area.

B. Alternative 2 (No Action)

Critical Elements

1. Areas of Critical Environmental Concern

The Kiger Mustang ACEC was established to perpetuate the Kiger Mustang and protect the health of the herd and the herd areas. The herd is to be managed within the AMLs. The habitat within the HMAs would decline if there is no action taken to control the wild horse population and the herd health would decline as habitat deteriorates.

2. Cultural Heritage

The increased horse population increases the size and frequency of congregation areas which may cause damage to artifacts in such areas as these in close proximity water sources.

3. Migratory Birds

The increased use by wild horses outside AMLS would increase the possibilities of nest and fledgling trampling. The removal of vegetation cover from grazing by wild horses during nesting and fledging by these birds would increase their vulnerability to predation.

4. Noxious Weeds

The high number of horses increases the frequency of congregation areas where vegetation cover is removed which provides areas for noxious weeds to establish.

The level of utilization during critical growth periods for forage plants would increase as the wild horse population increases. This would remove palatable plants and allow disturbed areas of bare ground to develop allowing noxious weed infestations to become established.

5. Special Status Fauna

Impacts to Greater sage-grouse would be as described for migratory birds. There would be no impacts anticipated to bighorn sheep. The increased utilization levels and yearlong grazing from wild horses in Yank Spring, Yank Creek, the northern 3 miles of Swamp Creek, and Frog Creek would inhibit the development of deciduous woody species, remove shading cover and increase soil compaction and streambank shearing. This would result in less shade and thermal cover over streams and potentially an increase in stream width to depth ratio (i.e., wider and shallower), which would increase maximum water temperature and temperature variability and reduce the quality and quantity of habitat for the Malheur mottled sculpin, redband trout, Columbia spotted frog, and other aquatic organisms.

6. Special Status Flora

The heavy utilization of forage species by wild horses may decrease the number of Short-lobe penstemon and Back's sedge plants within the HMA or weaken the health of individual plants. There would be no impacts on Simpson hedgehog cactus.

7. Water Quality

Heavy utilization of riparian zones by wild horses would continue to remove and prevent establishment of deciduous woody species which provide shading of streams. This causes increased water temperatures which negatively impacts the water quality for redband trout and macroinvertebrates. This heavy utilization would contribute additional sediment to these streams which negatively impacts fish and other aquatic organisms.

8. Wetlands and Riparian Zones

Increasing numbers of wild horses in the HMAs would result in greater use and degradation of riparian areas. This would result in an unacceptable decline in water quality through increased sedimentation and water temperatures. Riparian area vegetation would be degraded as additional horse use would decrease vegetation recruitment, reproduction, and survivability. In addition, riparian vegetation community types and distribution would be changed, root density lessened, and canopy cover reduced. This would lead to reduced stream channel and spring/seep dynamics and further deterioration of these systems.

The removal of riparian herbaceous and woody species cover due to heavy grazing from horse populations exceeding AMLs would also negatively impact the function of this vegetation for the retention of sediment during high water events. The year-round grazing by wild horses within riparian zones prevents regeneration of deciduous woody species and favors the increase of xeric species within the plant communities

9. Wilderness and Wilderness Study Areas

The increased horse use would impair the wilderness values of the Stonehouse WSA by changing the manner and degree of use. Vegetative changes would occur with the increased use. The negative impacts of not removing the horses include the degradation of vegetation, soil, wildlife habitat, and the natural appearance of the Stonehouse WSA. The no action alternative is not in compliance with the Wilderness Interim Management Policy.

Noncritical Elements

1. Wild Horses

The horses would continue to multiply and the population would increase at a rate of approximately 20 percent per year until the habitat would no longer support the horse population and a natural die-off would occur. Until this happens the horses would continue to overuse the available forage. The horses would begin to show signs of malnutrition, and a decrease in the population rate can be expected. In concentrated, overabundant animal populations, the individuals become much more susceptible to disease, which endangers the entire population. Domestic stock in the vicinity could also be threatened by disease.

Under this alternative, natural controls would regulate wild horse numbers through predation, disease, and forage, water, and space availability. Wild horses in the Kiger and Riddle Mountain HMAs are not substantially regulated by predators. In addition, wild horses are a long-lived species with documented foal survival rates exceeding 95 percent. This alternative would result in a steady increase in numbers that would exceed the carrying capacity of the range. The Wild Horse and Burro Act of 1971 mandates the Bureau to "prevent the range from deterioration associated with overpopulation," and "preserve and maintain a thriving natural ecological balance and multiple use relationships in that area."

