Petition to List the Pryor Mountain Mustang Population as Threatened or Endangered Under the Endangered Species Act

Petition Submitted to the U.S. Secretary of the Interior and the U.S. Fish and Wildlife Service

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Petitioners

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GLOSSARY

APA – Administrative Procedure Act

AML – Appropriate Management Level

BIA – Bureau of Indian Affairs

BLM – Bureau of Land Management

DPS – Distinct Population Segment

ESA – Endangered Species Act

FWS – U.S. Fish and Wildlife Service

FoA– Friends of Animals

HA – Herd Area

HMA – Herd Management Area

HMAP – Herd Management Area Plan

NEPA – National Environmental Policy Act

PRIA - Public Rangelands Improvement Act

PMWHR – Pryor Mountain Wild Horse Range

USFS – United States Forest Service

WHBA or the Act –Wild Free Roaming Horses and Burros Act

PETITIONERS

Friends of Animals. Friends of Animals (FoA) is a nonprofit international animal advocacy organization incorporated in the state of New York since 1957. FoA has nearly 200,000 members worldwide. FoA and its members seek to free animals from cruelty and exploitation around the world, and to promote a respectful view of non-human, free-living and domestic animals. FoA engages in a variety of advocacy programs in support of these goals. FoA informs its members about animal advocacy issues as well as the organization's progress in addressing these issues through its magazine called ActionLine, its website, and other reports. FoA regularly advocates for the rights of wild horses and has published articles and information advocating for the protection of wild horses so that they can live unfettered by human intrusion.

EXECUTIVE SUMMARY

The Pryor Mountain Mustangs occupy the Pryor Mountain Wild Horse Range in Montana and Wyoming, nestled between the Pryor Mountains and the Bighorn Canyon National Recreation Area. This population is essential for the preservation of the Old Spanish genetic lineage of wild horses. This lineage can be traced back to ancient horses which first evolved in North America and Eurasia, but are thought to have temporarily become extinct in North America following the last Ice Age, before being returned by the Spanish. The Old Spanish genetic lineage has since been lost in Spain, due to domestic breeding, and can now only be found in the Americas. Dr. E. Gus Cothran described the Pryor Mountain Mustangs as the "most significant wild-horse herd remaining in the United States" because of their unique potential to carry this genetic lineage into the future. (Ryden, 1999, p. 320).

Currently, wild horses exclusively occupy fragmented ranges throughout the West, on land which historically was, and often still is, subjected to intensive livestock grazing. Through current management schemes, wild horses are maintained at very low population sizes, below the minimum thresholds recommended for genetic viability. Despite the designation of protected habitat, current federal and state laws and regulations do not require that the protection of wild horses be prioritized over other competing land uses, such as extractive industries or livestock grazing.

The Pryor Mountain Mustangs, like other wild horses in the United States, are subject to removal in order to reach the Bureau of Land Management's (BLM) designated "appropriate management level" (AML) for the herd. In Pryor Mountain, this AML is set at 90 to 120 horses for the range, despite geneticists' recommendations of maintaining as much genetic diversity and high population numbers as possible. Maintaining the Pryor Mountain Mustang population at this small size could reduce the resiliency of the population and result in a genetic bottleneck, placing the whole population, as well as the Old Spanish genetic lineage, at risk.

The Pryor Mountain population represents one of the best opportunities to preserve the Old Spanish genetic lineage, due to the relative genetic purity of the lineage within the herd and the size of the range. The range spans over 39,000 acres, and the wild horses do not compete with other extractive industries or livestock grazing. The range is also isolated from other wild and domestic horses, reducing the likelihood of interbreeding. This range is likely the only remaining fragment of habitat that is able to support a viable population of horses of this lineage. The population of wild horses on the Pryor Mountain Range is unique and requires urgent protection. Otherwise, this source of the Old Spanish genetic lineage could be lost, further threatening the genetic resource globally.

Friends of Animals requests the U.S. Fish & Wildlife Service (FWS) to consider this petition for the listing of the Pryor Mountain Mustang distinct population segment, located within the Pryor Mountain Wild Horse Range in Montana and Wyoming, under the

Endangered Species Act (ESA). This population carries on a distinct and significant genetic lineage that is threatened by the current regulatory framework.

THE ENDANGERED SPECIES ACT

Congress enacted the ESA in 1973 to "provide a means whereby ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531(b).

A. The Listing Process.

The ESA requires the Secretary of the Interior—through her delegate, FWS—to identify and list species that are endangered or threatened.[1] *See id.* at § 1533. FWS may list a species, on its own initiative, through notice and comment rulemaking. *Id.* at § 1533(b)(5). Alternatively, a species may become listed through the petition process provided for in the Administrative Procedure Act (APA). 5 U.S.C. § 553(e). Any interested person may petition FWS to add or remove a species from the list. 16 U.S.C. § 1533(b)(3)(A). Upon receiving a listing petition, FWS must promptly determine whether the petition is supported by "substantial scientific or commercial information." *Id.*; *see also Nw. Ecosystem All. v. United States Fish & Wildlife Serv.*, 475 F.3d 1136 (9th Cir. 2006). If such a petition is appropriately supported, FWS is required to make a finding on the status of the petitioned species within twelve months, and publish such finding in the Federal Register. 16 U.S.C. § 1533(b)(3)(B). In making its finding as to the status of a listed species, Congress has directed FWS to determine whether any species is an endangered species or threatened due to any of the following factors:

> (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
> (B) overutilization for commercial, recreational, scientific, or educational purposes;
> (C) disease or predation;
> (D) the inadequacy of existing regulatory mechanisms; or
> (E) other natural or manmade factors affecting its continued existence.

Id. at § 1533(a)(1).

Further, in evaluating the status of the petitioned species, FWS must make its decision "solely on the basis of best scientific and commercial data available." *Id.* at § 1533(b)(1)(A). Moreover, if FWS finds that listing of the petitioned species is warranted, it

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[1] An "endangered species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range . . . ." 16 U.S.C. § 1532(6). A "threatened species" is "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Id.* at § 1532(20).

must promptly publish such finding along with a proposed regulation to implement the finding. *Id.* at § 1533(b)(3)(B)(ii).

B. Authority to List Distinct Population Segments of a Species.

Congress defined species in the ESA to include "any subspecies of fish or wildlife, and any **distinct population segment** of any species of vertebrate fish or wildlife that interbreeds when mature." 16 U.S.C. § 1532(16) (emphasis added). Thus, a population of wildlife that may not constitute a taxonomic species may still qualify for listing as a distinct population segment (DPS). The purpose of allowing the listing of a DPS is a matter of efficiency—DPS listings "may allow protection and recovery of declining organisms in a timelier and less costly manner, and on a smaller scale than the more costly and extensive efforts that might be needed to recover an entire species or subspecies." *Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act*, 61 Fed. Reg. 4722, 4725 (Feb. 7, 1996). Courts have affirmed this purpose. *See, e.g., Ctr. for Biological Diversity v. Salazar*, 794 F. Supp. 2d 65, 97 (D.D.C. 2011).

Although the ESA does not expressly define the term "distinct population segment," FWS and the National Marine Fisheries Service, which have jurisdiction to implement the ESA for marine species, jointly adopted a policy statement ("Joint DPS Policy") to guide their evaluation of whether a population group should be treated as a DPS.[2] 61 Fed. Reg. 4722. The Joint DPS Policy sets forth two factors for consideration: (1) the "discreteness of the population segment in relation to the remainder of the species to which it belongs;" and (2) the "significance of the population segment to the species to which it belongs." *Id.* at 4725. These terms are defined as follows:

> **Discreteness:** A population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions: 1. It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation; [or] 2. It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D)[3] of the [Endangered Species] Act.
>
> **Significance:** If a population segment is considered discrete under one or more of the above conditions, its biological and ecological significance will then be considered in light of Congressional guidance. . . . [FWS] will

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[2] The Ninth Circuit has since found the Joint DPS Policy to be a reasonable construction of the ESA. *Nw. Ecosystem All. v. United States Fish & Wildlife Serv.*, 475 F.3d 1136 (9th Cir. 2007).

[3] Section 4(a)(1)(D) mandates that the Secretary shall determine whether a species is endangered or threatened because of the "the inadequacy of existing regulatory mechanisms." 16 U.S.C. § 1533(a)(1)(D).

> consider available scientific evidence of the discrete population segment's importance to the taxon to which it belongs. This consideration may include, but is not limited to, the following: 1. persistence of the discrete population segment in an ecological setting unusual or unique for the taxon, 2. [e]vidence that loss of the discrete population segment would result in a significant gap in the range of a taxon, 3. [e]vidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or 4. [e]vidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Id. The Joint DPS Policy explains the purpose of these two requirements: "[t]he interests of conserving genetic diversity would not be well served by efforts directed at either well-defined but insignificant units or entities believed to be significant but around which boundaries cannot be recognized." *Id.* at 4724.

HISTORY OF WILD HORSES IN NORTH AMERICA

Modern horses, zebras, and asses belong to the genus *Equus*, the only surviving genus in a once diverse family, Equidae. (Kirkpatrick & Fazio, 2010). The equid family evolved in North America for about 26 million years. (Jenkins & Ashley, 2003). Based on fossil records, the genus *Equus* originated in North America about three to four million years ago and spread to Eurasia by crossing the Bering land bridge two to three million years ago. A significant amount of paleontological data has led experts to place the origin of the modern horse, *Equus caballus,* at about two million years ago in North America. (Kirkpatrick & Fazio, 2010). Fossils and petroglyphs of wild horses have been found in Eastern California; Carbon County, Montana; Converse County, Wyoming; Wolf Spider Cave, Colorado; Spencer and Laatch Archeological Mount, Wisconsin; Truman Reservoir, Missouri; the Hopewell Burial Mound, Ohio; the prehistorical Indian kitchen middens of Arizona; and Winnemucca Lake Flats, Nevada. (Downer, 2014).

