

# Appendix V. Wild Horse Management in the Lander Planning Area

The Bureau of Land Management (BLM) monitors wild horse populations to comply with population management objectives set in the land use plan. The BLM has been conducting ongoing monitoring of wild horses and their habitat in Herd Management Areas (HMA) for many years.

The monitoring program, although not exclusive to the wild horse program, includes collection and monitoring of the following types of information carried out by BLM range, wildlife, and wild horse staff in the planning area:

- Precipitation data
- Rangeland trends (uplands and riparian)
- Forage utilization data
- Permitted use by livestock
- Wildlife actual use and forage requirements
- Wild horse population data, including but not limited to –
  - Population counts
  - Reproductive rates
  - Age/sex structure
  - Observation sightings
  - Determining areas of highest horse use, or concentration areas

If an evaluation of monitoring data were to indicate that wild horse management objectives in the land use plan were not being met, population adjustments in land use plans and Herd Management Area Plans (HMAPs) could be necessary. Population adjustments would be analyzed prior to initiating management actions in applicable HMAPs and Resource Management Plans (RMPs). Monitoring and adjusting the appropriate management level, as necessary, would ensure a thriving, natural ecological balance is maintained.

More information on specific management direction used in managing wild horse populations in the planning area can be found in the *Wild Horses and Burros Management Handbook (H-4700-1)*. This handbook is an assemblage of all relevant policy and technical guidance that must be considered in developing and implementing Wild Horse Management Plans (WHMPs) and actions.

## Establishment and Modification of Herd Management Areas and Appropriate Management Levels

The current appropriate management levels were established in 1993 and 1994 from a process that included five years of focused, intensive monitoring of wild horse herd areas, use areas, and grazing allotments. Evaluation of data, public input, and environmental analysis were utilized to establish the appropriate management level for each herd. Appropriate management levels were established for the Lander Field Office by two National Environmental Policy Act analyses. In 1993, Environmental Assessment (EA) # WY-036-EA3-010 identified five HMAs: Conant Creek, Muskrat Basin, Rock Creek Mountain, Dishpan Butte, and Green Mountain. An EA developed by the Rawlins Field Office, EA# WY-037-EA4-122, identified two HMAs and appropriate management levels for Crooks Mountain and Antelope Hills.

### **Appropriate Management Level/Population Expression in the Planning Area**

The existing Lander Field Office appropriate management levels are expressed as the number of adults and yearlings, including unweaned foals of the year. At the time these appropriate management levels were developed, traditional inventory periods were in late winter or very early in the year, typically in February or March.

This period included foals from the previous year that had perished or survived to approach their first birthday, and the foals of the year had not yet been born. Therefore, the number counted represented what the adult population would be for the following year, not considering subsequent mortality.

Lately, there has been a shift in inventory times to favor the months of July and August. When a herd is counted at this time, most of the foals of the year have been born and many are 2 months of age or older. Therefore, an inventory of the same herd in the same calendar year will yield a higher number, barring some unusual late-winter event resulting in unusually high mortality, than would have occurred earlier in the year.

At one time a “Minimum Viable Population” was a widely accepted term among scientists and behaviorists. The concept can best be described in terms of genetic material and its diversity rather than as a specific number of horses. Blood typing was necessary to determine the genetic characteristics of a given population. The identification of a specific population level for an area that represents a Minimum Viable Population is also influenced by the amount and frequency of interaction with other populations. It is generally agreed that 50 competent breeding animals will constitute a Minimum Viable Population under most circumstances.

Inventory practices are under review by the National Program Office. Inventory practices might be standardized, and any such standardization could include a uniform method of counting a population. Increased interest in the genetic character of a particular herd has caused some differing views on the expression of population sizes and objectives.

Geneticists usually define a population in terms of the effective population, which consists of the number of competent breeding-age animals. Therefore, colts of the year, yearlings, a portion of the 2-year olds, and the very old would not be included as part of the effective population count. The appropriate management level necessary to maintain an effective breeding population of 100 would be approximately 165 adult animals, not including unweaned foals. The exact number would vary depending on the age and sex distribution of the particular herd.