2. Grazing Management

The HMAs would continue to support an existing population of 285 horses. Assuming that livestock and wildlife populations are managed to allocated levels, the carrying capacity of the HMAs would be over allocated. The weight gains of the livestock would decrease as the quality and quantity of available water and forage decreases. The BLM may be forced to suspend or reduce the permitted use of livestock in the area to compensate for the excess number of horses. This in turn, would affect the financial income of these operations.

3. Wildlife

Wildlife populations in the HMAs would be forced to compete more for limited forage, which would most likely alter use patterns. Habitat degradation would decrease wildlife populations and wildlife use in the HMAs.

4. Vegetation

Areas which are presently over grazed with heavy or severe utilization, such as areas adjacent to water sources, would continue to be used excessively. The area of over utilization would continue to increase in both size and degree. The composition of vegetation would change to a higher percentage of undesirable plants, soil cover would be reduced, and erosion would increase.

5. Soils

Soil loss and compaction would be expected to increase in those areas near water sources and other sites where horses congregate. Increased wild horse numbers on uplands and riparian areas would negatively impact soil surface features and would increase erosion in the HMAs.

6. Recreation

Some negative impacts to hunters and wild horse viewers would occur with degraded conditions for wildlife and wild horse populations. As both upland and riparian plant communities decline from over grazing by wild horses, hiking, wildlife, and nature photography would be less desirable for most recreationists.

7. Visual Resources

The visual resources would be negatively impacted by the decrease in vegetation cover and diversity of vegetation due to over grazing by wild horses. There would be increased horse numbers in the area, thus increasing the horse viewing opportunities.

CHAPTER V: 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.

A. Alternative 1 (Proposed Action)

The potential for cumulative impact on most of the identified resources other than wild horses is minimal. There would be lessened competition for forage with fewer numbers of horses. By removing horses without the selective removal policy there would be a restoration of age structure and sex ratio within the bands to historical levels. In addition, a quality cross section of horses in all age groups would be released back into the HMA and older, less desirable or defective horses removed. Gathering to the lower level of the AML would reduce the frequency of gathers that are needed to maintain a thriving, ecological balance, thereby, reducing the stress on the horses related to gather activities.

B. Alternative 2 (No Action)

The horses would continue to over populate the HMAs until a natural die-off occurred due to disease, starvation or a combination of these factors with harsh winter conditions. Range condition would deteriorate, vegetation cover would be reduced, water quality would be reduced, soil erosion increased, wildlife use patterns and numbers would be altered, and domestic livestock would be eliminated.

CHAPTER VI: CONSULTATION AND COORDINATION

Public hearings are held at the Burns District Office prior to gathers to inform the public on the use of helicopters and motorized vehicles to capture wild horses. During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses. For more information contact Connie Deller at (541) 573-4492.

A. Persons Consulted and Coordinated with Outside of the Bureau of Land Management

Central Oregon Mustang Owner's Association
Stacy Davies, Livestock Permittee
Jack Drinkwater, Harney County Court
Ron Garner, Oregon Department of Fish and Wildlife
Steve Grasty, Harney County Court
Dick Jenkins, Livestock Permittee
Kiger Mesteño Association
Dan Nichols, Harney County Court
Oregon Natural Desert Association
Darrell Otley, Livestock Permittee
Pacific Wild Horse Club
Sierra Club
Steens Mountain Advisory Council

B. List of Preparers

Bill Andersen, Rangeland Management Specialist
Lindsay Aschim, Watershed Specialist
Jim Buchanan, Supervisory Natural Resource Specialist, Lead Preparer
Gary Foulkes, District Environmental Coordinator
Terri Geisler, Geologist
Jim King, Rangeland Management Specialist
Brian McCabe, Archaeologist
Fred McDonald, Natural Resource Specialist
Skip Renschler, Lands Specialist
Lesley Richman, Noxious Weed Specialist
Joan Suther, Field Manager
Fred Taylor, Wildlife Biologist
Nora Taylor, Botanist
Michael Weston, Fish Biologist