The last North American extinction likely occurred between 13,000 and 11,000 years ago (Kirkpatrick & Fazio, 2010), although more recent extinctions of horses have been suggested. (Haile et al., 2009). Exploitation by early humans in this pre-domestication period may have played a role in the horse's demise in North America. (Harington, 2002). Climate change and changes in North American vegetation also likely played a role. (Hulbert, 1993; Martin & Klien, 1984; Sharp & Cerling, 1998; MacFadden & Ceding, 1994). Had it not been for previous westward migration into northwestern Russia and Asia, the horse would have faced complete extinction. Nonetheless, the *Equus* did survive and spread worldwide except for Australia and Antarctica. (Kirkpatrick & Fazio, 2010).

In the mid-1500s, Spanish conquistadors returned horses to North America, and some horses escaped or were released from captivity onto western rangelands. (Garrott & Oli, 2013). These now wild horses developed or maintained distinct behaviors and

physiological characteristics from their domestic counterparts. The fact that horses were domesticated before they were reintroduced matters little from a biological or behavioral viewpoint when determining them as a once-native species. (Kirkpatrick & Fazio, 2010; MacPhee, 2011).

A. Management of Wild Horses in the United States.

By 1900, there were two to seven million wild horses in the United States. (Johnston, 2009). However, the population started to decrease in the early 1900s due to human exploitation. In the 1920s, well over a hundred thousand horses throughout the country were slaughtered and sold for chicken-feed, pet food, and human consumption. (McKnight, 1959). Furthermore, hunters and ranchers started killing wild horses and driving them off the land based on the belief that wild horses would compete with commercial livestock or damage the land. (Ryden, 1999, p. 163, 166, 216-17).

It was unclear whether there were too many horses, or that the land was incurring damage due to the presence of the horses. Nonetheless, the United States Forest Service (USFS) and the United States Grazing Service, the predecessor to the Bureau of Land Management (BLM), responded to pressure from ranchers by removing tens of thousands of wild horses from federal property and allowing people to poison water holes and slaughter them without limit. (Cruise & Griffiths, 2010). As part of the plan to clear the range of wild horses, the government collaborated with rendering plants that paid hunters six cents per pound to remove horses for eventual slaughter. (Cruise & Griffiths, 2010). For example, according to one BLM official, "within a period of four years [1946 to 1950] [BLM] removed over 100,000 abandoned and unclaimed horses from Nevada ranges." (Cruise & Griffiths, 2010, p. 59).

Many people, outraged at the practice of slaughtering wild horses, encouraged Congress to pass the Hunting Wild Horses and Burros on Public Lands Act in 1959. (Ryden, 1999, p. 219). The Act banned the hunting of wild horses on federal land from aircraft or motorized vehicles. 86 P.L. 234, 73 Stat. 470 (1959). After passage of this law, however, ranchers and others continued to sell and slaughter wild horses. (Cruise & Griffiths, 2010).

In 1971, upon finding that "these horses and burros are fast disappearing from the American scene" and that they "contribute to the diversity of life forms within the Nation and enrich the lives of the American people," Congress passed the Wild Free-Roaming Horse and Burro Act (WHBA). 16 U.S.C. § 1331 *et seq.*

Under the WHBA, the Secretaries of the Interior and Agriculture, through their delegates BLM and the USFS, respectively, are vested with the authority to protect wild horses and burros on public land. Specifically:

> All wild free-roaming horses and burros are . . . declared to be under the jurisdiction of the Secretary for the purpose of management and protection in accordance with the provisions of th[e] Act. The Secretary is authorized

> and directed to protect and manage wild free-roaming horses and burros as components of the public lands, and [s]he may designate and maintain specific ranges on public lands as sanctuaries for their protection and preservation . . . .

16 U.S.C. § 1333. Wild horses were to be limited in range to "their known territorial limits," also known as Herd Areas (HAs). *Id.* at § 1332(c), 1333. The agency then further defined HAs as areas within them that met criteria to support a wild horse population and could be managed for populations of wild horse through Land Use Plans. These areas are known as Herd Management Areas (HMAs). (National Resource Council, 2013).

The Public Rangelands Improvement Act (PRIA) of 1978 required BLM and USFS "to maintain a current inventory of wild free-roaming horses and burros on given areas of public lands" in order to:

> make determinations as to whether and where an overpopulation exists and whether action should be taken to remove excess animals; determine appropriate management levels of wild free-roaming horses and burros on these areas of the public lands; and determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels).

Public Rangelands Improvement Act of 1978, Pub. L. No. 95-514 § 14(b)(1), 92 Stat. 1803 (1978). The agency must set these appropriate management levels (AMLs) according to the condition of the resources, and so they must be adjusted over time: "[t]he establishment of AML is not intended to be a onetime determination but rather a fluid process where adjustments are made based upon environmental changes and management needs." (BLM, 2009a, p. 17; *see also* Downer, 2011, p. 73). The AML must also factor in "multiple-use relationships." (16 U.S.C. § 1332(f); BLM, 2009, p. 17). The Interior Board of Land Appeals has "interpret[ed] the term AML within the context of the statute to mean that optimum number of wild horses which results in a thriving ecological balance and avoids deterioration of the range." (BLM, 2009, p. 17).

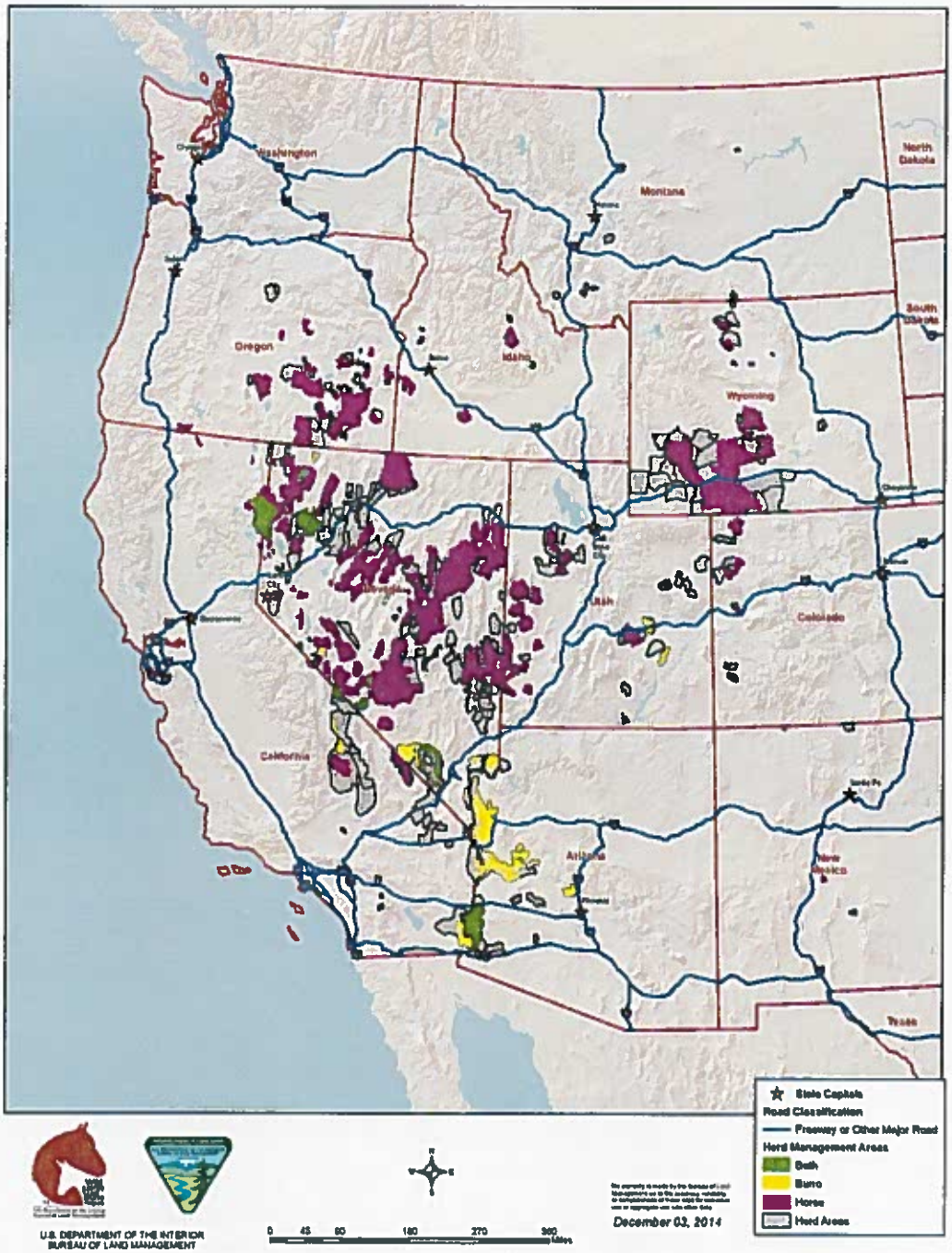
The above statutory scheme describes the management of wild horses on BLM and USFS lands. Wild horses are also found on Bureau of Indian Affairs (BIA), FWS, and state lands. There is no general management scheme for wild or feral horses on tribal lands; rather, reservations must individually develop management plans. This piecemeal management renders it difficult to adequately assess the number of horses that occupy these lands.