### **Implications of Wild Horse Genetic Research**

Wild horses managed on public lands have a variety of histories and originate from a variety of backgrounds. Advances in genetic research have enabled the BLM to identify the specific genetic stock from which a wild horse population originates, thereby assisting in identifying the history of a population. The genetic roots of most of the horses are predominantly American, and some have beginnings as recent as the period following World War II when horses that had been used by the U.S. Army Cavalry were released on public lands. Occasionally, populations have been encountered whose genetic roots can be traced to the Spanish exploration period through the identification of genotypes associated with the New World Iberian (Spanish Colonial) breeds. Populations with this distinctive genotype provide a genetic resource that the majority of wild horses on public lands do not provide. The wild horses in the Lander Field Office’s Antelope Hills HMA are such a population.

In 2001, blood samples from wild horses were taken from the Cyclone Rim area in the Antelope Hills HMA and were provided to Dr. E. Gus Cothran of the Equine Parentage Testing and Research Laboratory at the University of Kentucky. Results from the genetic analysis of these samples identified a clear contribution from New World Iberian breeds. The highest average genetic association of the blood samples provided were the Spanish Colonial breeds. The next highest average genetic association was with North American Gaited breeds, most likely from the routine escape of domestic saddle stock from the surrounding areas. A report of the results of this genetic analysis is available at the Lander Field Office.

As genetic testing continues with the wild horse populations throughout the Red Desert meta-population, the necessity of maintaining the population of wild horses in the Antelope Hills HMA in genetic isolation could vary. If populations adjacent to the Antelope Hills HMA share the prevalence of New World Iberian genomes, inter-mingling these populations would be beneficial to maintain the genetic resource; therefore, isolating and maintaining an internally viable population in the Antelope Hills HMA would not be required. However, if the New World Iberian genes are prevalent only in Antelope Hills, further intermingling could cause this genetic resource to disappear. Continued monitoring and research could result in adjustments to management decisions for the Antelope Hills HMA. Adjustments would be implemented following appropriate analysis and maintenance of management documents.

### **Wild Horse Management History in the State Of Wyoming and the Planning Area**

In 1971, in response to the passage of the Wild Free-Roaming Horses and Burros Act, Wyoming BLM identified the existing wild horse habitats and populations in the state that would likely be subject to the provisions of the act. These identifications were made using the best information and understanding available at the time. The result was 30 areas in the State of Wyoming with populations totaling 4,411 horses. Of those, 1,049 were estimated to be privately owned horses that would be claimed and removed from the range under the provisions of the act. Those 30 areas comprised a total of 6,557,160 acres of public lands, 389,112 acres of land owned by the State of Wyoming, and 2,479,096 acres of privately owned lands. The 30 areas varied greatly in size and land ownership.

As soon as the act passed, a number of activities that had served to limit the growth in horse numbers and the expansion of their ranges ceased. Horse populations in Wyoming began to grow.

Following passage of the act, BLM personnel began to accumulate additional information about the horses and their habitats. Area boundaries were refined as more was learned about the seasonal needs and habits of horses. By 1974, the list of 30 areas had increased to 40 areas, comprising a total of 6,820,749 acres of public lands, 406,103 acres of land owned by the State of Wyoming, and 2,355,852 acres of privately owned lands. As before, the 40 areas varied greatly in size and land ownership.

The period of 1976 to 1984 saw a great deal of activity in land use planning. For Wyoming, this can be called the Management Framework Plan Era. During this period, the 40 areas previously identified were combined into 24 areas. The Management Framework Plan process resulted in identifying 14 of those 24 areas that, in one way or another, failed to meet suitability requirements for maintaining a long-term healthy population of horses in accordance with the intent of the Act. One of the two most important criteria was that the area contained substantial amounts of private land. The other was that the horse population was too small to continue to thrive when isolated from customary sources of new genetic stock. The remaining 10 areas were then designated as HMAs. The HMAs comprised 3,322,776 public acres, 152,551 acres of land owned by the State

of Wyoming, and 861,022 acres of privately owned land. This process also identified population objectives for these herds, totaling 2,673 horses.