FWS also manages lands on which wild horses reside – namely, several national wildlife refuges. The mission of the National Wildlife Refuge System is "to administer a national network of lands and water for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within

the United States for the benefit of present and future generations of Americans." (FWS, 2015). These decisions regarding the management of wild horses, while broadly governed by a patchwork of federal statutes applicable to the refuge system, are largely made in the context of the specific purposes of the designation of each refuge and, in turn, the priorities set for that area. Generally, FWS treats wild horses on refuges as nonnative or invasive species, and thus a threat to other native wildlife, frequently resulting in removals. (*See, e.g.*, FWS, 2014a; FWS, 2014b). By labeling wild horses as nonnative, FWS provides legal impetus for the removal of these animals. For example, the wild horses of the Sheldon National Wildlife Refuge were removed in 2014. FWS explained: "National wildlife refuges are established for the protection of native wildlife and habitat. . . . This refuge was set aside . . . primarily for the conservation of pronghorn antelope and other native wildlife species. . . . Horses and burros are not native to Sheldon and . . . must be managed consistent with the refuge's" purposes. (FWS, 2014b).

The National Park Service manages several herds of wild horses, including those inhabiting the Assateauge Island National Seashore and Shackleford Banks. The Department of Defense (DOD) works in partnership with BLM to manage horses on DOD lands, such as the Nellis Air Force Base Range. (National Horse & Burro Rangeland Management Coalition, 2015). Finally, wild horses also occupy some state lands in the western United States, under varying management schemes. In New Mexico, wild horses are categorized as stray livestock, and can therefore be round-up and sold. (Prieskop, 2016). In Utah, there have been partnerships with BLM for the round-up of wild horses from state lands. (Maffly, 2016). Thus, wild horses on lands outside of BLM and USFS lands are subject to patchwork management schemes, but generally are not prioritized for preservation, and are considered invasive animals. On many of these other lands, wild horses experience extensive crossbreeding with domestic horses.

Figure 1. Herd Management Areas[4]



[4] Available at https://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/wild_horses_and_burros/public_land_stats/2015_maps.Par.79082.File.dat/20141203_HMA_National_Map_18x24_Map1%20(2).pdf

B. Decline of Wild Horse Populations Throughout the United States.

Overall, the wild horse population is fragmented to isolated and small herds that threaten the species' survival. Wild horses once inhabited most of the western states, ranging freely in search of water and forage. However, they are now confined to a patchwork of HMAs scattered across the western landscape. The areas allocated for use by wild horses were locked-in at the time of the WHBA's passing in 1971, when HAs were defined by the "known territorial limits" of wild horses. Despite the fact that the land wild horses inhabited in 1971 was already significantly curtailed, this "lock-in" occurred more than a century after intense efforts to eradicate wild horses were made. Thereafter, HAs were further scaled down to HMAs, or the areas determined to be suitable for wild horses.

Even after passage of the WHBA in 1971, the amount of habitat available for wild horses persisted, and continues to dwindle as land is currently altered for energy development and urbanization, as well as for commercial ranchers to graze livestock. Indeed, the WHBA prevented the expansion of wild horse habitat by stipulating that "nothing in this Act shall be construed to authorize the Secretary [of the Interior or Agriculture] to relocate wild free-roaming horses or burros to areas of the public lands where they do not presently exist." 16 U.S.C. § 1339. After the passage of the WHBA, BLM was given a transitional period from 1971 to 1974 to take an inventory and assess boundary lines for wild horses.

> During this time the "public" was given opportunity to claim "private property" from the ranges. There have been interviews given where individuals claim personal knowledge of horses being moved or shot prior to assessments of the land "where presently found" as a tool to keep horses from being "found" on certain allotments. Range boundary lines were drawn that did not follow any scientific method. Boundaries were drawn where animals stood at the time of the assessment without any comprehension of seasonal movement in a population labeled as "free-roaming."

(Leigh, 2013).

Since that time, the limited range of wild horse has further decreased. When Congress passed the WHBA in 1971, wild horses and burros roamed across approximately 53.8 million acres, of which 42.4 million acres were under BLM's jurisdiction. (BLM, 2013a). Today, wild horses can only be found in a subset of these areas that comprise 31.6 million acres in ten western states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Wyoming. Of this area, 26.9 million acres are under BLM management. Therefore, since the passage of the WHBA, wild horses have lost 22.2 million acres – over 40 percent of their 1971 habitat. (BLM, 2013a). Figure 1 shows current HMAs.

Rather than treat the source of the problem, the fragmentation and small size of available habitat, current managing agencies merely remove horses to meet AMLs that

reflect this small range size, historical degradation, and traditional allocation of land to competing uses. In determining the appropriate AML, the managing agency must also factor in "multiple-use relationships." (16 U.S.C. § 1332(f); BLM, 2009a, p. 17). Wild horses are considered only one component of public land. Neither statutes nor guiding documents require that wild horses be prioritized on public lands or even specifically within HMAs. Ongoing political sentiment continues to favor grazing interests over wild horses. This is reflected in the concurrent maintenance of harmfully low AMLs yet high levels of livestock grazing. Rather than reduce livestock grazing, wild horses are instead culled to lessen the pressure on rangelands.

The current management methods that keep wild horse populations artificially low harm populations' genetic viability and could lead to extinction of true American wild horses. Currently, there are no herds that have a large enough population to meet the IUCN Species Survival Commission's recommendation of 2,500 animals. (Duncan, 1992; Downer, 2014). Of the remaining HMAs throughout the West, 130 (72 percent) have AMLs of less than 150, including the AML for the Pryor Mountain Wild Horse Range (90 to 120), and many of these have AMLs far less than 100, even numbering in the teens. (BLM, 2013a). "According to the BLM's own substandard standard of 150, in California 19 out of 22 HMAs have non-viable AMLs; in Utah, 17 out of 21; in Idaho, 5 out of 6; in Montana, 1 out of 1 (6 of the original 7 HAs having been zeroed out); and in Nevada, 67 out of 90 of the remaining herds are similarly non-viable." (Downer, 2014, p. 16).

Experts have warned that the "majority of wild equid populations managed by BLM are kept at population sizes that are small enough for the loss of genetic variation to be a real concern." (Cothran, 2000, p. 1). The Equid Specialist Group of IUCN Species Survival Commission recommends minimum populations of 2,500 individuals for the conservation of genetic diversity. (Duncan, 5). Others have warned that populations managed with a target size of fewer than 500 horses are at some risk of losing more than 90 percent of selective neutral genetic variation over a period of 200 years. (Glover, 2000 p. 1119, n.74). Keeping these herds at non-genetically viable population numbers puts them at serious risk for extinction in the foreseeable future. Genetic viability consists of genetic diversity and results from several evolutionary forces: gene flow ("the recruitment of even a small number of unrelated breeding individuals into a population"), genetic drift ("random changes in allele frequencies between generations—a strong force in small populations and can result in rapid loss of genetic diversity"), mutation, and natural selection. (National Research Council Report, 2013, p. 144). However, when population sizes are significantly small and isolated, "it may reduce genetic diversity to the point where herds suffer from the reduced fitness often associated with inbreeding." (Id. at p. 146). Although a loss of genetic variability can lead to a reduction in fertility or viability of the population, inbreeding caused by small and isolated population, further increases the wild horse population's infertility and lack of viability. (Cothran, 2000; National Research Council Report, 2013, p. 146). These enforced artificial wild horse populations delineated by BLM negatively affect these animals. For instance, "there is evidence in horses that inbreeding

avoidance occurs in the harem band as fathers and stepfathers avoid copulating with related young mares." (National Research Council Report, 2013, p. 146). When these wild horses are forced to survive in small populations, there is an increase in inbreeding which results in lower sperm quality, lower genetic diversity, weakened "adult fertility and juvenile survival" as well as congenital defects such as club foot. (Id. at p. 147). Hence, the genetic value of wild horses is dictated not only by their environmental conditions but also their population size which invariably affect their livelihood and their progenies'.

C. Wild Horses are Distinct from Domestic Horses.

Wild horses are both behaviorally and physiologically distinct from domestic horses. (Berger 1986). Today, wild horses are largely found on federal public lands in the West. Their range consists primarily of arid lands. (National Research Council, 2013). These lands can be extremely harsh with very hot summers, cold winters and sparse vegetation. (De Steiguer, 2011). Wild horses can travel over one hundred miles round-trip over two to three days to reach watering holes. (Downer, 2014). On the other hand, domesticated horses live on private properties throughout the world, and are, generally, well taken care of by humans through the provision of food, water and suitable living conditions. (Oke, 2012; Equiculture, n.d.). Although it is unequivocal that some domestic animals suffer abuse at the hands of humans, the majority of domestic horses live in peace with very little hardship faced by wild horses. The hardships wild horses face serve as selective pressures and it is likely to affect the genetic make-up of those who have endured them. Hence, naturally adapting to these selective pressures may serve as an important tool for wild horses' survival. (Duncan, 1992; Downer, 2014).

Under such conditions, wild horses live and behave far differently than domesticated horses. Most notably, to survive in their ecological setting, natural selection among wild horses increases the chance of a population's survival by ensuring that the traits best suited for living in the arid, harsh American West are passed to future generations. (Downer, 2014; Duncan, 1992). Hence, as Darwin identified, wild horses that are able to survive and reproduce in the wild will pass their genes to surviving offspring, which can improve the fitness of the population. However, on the other hand, the breeding of domesticated horses is generally controlled through human-directed, selective breeding. (De Steiguer, 2011). From the time humans domesticated horses, approximately 5,000 to 6,000 years ago, they have been subjected to many forms of artificial selection which resulted in gradual genetic changes. (Árnason & Van Vleck, 2000). Today, there remains a growing interest in the application of scientific animal breeding theory to accomplish further genetic "improvement" of valuable traits in existing domesticated horse populations. (Id. at 473-74). However, such selection of desired traits is not intended to improve Darwinian fitness. Instead, the breeding objectives for domesticated horses "are expressed in monetary terms as economic weights to be applied to each trait of commercial importance." (Id.).

Consistent with Darwinian theory, wild horses are more physiologically suited for living in the wild than domestic horses. For example, some experts believe wild horses

have the ability to survive for longer periods without water than domestic horse breeds, which allows them to survive in the wild and travel long distances to water. (Beever, 2003, p. 892). Additionally, in comparison to domestic horses, wild horses have a relatively short hoof capsule, and the hoof walls go straight downward, without flare or convexity. (Jackson, 2008).