With respect to horses in Wyoming, this has resulted in the 16 HMAs currently recognized in the state. These 16 areas comprise 3,664,002 acres of public land, 154,737 acres of land owned by the State of Wyoming, and 846,243 acres of privately owned lands. The 16 areas still vary in size and land ownership, although not to the extent that they once did. Particularly worthy of note is the substantial amount of private land now included in designated HMAs. Much of the private acreage consists of land owned or controlled by the Rock Springs Grazing Association of southwestern Wyoming. It has made its lands available to an agreed-upon number of wild horses since 1979. Without access to those lands, approximately 1.5 million acres of adjoining and commingled public lands would be unavailable for inclusion in HMAs. This would, in effect, eliminate one-third of the free-roaming horses in Wyoming. The current, combined population objective (appropriate management level) for wild, free-roaming horses in Wyoming is 3,263, or 18 percent more than it was in 1980. Without the access to the private lands, the combined appropriate management level would be only 2,038.

If an effective breeding population of 100 horses is necessary to maintain a genetically viable herd of wild horses, 9 of the 16 HMAs in Wyoming do not have appropriate management levels that would indicate genetically stable long-term populations. However, wild horse herds in these HMAs are usually part of a larger meta-population comprising adjacent HMAs through migration and animals exchanging. The meta-population is the entire gene pool available to a specific herd.

When originally identified and reviewed through planning, HMA boundaries were designated to reflect common herd location, as well as to simplify administration and management of wild horses. As a result, several HMAs could be designated adjacent to one another in different BLM field office planning areas, or simply separated by geographic features such as watersheds. The individual populations in each HMA might be separated for most of the year, but both could share the same winter range. Sharing resources allows for regular interaction between the two populations. Interaction allows for horses from each herd to be recruited by and assimilated into the other. Therefore, although the appropriate management level of the individual HMAs would appear to be genetically deficient, each population is periodically infused with new genetic material and the genetic diversity of both herds is enhanced. In any given year, only a very few bands from each herd might actually exchange members. However, over time, the normal behaviors of each herd cause the mixing to become widespread.

From the standpoint of genetic viability, the required level of exchange of animals and the related introduction of new genetic material is not high. In small populations of less than 150 animals, the introduction of one or two competent breeding animals per generation (i.e., approximately 10 years) will ensure the maintenance of the genetic resource. Table V.1, "Wild Horse Regional Meta-populations Associated with the Planning Area" (p. 1809), identifies the wild horse HMAs in the planning area, and the meta-populations in which the horses of the HMAs interact.

**Table V.1. Wild Horse Regional Meta-populations Associated with the Planning Area**

HMAs in the Planning Area		Meta-population		HMA(s) in the Meta-population	Type of Interaction	Points of Contact
Name	Appropriate Management Level	Name	Appropriate Management Level			
Antelope Hills <sup>1</sup>	60-82	Red Desert includes Divide Basin	895-1324	Stewart Creek Lost Creek Antelope Hills Divide Basin Crooks Mountain	Male migration, female exchange	Hay Reservoir Bare Ring Hadsell Osborne Draw
Green Mountain <sup>1</sup>	170-300	Red Desert includes Divide Basin	895-1324	Stewart Creek Lost Creek Antelope Hills Divide Basin Crooks Mountain	Male migration, female exchange	Hay Reservoir Bare Ring Hadsell Osborne Draw
Crooks Mountain <sup>1</sup>	65-85	Red Desert includes Divide Basin	895-1324	Stewart Creek Lost Creek Antelope Hills Divide Basin Green Mountain	Male migration, female exchange	Hay Reservoir Bare Ring Hadsell Osborne Draw
Conant Creek <sup>2</sup>	60-100	North Lander	320-535	Dishpan Butte Muskrat Open Rock Creek Mountain	Male migration, female exchange	Beaver Rim Lower Conant Creek Upper Conant Creek
Dishpan Butte <sup>2</sup>	50-100	North Lander	320-535	Muskrat Open Rock Creek Mountain Conant Creek	Male migration, female exchange	East Fork of Long Creek Beaver Rim
Muskrat Basin <sup>2</sup>	160-250	North Lander	320-535	Rock Creek Mountain Conant Creek Dishpan Butte	Male migration, female exchange	Beaver Rim Lower Conant Creek Upper Conant Creek
Rock Creek Mountain <sup>2</sup>	50-85	North Lander	320-535	Muskrat Basin Conant Creek Dishpan Butte	Male migration, female exchange	Beaver Rim Above and Below Conant Creek Drainage
<p><sup>1</sup> Portions of the Antelope Hills, Crooks Mountain, Green Mountain, and Lost Creek HMA boundaries have no fences. Therefore, horses are free to migrate and exchange. Horses in the Stewart Creek and Divide Basin HMAs are fenced off from neighboring HMAs and must negotiate a fence in order to mix.</p> <p><sup>2</sup> Horses in the North Lander Complex Meta-population occasionally mix. These animals must negotiate fences in order to exchange with one another.</p> <p>HMA Herd Management Area</p>						