Wild horses live in highly structured, hard-won family groups and are acutely attuned to dangers in their environment, and wary of humans. (Fuller, 2009; Berger, 1986). These family groups, called bands, generally consist of several females (mares) protected by a dominant male (stallion). (Downer, 2014, p. 18). Some bands include multiple subordinate stallions, while others will exclusively have one stallion.

Both sexes disperse from their natal bands at around 1 to 3 years of age. (Ashley, 2004). Generally, a female will not go unaccompanied for more than several days before being discovered by a bachelor or band stallion. (Berger, 1986). Existing bands integrate females fairly quickly, and bachelors will capture females to form a new band. (Ashley, 2004). Dispersing males join a bachelor band until they form a new band by acquiring a female, either through stealing her from an established band, taking over an existing band by force, or gaining a dispersing female. (Id.). Additionally, an existing band may integrate a bachelor into the band as a subordinate stallion. (Berger, 1986).

Once a band is formed, the lead stallion usually watches out for and defends the band and sires the majority of the band's foals. The band stallion is protective over the mares and will defend against intrusion, takeover, or theft of females by outside males. In multiple male bands, the subordinate stallion is often the first to defend the band from outside males and the dominant stallion herds the mares and young away, but will join if encounters persist or escalate. (Downer, 2014).

Wild horses communicate through a range of vocalizations including neighs, grunts, and squeals. Pair-bonded animals that have been separated will neigh to locate each other at a distance. Both sexes snort in response to threats. Stallions will also use vocal signals to resolve dominance contests before they escalate to extreme physical contact. (McGreevy, 2012).

Aggressive encounters are usually centered on defending or fighting for mares. These encounters are often displaced through threatening postures, with necks arched and ears back, or squeals and screams. However, aggressive encounters that do escalate to fighting can lead to injury or death. One study noted that 95 percent of adult males bore combat scars and as many as 3 percent of males died from combat related injuries. (Berger, 1986, p. 170). These behaviors are unique to wild horses.

Finally, wild horses roam freely in the wilderness, and are often unable to survive the stress of being captured and held in captivity. (Ryden, 1999, p. 82-83). Indeed, wild horses have a highly-refined fight or flight reaction—bodily changes that enhance a horse's chances of surviving a frightening situation by increasing his/her alertness, capacity for physical exertion, and ability to withstand injury. (Nock, 2010).

On the other hand, domestic horses are accustomed to and dependent on human contact. Although domestic horses may exhibit social stratification, they do not exhibit the full complement of associations observed in free-roaming horses such as harem bands, multiple male and female bands, and bachelor groups. It has been recognized by researchers that domestication "resulted in diverse phenotypic and behavioral changes to wild animals, including decreased flight responses, increased sociality, earlier reproduction, and modification of endocrine and metabolic systems." (Marshall, et al., 2014, p. 6153).

Lastly, a study on behavioral patterns and communications in wild horses further underscores the distinction between domestic and wild horses. The study spanned a 7-month period, had no human manipulation with but one exception of including a boundary fence that excluded forty horses on the range. The study exclusively focused on the Pryor Mountain Mustangs and individually identified all 270 of them, many of which "showed evidence of the Barb and Andalusian bloodlines which were originally introduced to the American west by Spanish explorers in the 16th century." (Feist, J. & McCullough, D., 1976). More importantly, it was found that the Pryor Mountains' social organization is "typical of what is known of the well-studied plains zebra, and apparently of the less-well-known remaining populations of *Equus caballus*. (Id.). It was concluded that these horse populations did "represent a wide variation in genetic make-up, past history of handling in captivity, and length of time in the wild or semi-wild state." (Id.). Wild Horses as Native Species.

Critics of the proposition that modern wild horses, including Pryor Mountain Mustangs, are reintroduced native species in North America, selectively use the paleontological data to assert that the species, *Equus caballus*, which was introduced in approximately 1519, is a different species from that which was presumed to have disappeared from the North American fossil record between 13,000 to 7,000 years ago. However, "neither paleontological opinion nor modern molecular genetics support the contention that the modern horse in North America is non-native." (Kirkpatrick & Fazio, 2010, p. 2).

There is no dispute that *E. caballus* originated in North America, and evolved with the habitat here. (Kirkpatrick & Fazio, 2010, p. 5-6; Downer, 2014, p. 12). According to research based on fossil records, mitochondrial-DNA, and microsatellite data, the modern horse species, *E. caballus*, originated in North America approximately one to two million years ago. (Kirkpatrick & Fazio, 2010). Moreover, the last species of *Equus* believed to be in North America before extinction, which was formerly dubbed a unique species, *E. lambei*, due to its pony-like stature, has been revealed to not be genetically distinct from the modern *E. caballus*. (Kirkpatrick & Fazio, 2010). Additional evidence of this is the discovery of the remains of the "Yukon horse" in the 1990s, whose Latin name is *Equus lambei*. (Harington, 2002).

Carbon-14 dating of mitochondrial DNA, passed along the maternal line, have been meticulously analyzed by Dr. Ann Forstén and have substantiated the origin of the modern horse in North America at 1.7 million years ago. (Downer, 2014). According to Forstén: "[t]he early branching-off time indicated by mtDNA supports an origin of the caballoids [the horse branch of the horse family: *Equidae*] in the New World, and the fossil record suggests an even rather late dispersal to the Old World." (Forstén, 1992, p. 306)

Moreover, the suitability of wild horses in North American is described as follows:

> Wild horses and burros are perfectly suited to life in the remote, semi-arid regions of the West. One reason is obvious: their great mobility. With their long limbs and sturdy, single-unit (soliped) hooves, they are made for movement. In such semi-arid or arid regions as they inhabit, this extensive movement is vital for survival. In order to obtain enough forage, a wild horse must often roam over several square miles each day, selecting appropriate plants to prune; reaching a water hole may involve traveling over one hundred miles round trip in a grazing circuit of two or three days.

(Downer, 2014, p. 12).

The argument against the native status of wild horses is largely political. In a legal forum assessing the WHBA hosted by New York University, Dr. Ross MacPhee, the Curator of Mammalogy/Vertebrate Zoology at the American Museum of Natural History, responded to a "myth" posted on BLM's website that horses are native species. Dr. MacPhee stated:

> [E]very clause, every sentence about the foreignness of horses in the passages I just read is palpably wrong, demonstrably wrong, not only according to people like me but also to anybody who has any intimate understanding of the history of horses on this continent.
>
> Now let me just put this in a nutshell. The family Equidae evolved on this continent; it is as American as anything you could possibly imagine. That was 55 million years ago. Progressive evolution occurred thereafter, eventually culminating 1.8 million years ago when a horse very like modern horses evolved. With a very high statistical probability, domestic horses, The Horse, evolved from that precursor and spread throughout North America and then across land bridges to Eurasia and South America.
>
> Scientifically, the BLM's comment that The Horse did not biologically evolve on the North American continent is wrong, and therefore the additional comments about The Horse being foreign to the Western ecosystem is completely irrelevant.
>
> It is additionally irrelevant to say that today's ecosystem in which today's mustangs and feral horses survive is somehow completely different from what was here 10,000 years ago. That is simply not true.

(MacPhee, 2011, p. 2).

MacPhee concluded that, "if nothing else happens out of this discussion, what I want you to take home is the idea that scientifically, the idea that horses are an invasive species is utterly wrong." (MacPhee, 2011, p. 3). Indeed, scientists have found that, "[t]he non-native, feral, and exotic designations given by agencies are not merely reflections of their failure to understand modern science but also a reflection of their desire to preserve old ways of thinking to keep alive the conflict between a species (wild horses) . . . and the economic value of commercial livestock." (Kirkpatrick & Fazio, 2010, p. 6). "[F]rom a genetic, evolutionary, and ecological perspective, horses are native to North America." (Donlan & Martin, 2004, p. 268). The wild horses in North America now "are the same species that originated here, and whether or not they were domesticated is quite irrelevant." (Kirkpatrick & Fazio, 2010, p. 5).

Notably, the U.S. Ninth Circuit Court of Appeals also recognized wild horses as native species, explaining that BLM "establishes Appropriate Management Levels ("AMLs") for **populations of native species** - including wild horses, burros, and other wildlife - and introduced animals, such as livestock." *In Def. of Animals v. United States Dep't Interior*, 751 F.3d 1054, 1059 (9th Cir. 2014) (emphasis added).

SPECIES DESCRIPTION

A. Taxonomy of the Petitioned Species.

The petitioned population is a member of the North American, free-roaming species *Equus caballus* and is found along the Montana-Wyoming border in the Pryor Mountains. This population is referred to as the Pryor Mountain Mustangs, and will be referred to as such herein. More broadly, this population, and others, are commonly referred to as feral horses, mustangs, or wild horses. (Jenkins & Ashley, 2003). The full taxonomic classification is shown in Figure 2.[5]

Figure 2. Taxonomy of *Equus caballus*[6]

Kingdom	Animals
Subkingdom	Bilateria
Infrakingdom	Deuterostomia

[5] Scientists have concluded that wild horses in America are related to the wild Przewalski's horse (*E. c. przewalskii*). (Harington, 2002). The Przewalski horse is native to the steppes of central Asia, specifically Mongolia and is listed as endangered by the International Union for Conservation of Nature (IUCN). (Boyd & King, 2011).

[6] *Taxonomy of Equus Caballus*, Integrated Taxonomic Inf. Sys., http://www.itis.gov. (last visited May 24, 2017). The Integrated Taxonomic Information System (ITIS) is a coalition of federal agencies formed to create scientifically credible taxonomic information for scientific use and the American public.

Phylum	Chordates
Subphylum	Vertebrates
Infraphylum	Gnathostomata
Superclass	Tetrapoda
Class	Mammalia Linnaeus, 1758 – mammifères, mamífero, mammals
Subclass	Theria Parker and Haswell, 1897
Infraclass	Eutheria Gill, 1872
Order	Odd-toed Ungulates
Family	Equidae Gray, 1821 – Asses, Horses, Zebras
Genus	Equus Linnaeus, 1758 – Horses
Subgenus	Equus (Equus) Linnaeus, 1758 – Horses
Species	Equus caballus Linnaeus, 1758 – feral horse, Horse

B. History of the Pryor Mountain Mustangs

The petitioned distinct population segment, the Pryor Mountain Mustangs, finds its origins in the early equid family. The Pryor Mountain Mustangs occupy land that overlaps with the historic range of the equid family. Fossils of horses have been found in Carbon County, Montana, in or near the current range of the Pryor Mountain Mustangs, dating back to 7,540 and 1,270 years before the present time. (Downer, 2014; Downer, 2011, p. 14-19). Therefore, the equid family coevolved with the ecosystems of the Pryor Mountain range.[7]

The exact date of the return of horses to the Pryor Mountains, after the "Great Die Out" of the Pleistocene is uncertain; however, all accounts suggest that the population predates the arrival of white settlers. (Ryden, 1999, p. 239; USGS, 2000; Downer, 2014). Until recently, scientists had hypothesized that the first horses to return might have escaped from the neighboring Crow Reservation or from the Lewis and Clark expedition (Ryden, 1999, p. 238-39; Equine Science Update, 1994; Cohen, 1999). However, fossils found in Carbon County, Montana, were dated to 620 years before present, suggesting an even earlier arrival, or perhaps a continued inhabitation. (Downer, 2014).

1. Designation of the Pryor Mountain Wild Horse Range

By the early 1900s, several thousand horses had come to populate the Pryor Mountain area. (BLM, 2009a, p. 46). Like wild horses throughout the West, the Pryor Mountain Mustangs were subjected to poisoning and removal due to the perceived threat to grazing interests. The Pryor Mountain Mustangs were sold to the military for a Calvary remount program or sold to rendering plants for slaughter, as these horses were seen as

[7] "The key element in describing an animal as a native species is (1) where it originated; and (2) whether or not it co-evolved with its habitat." (Kirkpatrick & Fazio, 2010).

both a nuisance and a commodity. (BLM, 2009a, p. 47). Further, individuals were permitted to capture unbranded horses for private commercial use. (Id.).

Under continued pressure from grazing interests, "[i]n 1935, the Pryor Division of the Custer National Forest was closed to all horses by Secretarial Order. By the 1940s the concerted efforts to remove horses from Forest Lands and the construction of the southern boundary fences pushed most of the horses to the public domain to the south, east, and west of the National Forest." (BLM, 2009, p. 47, citing Brownell, 1999). Grazing within the Pryor Mountain range was significant, and left the land in a tenuous state. (USGS, 2000).

By 1964, there were approximately two hundred horses remaining in the Pryor Mountains. However, by 1964 local sentiment had shifted in support of these horses; much of the public "regarded the wild herd as a symbol of the Old West." (Ryden, 1999, p. 239). The strength of this public support thwarted a BLM plan to remove the entire herd that year. (Ryden, 1999, p. 239, 244, 246-47). In 1968, BLM, once again, attempted to round-up the entire herd, and return at most thirty-five horses, citing concern over available grazing resources. (Ryden, 1999, p. 239, 244-46). The reality of this concern was contested, especially as it was later discovered that there was no actual danger of starvation. (Ryden, 1999, p. 244, 252-59). National public outcry, again, stopped this round-up.

On September 9, 1968, in response to the strength of public support for this population of wild horses the Secretary of Interior, Stewart L. Udall, declared the entire area inhabited by the Pryor Mountain Mustangs, spanning 33,600 acres in Montana and Wyoming, as the Pryor Mountain Wild Horse Range (PMWHR) – the first such designation in the country. (BLM, 2009a, p. 3; Ryden, 1999, p. 256). The PMWHR was created specifically for the "protection and management of wild horses, wildlife, watershed, and recreation, archaeological and scenic values." (BLM, n.d.). In 1969, 1680 acres in Wyoming were added to the range. (Billings Resource Area Rangeland Management Plan Wilderness Designation, April 1983, p. A-42).

The range's borders and acreage continued to be adjusted after the passage of the Wild Free-Roaming Horse and Burro Act of 1971 and agency planning decisions. (BLM, 2009). The Act restricted the designation of Herd Areas (HAs) to where wild horse herds were found in 1971, which were then further reduced to those areas that BLM determined met criteria to support a wild horse population and could be managed for populations of wild horse through Land Use Plans. These areas are known as Herd Management Areas (HMAs). In 1974, the PMWHR was expanded after a comprehensive study determined where wild horses existed at the time of the passage of the WHBA in 1971. (BLM, 2009). The present boundary encompasses 39,000 acres. (BLM, 2009a, p. 108), and is managed by BLM, USFS, and the National Park Service. The Montana Department of Fish Wildlife and Parks and the Wyoming Game and Fish Department are responsible for wildlife, hunting, and fishing regulations on the range. (BLM, 2004, p. 4).

The PMWHR differs from most other available habitat throughout the West. First, wild horses must only compete with other wildlife and limited recreation. There is no livestock grazing, mining or exploration, or timber management within the PMWHR. (BLM, 2009a, p. 51). However, these activities occur in all lands surrounding the range, and within most other HMAs or wild horse habitat areas on other public lands. Further, the size of the PMWHR (39,651 acres) is larger than many other HMAs or habitat on public lands, especially when considering the unique lack of competing extractive land uses.

C. Physical Description.

The Pryor Mountain Mustangs carry the Spanish Barb, a "remnant of the once vast population of horses in the USA," that the the Spanish returned to the United States. (Sponenberg, 2011; Lynghaug, 2009). However, this particular Spanish lineage is no longer found in Spain. (Sponenberg, 2011). Through centuries of divergent selection, current horses are genetically distinct. (Id.). As a result, these "New World remnants [such as the Pryor Mountain Mustangs] are very important to overall conservation." (Id.).

Experts have stated the importance of preserving the Pryor Mountain Mustangs, and their unique genetics. Dr. E. Gus Cothran, from the Department of Veterinary Medicine and Biomedical Sciences at Texas A&M University, wrote: "[t]he combination of evidence points to almost certain Spanish origins of the Pryor horses. If the genetic marker data is considered along with conformational and coat-color characteristics of those horses, **the Pryor herd may be the most significant wild-horse herd remaining in the United States**." (Ryden, 1999, p. 320) (emphasis added). Veterinarian and rare-breed researcher Dr. Phillip Sponenberg agreed: "[t]hey are a unique genetic resource. . . . [i]f we lose these animals they are gone for good, **because they don't exist anywhere else**." (Cohen, 1999, p. 2-3) (emphasis added). Also, Dr. Sponenberg wrote that the population is "an important resource for Spanish Horse conservation in North America." (Sponenberg, 2011). While there are other populations of wild horses in the United States carrying this Old Spanish genetic lineage, the Pryor Mountain Mustang population is one of the most important source of this historic linkage to the earliest horses. The importance of this population must also be considered in the context of the scale of available habitat in the PMWHR and the lack of competing extractive uses.

This genetic lineage presents itself as rare phenotypes, such as body conformation and markings. The Pryor Mountain Mustangs are smaller than most wild horses found in North America, standing between 13.2 and 14.3 hands. (Cohen, 1999). The horses have a unique conformation, reflecting their Spanish heritage, with a narrow but deep chest, flat to slightly convex profile, also described as a Roman nose, distinct withers, short back, and sloping croup with a low-set tail. (Cohen, 1999; Pryor Mountain Wild Mustang Center, n.d.). Their muzzles are slender and tapered, with wide-set eyes. (Cohen, 1999).

The Pryor Mountain Mustangs have primitive markings,[8] and a wide variety of colorations. The primitive markings, darker than the body color, that can be found in the herd include "a stripe running down the back (a dorsal stripe), "zebra" stripes on the legs, wither bars, fish-boning off the dorsal stripe, and spider webbing on the face." (Pryor Mountain Wild Mustang Center, n.d.; Cohen, 1999; Lynghaug, 2009). Colorations include dun or zebra dun, grullo, red dun, apricot dun, bay, black, chestnut, sorrel, palomino, buckskin, roan, and sabino. (Pryor Mountain Wild Mustang Center, n.d.; Equine Science Update, 1994; Cohen, 1999).

D. Diet.

Wild horses, including Pryor Mountain Mustangs, are herbivores and feed predominantly on grasses and grass-like plants or shrubs (National Research Council, 1982). Wild horses have a caecal digestive system, meaning they do not decompose the vegetation they ingest as thoroughly as ruminant grazers, such as cattle or sheep. This allows the seeds of many plant species to pass through their digestive tract intact into the manure, which in turn gradually releases nutrients into the soil over all seasons to the benefit of soil, plants, animals, and the entire food web. (Downer, 2014; Duncan, 1992). Unlike ruminant grazers, which often rip up plants from their roots exposing soil to destructive wind and rain erosion, wild horses have upper and lower incisors that permit them to selectively nip pieces of vegetation without tearing out the root of the plant. (Downer, 2014; Berger, 1986). Additionally, wild horses consume dry, parched, and flammable vegetation, and thus may help prevent catastrophic wildfires. Wild horses' consumption of the dry and withered foliage also exposes many other species to more sun, air, and water allowing them to grow and flourish. (Downer, 2014; Berger, 1986).

Wild horses generally visit a water hole once per day, and may dig to water in dry riverbeds. (Natureserve, 2013). In the winter, horses are able to break through the ice to expose the water. These behaviors provide many species access to water that would otherwise perish. (Downer, 2014).