The following trends have emerged in Wyoming since the passage of the Wild Free-Roaming Horses and Burros Act:

1. The average herd size has increased from 147 to 197.
2. The area of public land available for use by horses has increased slightly since 1980.
3. The area of private land occupied has decreased from 2.5 million to 846,243 acres.

4. Of the 16 herds, 14 are part of meta-populations greater than 300.

These same trends are representative of the changes that have occurred in the planning area since the passage of the act. In 1971, an estimated 435 horses subject to management under the act occupied 2,116,095 acres in 6 areas. Today, an estimated 1,540 horses subject to management under the act occupy approximately 929,000 acres in 3 areas.

It should be noted that the BLM has routinely removed excess and stray horses from the range since 1978. During that period, more than 27,000 horses have been removed from Wyoming rangelands and placed through the BLM's Adopt-a-Horse-or-Burro program. Nonetheless, the population is still in excess of 4,000 animals, an important indicator that the cornerstone principle of the act, a thriving natural ecological balance, is not imperiled by BLM management of the horses.

### **Population Management Actions in the Planning Area**

Population management actions in the planning area take place as part of a state and national undertaking to allocate scarce resources, and equally scarce space, for the removal of horses from public rangelands. This is necessary so that effective planning and scheduling can occur BLM-wide. No single office controls the fiscal and logistical resources necessary to affect the desired management of horses in its jurisdiction. Instead, each office is part of the BLM-wide wild horse management program. A key part of this program is the identification of a gather cycle for a state, which can result in gathers taking place in less than ideal conditions in a particular HMA. Once established, the gather cycle needs to be followed as closely as possible.

Appropriate management levels were established to allow for a range of fluctuation in the population, while still meeting the criteria for a valid appropriate management level. In evaluating the appropriate management level, a lower limit was identified and then examined to ensure that the particular herd will remain genetically viable if periodically reduced to that level. This is a crucial consideration in many of the smaller herds in the state. Concurrently, the upper limit is evaluated to determine that, under normal climatic conditions, resource damage or other substantial conflicts would not be likely to occur if the population were allowed to increase to this level cyclically. The appropriate management level will equate to the average population level during a management cycle. Analysis of various gather cycles (occurring outside the scope of this RMP) is occurring as part of the statewide wild horse management strategy. Three- and 4-year gather cycles for the state are being evaluated and compared. Cycles longer than 4 years are also being evaluated as part of a management scheme that would employ fertility control to limit population increases.

When a gather cycle is chosen for implementation in the state, part of the evaluation leading to the choice will be the ability of the Wyoming BLM to remain in substantial conformance with the consent decree of August 28, 2003, and all other relevant law and policy. The upper and lower limits would be reevaluated and adjusted to ensure maintenance of a thriving ecological balance. Because the appropriate management levels were evaluated considering the potential for adverse effects from a 4-year gather cycle and the associated level of population fluctuation, a shorter cycle and lower average population levels would still serve the purposes of the appropriate management level determination process.