E. Reproduction.

In general, first reproduction by females occurs at two years, and the highest foaling rates occur among females age six to fifteen years old. (Garrott, Eagle & Plotka, 1991, p. 738). One study of Pryor Mountain mares indicated seasonal breeding cycles, with little to no ovulation during the winter and spring months, unlike domesticated mares. (Kirkpatrick & Turner, 1983). Wild horses typically produce, at most, one foal per season. (Ashley, 2004, p. 611). Studies have concluded that forage availability can affect foaling rates. (National Research Council, 2013).

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[8] Primitive markings typically refer to markings associated with primitive breeds, and are linked with dun colorations. These markings are found on Przewalski's horses, to which wild horses in America are related.

Given adequate habitat, wild horses will "limit their own reproductive capacities, either socially or biologically, when resources, including food, water, and space, become limiting. This involves stress and hormonal factors." (Downer, 2014, p. 18). For example, both the lead stallion and mare, aware of resources in their range, will inhibit reproduction among younger members of their band. (Id.). Although BLM estimates a 20 percent annual population growth rate in its herd size projections, a review of the available data by Gregg, LeBlanc & Johnston (2014), indicate that a 10 percent population growth rate based on yearling survival rates is more accurate.

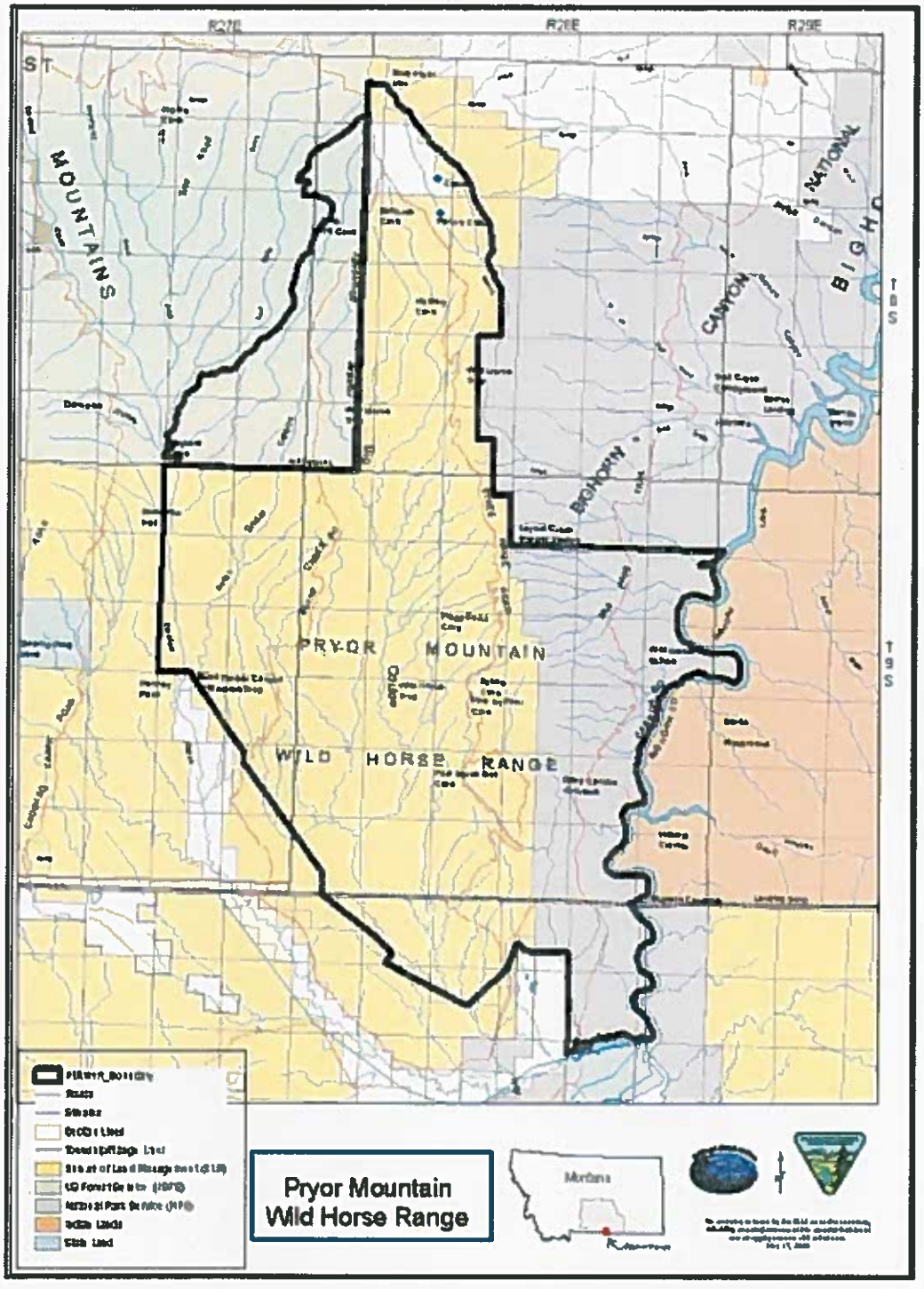
F. Habitat and Range.

The Pryor Mountain Wild Horse Range Herd Management Area (PMWHR) is located in southeastern Carbon County, Montana, and northern Big Horn County, Wyoming – approximately 50 miles south of Billings, Montana, and 10 miles north of Lovell, Wyoming. (BLM, 2009a, p. 3). Figure 3 shows the location and boundaries of the PMWHR. The range is located on the east flanks of the Pryor Mountain range where elevations range from 3850 feet to 8750 feet. (BLM, 2009a, p. 7). The PMWHR overlaps with the Bighorn Canyon National Recreational Area, Custer National Forest, and other state and private lands. (BLM, 2009a, p. 7; USGS, 2000).

The eastern border of the PMWHR is bounded by the steep canyons of the Bighorn Canyon National Recreation Area and the Bighorn River. The southern and southwestern border is enclosed by fencing, and surrounded by private land. The western boundary extends into the alpine regions of the Pryor Mountains. The current management plan includes the reconstruction of parts of this boundary fence to BLM Administrative Pastures and Crooked Creek Natural Area. (BLM, 2009a, p. 19-20; BLM, 2009b, p. 1). The nearest HMA to the PMWHR is the McCullough Peaks HMA in Wyoming, 26 miles away. (BLM, 2011b).

The range spans two distinct ecosystem types: the Northern Rocky Mountains and the intermountain desertic basin. (BLM, 2009a, p. 56; BLM, 2004, p. 13). The basin "supports shrub-grass vegetation. Big sagebrush, Gardner's saltbush, rhizomatous wheatgrasses, Indian ricegrass, and needle and thread are the dominant species. Black sage, Gardner's saltbush, and bluebunch wheatgrass are common on shallow soils in the uplands." (BLM, 2009, p. 56). In the Rocky Mountain, alpine system, "[d]ouglas-fir, lodgepole pine, subalpine fir, and limber pine, and juniper are the dominant overstory species, depending on precipitation, temperature, elevation, and landform aspect. The understory vegetation varies, also depending on climatic and landform factors." (Id.). In the lower elevations of the basins, average precipitation is between six and twelve inches. In the higher elevations, average precipitation can be as high as 22 inches. (Id.). The horses will shift throughout the range depending on forage and water availability, and elevation accessibility. (BLM, 2009, p. 8).

Figure 3. Map of the PMWHR.[9]



[9] Available at p. 7, http://www.pryormustangs.org/uploads/2009HMAP/PMWHR.pdf.

G. Population Estimates and Trends in the PMWHR.

In the PMWHR, BLM has the authority to establish the AML, based on observed habitat conditions, and monitoring. (BLM, 2009a, p. 2). In 1984, BLM established an AML of 121 horses, which was reduced to 95 in 1992. (BLM, 2009a, p. 8). In order to achieve these AMLs, BLM has prescribed the removal of "excess" horses and applied fertility control treatments to mares. (BLM, 2009a, p. 8-9). Since 1971, the population of the PMWHR has fluctuated between 87 and 195 horses, as a result of management actions. (BLM, 2009a, p. 8-9). In 2009, BLM changed the AML from 95 ("plus or minus 10% or 85 to 105 wild horses") to 90-120 horses, excluding the current year's foal crop – this is the AML that BLM is still using for 2017. (BLM, 2009b, p. 1, 7). The reduction of the AML to 90 was tenuously and inadequately substantiated as BLM lacked substantive data justifying its decision. Specifically, of the 39,000 acres that constitutes the Pryor Range, BLM exclusively based its decision on a 2004 NRCS Survey and Assessment of "6-key area sites" of which it believed to represent wild horse use-patterns and the PMWHR's ecology. (BLM, 2009a, p. 108 and BLM, 2009b, p. 3). The NRCS Survey measured the ecology and use patterns from 1996 with estimations up through and including 2007. (Id.). The most recent decision continued to authorize the removal of "excess" wild horses and the use of fertility control. (BLM, 2015a; BLM, 2015b).

In 2015, BLM estimated that the population was approximately 170 adult wild horses. (BLM, 2015b). That year BLM authorized a decision to implement "an annual incremental gather of excess wild horses by selectively removing wild horses . . . beginning in summer 2015." (BLM, 2015a; BLM, 2015b, p. 10). Under this annual gather plan, "[t]he herd would be evaluated to determine which excess animals would be removed annually. The gather would begin in 2015 with 15-20 excess wild horses removed." (BLM, 2015a; BLM, 2015b, p. 10). In August 2015, 50 wild horses were rounded up, and 18 were permanently removed from the PMWHR. (BLM, 2015d). Friends of Animals challenged BLM's 2015 Decision to remove wild horses in the District Court of Montana. *Friends of Animals v. Sparks*, 200 F. Supp. 3d 1114 (D. Mont. 2016). The Court found that the 2015 Decision violated NEPA and the Wild Free-Roaming Horses and Burros Act because it was based on the 2009 AML - an AML BLM committed to recalculate within five years. *Id.* at 1125-26.

Thus, BLM was required to recalculate the AML. However, in a Recalculation Report, BLM indicated that it would retain the 2009 AML of 90-120 wild horses (BLM, 2016). Thus, under existing regulatory mechanism BLM will likely continue to manage the Pryor Mountain wild horses at low numbers that put the population at risk of extinction.

QUALIFICATION AS A DISTINCT POPULATION SEGMENT

A. The Proposed Wild Horse DPS is Discrete.

The Pryor Mountain Mustang distinct population segment of *Equus caballus* is discrete, or "markedly separated from other populations of the same taxon as a consequence of physical [and] physiological . . . factors." 61 Fed. Reg. 4725. The purpose of the discreteness standard is to distinguish the population from others of the species – "[t]he standard established for discreteness is **simply** an attempt to allow an entity given DPS status under the Act to be adequately defined and described." *Id.* at 4724 (emphasis added). Courts have found this bar to be low: "[t]he test for discreteness . . . is not intended to be particularly rigid." *Ctr. For Biological Diversity v. Salazar*, 794 F. Supp. 2d 65, 97 (D.D.C. 2011). The discreteness standard enables the administration and enforcement of the ESA by ensuring that a listed DPS and an unlisted population can be distinguished. 61 Fed. Reg. at 4724.

1. Physical Separation.

The Pryor Mountain Mustangs are markedly distinct from other populations of the same taxon through physical separation, in such a manner that renders the population easily distinguishable from other populations of the species. The Mustangs occupy the Pryor Mountain Wild Horse Range HMA, whereby the distance as well as the natural and man-made physical features, such as fences, serve as barriers that physically separates them from other HMAs and prevents dispersals. (*See, e.g.*, BLM, 2009a, p. 30-32). Apart from BLM's direct interventions, these physical separations impede any overlap and interaction between the Pryor Mustang population and other wild and domestic horse populations.

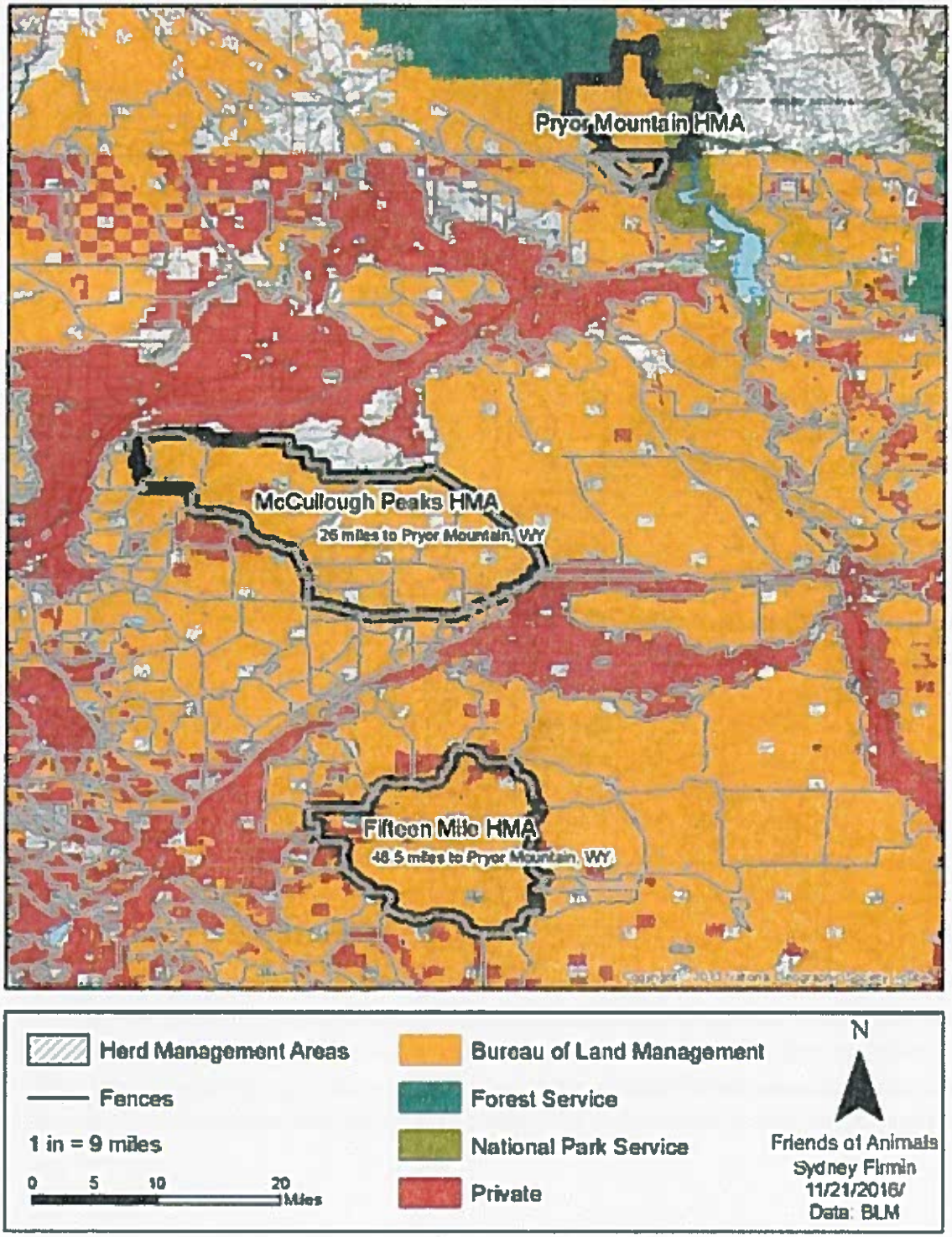
When established in 1968, the PMWHR was fully fenced, and a boundary fence further divided BLM land from USFS land, restricting horse movement and distribution. (BLM, 2009a, p. 92). Today, the PMWHR is almost entirely contained by either fencing or natural features that prohibit dispersal.

The eastern border of the PMWHR is bounded by the steep canyons of the Bighorn Canyon National Recreation Area and the Bighorn River. The southern and southwestern border is enclosed by fencing, and surrounded by private land. The western boundary extends into the alpine regions of the Pryor Mountains. The current management plan includes the reconstruction of parts of the north boundary fence located adjacent to the Forest Services' Lost Water Canyon of 9,520 acres. (BLM, 2009a, p. 20, 69; BLM, 2009b, p. 1).

The PMWHR, located on the Montana-Wyoming border, is at least 26 miles from any other HMAs. The nearest HMA, McCullough Peaks in Wyoming, is 26 miles away. (See Figure 4). Further physical separation exists between these two HMAs due to the Bighorn River and Bighorn Lake, as well as fencing, and private land. (See Figure 4). The nearest

HMA in Idaho is over 200 miles away, by way of the Absaroka Range and Yellowstone National Park – both of which serve as natural barriers to dispersal. (BLM, 2011b). The PMWHR is the only HMA in Montana. (Id.). There are no HMAs in either South or North Dakota. (BLM Wild Horse and Burro Interactive Web Map, n.d.).

Figure 4. Map showing fencing and private land between the PMWHR and the McCullough Peaks HMA.



On the other hand, domestic horses are maintained on private property, accustomed to human contact, and physically separated from bands of wild horses. (Christensen, et al., 2002). Likewise, there is no information available that wild horses on public lands regularly interact and comingle with wild horses on tribal lands.

Compounding these physical barriers, dispersal of the Pryor Mountain Mustangs is also limited by water availability. (BLM, 2009a, p. 3). Annual precipitation averages only six inches at the lower elevations of the PMWHR, but upwards of twenty-seven inches in the alpine high elevation. Available water is limited throughout the PMWHR such that BLM must install water sources for both, the herd's survival and for the purposes of redistributing the horses throughout the range. (BLM, 2009a, p. 11, 71). This suggests that the water scarcity of the Northern Intermountain Desertic Basins, the lowlands of the range, also limits horse dispersal into and out of the range, hence making the physical barriers increasingly more difficult to cross.

In sum, the Pryor Mountain Mustangs are markedly discrete through physical separation from other populations of the same taxon. This marked separation is precisely what has allowed the Pryor Mountain Mustangs to continue to survive and evolve in the wild virtually unaltered by the influence of domestic saddle stock, and it is sufficient to allow for the population to be adequately defined and described as a Distinct Population Segment.

2. Physiological Separation

Wild horses, as described above in section, are physiologically separated from domestic horses. [10] Wild horses are more physiologically suited to survive in arid environments—they have the ability to survive longer periods of time with limited to no water and to travel longer distances in these drought-like conditions due to physiological differences. Pryor Mountain Mustangs, through their distinct genetic and physiological traits, are further distinct from wild horses, generally, as well as from domestic horses.

Pryor Mountain Mustangs carry the Old Spanish genetic lineage, and serve as one of the most important resources for preserving this lineage in the United States. This lineage manifests in rare phenotypes, such as specific conformations, colorations, and markings, as described above. Colorations include grulla, mouse-gray, duns, cream-colored, blue roans and pure black. (Cohen, 1999). The Pryor Mountain Mustangs often have primitive markings, indicative this Old Spanish genetic lineage, or any lineage traceable to early horses. (Id.). These markings include zebra striping on their legs and dark striping down their backs and withers. Dun coloration and primitive markings are attributable to a gene traceable to ancient horses. (Id.).

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[10] *See supra/infra* pp. 23-27 for a description of the ecology of PMWHR.

While the Pryor Mountain Mustangs are not the only wild horse population carrying this Old Spanish genetic lineage, these herds are rare throughout the United States. In other HMAs, these herds are continuously subject to crossbreeding and dilution of the genetic line.