Fertility control has become a widely used tool for restraining reproduction. Currently, the most widely used method is Porcine Zona Pellucida (PZP). Most herds for which the BLM implements PZP vaccination are administered a 22-month controlled release formula in conjunction with a

gather. Some analysis indicates that this 22-month formula provides infertility at 94 percent for year one, 82 percent for year two, and 68 percent for year three. Fertility returns to normal on the fourth year. The BLM issued an instruction memorandum in March of 2009 to direct and guide the implementation of fertility control in the field. It is the policy of BLM to apply fertility control as a component of all gathers unless there is a compelling management reason not to do so. For the Lander Field Office, all HMAs have been fertility treated using the PZP-22 fertility control vaccine. The North Lander Complex was treated for the first time in July 2009. Herds in three of the five HMAs in the Red Desert Complex (three managed by Lander and two by Rawlins) were treated in 2006, 2009, and 2011.

### **Inventory Practices in the Planning Area**

Inventory practices in the planning area have developed over time. At present, all inventories in the planning area are conducted using a helicopter-type aircraft. Typically, east-west transects at 1 to 1 ½ mile intervals are employed, flight height is approximately 500 feet above ground level, and airspeed is approximately 80 miles per hour. These practices have been developed to minimize stress to horses and other animals and to comply with BLM aircraft safety guidelines. Some inventories have been completed using fixed-wing aircraft, as part of a research project involving the U.S. Geological Survey Biological Resources Discipline from Fort Collins, Colorado. These inventories employ two observers, including one representing the Wyoming Department of Agriculture. This approach yields an actual, independent double count of half of the area, and a constructed double count of the other half. These results are then analyzed statistically and evaluated. Other inventories typically employ a single or double observer using a direct count method.

### **Animal Health**

Animal health issues are considered at two levels: Horses removed from the range and maintained in BLM facilities, and horses remaining on the range. Both levels are afforded appropriate attention through the Memorandum of Understanding (MOU) that BLM has with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS). This MOU provides BLM with access to a complete staff of federal veterinarians in each state. It also supplies access to a national program manager located in Fort Collins, Colorado, who can access the Veterinary Services Centers for Epidemiology and Animal Health, Veterinary Services Western Regional hub, and U.S. Department of the Interior Biological Resources Division of the U.S. Geological Survey. In addition, this ensures that APHIS will be able to incorporate the wild, free-roaming horses managed by BLM into its responsibility to ensure the health and safety of the nation's plants and animals.

At both levels, the staff of APHIS is involved with the State of Wyoming, private practitioners, and other federal agencies to ensure the appropriateness of all activities involving wild, free-roaming horses managed by BLM.

### **The Wild, Free-Roaming Nature (of Wild Horses)**

There are approximately 30,000 wild horses in North America, and approximately 2,000,000 domestic horses. In the Lander RMP, the term "wild, free-roaming nature" is used to describe wild horses.

Currently, horses in all of the HMAs exhibit a wild, free-roaming nature. They are typically wary of humans, but do not display signs that would indicate an intense fear. They rely on their acute

senses, especially their sight, to enable them to maintain a feeling of safety. They use their speed and agility to quickly regain a “safe” distance when disturbed. They do not recognize or seek any dependence on humans for sustenance. One of the principle distinctions between domestic and wild horses is the ability of wild horses to make certain choices. They can choose their space, their diet, and their company. They can choose optimal behaviors for survival. In contrast, their domesticated cousins have only limited choices and depend on humans for sustenance.

The loss of a horse’s wild, free-roaming nature is not a fatal disease, but it does have consequences as well as causes. The wild, free-roaming nature takes a certain kind and amount of space to sustain. What is currently available to the horses in the HMAs satisfies both kinds of space. Changes introduced to either the kind or amount of space available will cause the horses to make different choices, with the choices becoming more varied as more change occurs. Change comes in a variety of forms, most of which are either a function of, or are accompanied by, increased human presence. New roads, structures, facilities, and fences are examples. As a consequence of these increased human interactions, wild horses can lose their wild nature. Wild horses seek out the most convenient foraging areas, and therefore can become more competitive with domestic livestock. Band structure and function could cease to provide a secure environment in which young horses can mature and learn successful wild horse behavior.