The Pryor Mountain Mustangs still strongly carry this genetic evidence, and the rarity of this lineage renders the population physiologically distinct.

3. Distinct Legal Status

The Joint DPS Policy does not list distinct legal status as a factor to be considered in determining whether a population is markedly separate from the rest of the taxon, and therefore discrete. However, the statutory and regulatory mechanisms indicate that the Pryor Mountain Mustangs are discrete according to the purposes of the requirement (to ensure that the population can be defined and distinguished for the purposes of administering the ESA), and therefore should be considered here. Indeed, the Pryor Mountain Mustang population is already treated as being readily identifiable and discrete for purposes of BLM's ongoing monitoring and management of the Pryor Mountain HMA under the WHBA. The existing management structure for the PMWHR, indicates that the herd can similarly be treated as distinct under the ESA as a DPS.

B. The Proposed Pryor Mountain Mustang DPS is Significant.

The Pryor Mountain Mustang Distinct Population Segment is significant in light of its "importance to the taxon to which it belongs." 61 Fed. Reg. 4725 (Feb. 7, 1996). This requirement reflects the purposes of the ESA: "[t]he Services consider the Act to be directed at maintenance of species and populations as elements of natural diversity." *Id.* at 4724. The role of this "significance" requirement is to limit the scope of the use of DPS listings, so as to "concentrate conservation efforts undertaken under the Act on avoiding important losses of genetic diversity." *Id.*

Consideration of a species' biological and ecological significance under the DPS Policy includes, but is not limited to, the following factors:

(1) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon,
(2) Evidence that loss of the discrete population segment would result in a significant gap in the range of a taxon,
(3) Evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or
(4) Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Id. at 4725. The Pryor Mountain Mustang DPS specifically satisfies the significant gap in the range and genetic significance factors.

1. **Pryor Mountain Mustangs Differ Markedly from Other Populations of the Species in Their Genetic Characteristics.**

The Pryor Mountain Mustang population is significant due to its unique genetic characteristics. The population carries genetic links to the Colonial Spanish horses, retaining unique primitive traits that the Spanish ancestry had carried from those horses that had originally evolved in North America. (Lynghaug, 2009). While this genetic lineage can be found in other wild horse herds, the evidence of this Old Spanish lineage in the Pryor Mountain Mustang population is some of the strongest as compared to other populations.

Experts have stated the importance of preserving this herd, and its unique genetics. Dr. E. Gus Cothran, from the Department of Veterinary Science at the University of Kentucky, wrote: "[t]he combination of evidence points to almost certain Spanish origins of the Pryor horses. If the genetic marker data is considered along with conformational and coat-color characteristics of those horses, **the Pryor herd may be the most significant wild-horse herd remaining in the United States**." (Ryden, 1999, p. 320) (emphasis added). Veterinarian and rare-breed researcher, Dr. Phillip Sponenberg agreed: "[t]hey are a unique genetic resource. . . . If we lose these animals they are gone for good, **because they don't exist anywhere else**." (Cohen, 1999, p. 2-3) (emphasis added).

BLM has also indicated the importance of preserving this genetic lineage. As one of the agency's herd characteristic objectives, the agency seeks to "[m]anage the population for a phenotype reminiscent of a Colonial Spanish Type horse in order to prevent the loss [of] "Spanish" characteristics." (BLM, 2009a, p. 27).

Genetic analyses have proven that the Pryor Mountain Mustangs carry the old Spanish lineage. Dr. E. Gus Cothran has conducted numerous genetic analyses of the herd, relied upon by BLM. Further, he found strong evidence of Spanish blood and that the herd clustered within a group of Iberian horses. (Cothran, 2010; Cothran, 2013). Cothran has found three variants that indicate "Old Spanish" genetic influence, further supported by seven markers of lesser importance. (Cothran, 2010).

This genetic lineage is expressed through rare physical traits. The primitive characteristics exhibited by the herd include "zebra" striping of the back legs and shoulders, as well as dun and grullo colorations. (Pryor Mountain Wild Mustang Center, n.d.). The horses are also smaller in size, with distinct conformations similar to Colonial Spanish horses, including a narrow chest, flat to convex profile, distinct withers, short back, and a sloping croup with a low-set tail. (Pryor Mountain Wild Mustang Center, n.d.).

Dr. Cothran has expressed the need for caution in the management of the herd: "[c]onsidering the significance of this herd to the wild horse program and to the Colonial Spanish horses of the USA, as much variation as possible should be preserved without introduction of horses into the herd in the future." (Cothran, 2010, p. 5). Further, he noted a general decline in variation levels of the herd from 2010 to 2013, and recommended that the population size should be increased if the conditions of the range allowed. (Cothran, 2010; Cothran, 2013).

The unique genetic traits of the Pryor Mountain Mustangs, considered in combination with the size of the PMWHR, make it clear that this population presents the best opportunity to preserve the historic genetic lineage of wild mustangs that first roamed the American West across a sustainable range. Other populations of wild horses are confined to fragmented habitat in the western United States, as described in section * above, where managing agencies reduce horse populations to unsustainably low numbers and continuously manage the horses' existing habitat for "multiple uses," including livestock grazing and mineral extraction. The PMWHR is over 39,000 acres, larger than most other HMAs, and does not have any other competing uses, save for limited recreation. The range is also isolated from other wild or domestic horses, reducing the likelihood of interbreeding and making the Pryor Mountain Mustangs genetically distinct from other horse populations. The Pryor Mountain Mustang population, therefore, represents our best opportunity for preserving this genetic lineage in a viable population using passive management approaches.

2. Loss of the Pryor Mountain Mustangs Would Result in a Significant Gap in the Range of the Taxon.

The loss of this population would result in a significant gap in the range of the taxon. Evaluation of this DPS significance factor can include consideration of the reduction in the geographical range, including the historical range. *Nat'l Ass'n of Home Builders v. Norton*, 340 F.3d 835, 847-49 (9th Cir. 2003). However, geographic considerations are not the only focus of this factor. Rather, the loss of a DPS would result in a significant gap in the range of the species if that DPS "develop[ed] distinctive morphological, behavioral, or genetic characteristics through adaption to local conditions." *Nw. Ecosystem All.*, 475 F.3d at 1146. Thus, the loss of the DPS, while perhaps resulting in a significant reduction in range, would not necessarily be significant if that DPS did not have distinctive traits that had resulted from occupying that part of the range. *Id.*

The Pryor Mountain Mustangs carry the Old Spanish genetic lineage from primitive Eurasian horses that are genetically indistinguishable from, and are thought to be conspecific with, early equids that evolved in North America. Thus, this Old World lineage evolved in the types of ecosystems found in the PMWHR. While wild horses have returned to other portions of the species' historical range, only some of these populations carry the Old Spanish genetic lineage, most of which have suffered from extensive interbreeding with

domestic saddle stock and have become more closely related to modern breeds. The Pryor Mountain Mustang population presents one of the best opportunities to preserve this genetic lineage, due to the strength of the lineage, size of the PMWHR, lack of competing extractive uses in the range, and current isolation from other horses. The maintenance of this population would allow this lineage and these ecosystems to continue to coevolve.

Furthermore, given the continued decrease in wild horse populations throughout the United States – and the political and social threats that show no signs of easing – the loss of any populations could pose threats to wild horses. Coupled with the genetic significance of the herd, the loss of the Pryor Mountain Mustangs would result in a significant gap in the range of the taxon. Again, as described in the prior subsection, listing the Pryor Mountain Mustang population represents the best opportunity for preserving the Old Spanish lineage.

IDENTIFIED THREATS TO PRYOR MOUNTAIN MUSTANGS: CRITERIA FOR LISTING

The Pryor Mountain Mustang DPS is in danger of extinction throughout all or a significant portion of its range, or is likely to become so, and therefore its listing is justified. 16 U.S.C. § 1532(6), (20). The DPS is at risk due to: "(A) the present or threatened destruction, modification, or curtailment of its habitat or range; . . . (D) the inadequacy of existing regulatory mechanisms; [and] (E) other natural or manmade factors affecting its continued existence." *Id.* at § 1533(a)(1).

A. The Pryor Mountain Mustangs are Endangered by the Present or Threatened Destruction, Modification, or Curtailment of their Habitat or Range.

The PMWHR is one of the few remaining fragmented portions of wild horse range left in the United States. Throughout the country, wild horses are constrained to fragmented habitat, often already depleted from historical or concurrent grazing or extractive uses. Meanwhile, available habitat outside of designated HMAs continues to vanish. In enacting the ESA, Congress specifically recognized that past losses of habitat and range are the most serious threats to a species' survival. For example, the House Report for H.R. 37 concluded:

> Man can threaten the existence of species of plants and animals in any of a number of ways, by excessive use, by unrestricted trade, by pollution or by other destruction of their habitat or range. The most significant of those has proven also to be the most difficult to control: the destruction of critical habitat.

H.R. REP. NO. 93-412, at 144 (1973). Indeed, it is because "species of fish, wildlife, and plants have been so depleted in numbers that they are in danger of or threatened with extinction" that the ESA was enacted "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." 16 U.S.C. §§ 1531(a)(2), (b).

FWS must consider the *present* destruction and curtailment of a species' habitat or range. *Id.* at § 1533(a)(1)(A). "Destruction" is defined as "[t]he act or process of destroying" and "[t]he condition of having **been destroyed**." The American Heritage Dictionary of the English Language, 493 (4th ed. 2000) (emphasis added). "Curtailment" is defined as "the state of being curtailed." "Curtailment" Merriam-Webster Online Dictionary (11th ed. 2004) http://www.merriam-webster.com/dictionary/curtailment (May 24, 2017). Thus, when the Secretary receives a petition to list a species, FWS must determine whether a species' range is presently destroyed or curtailed, *i.e.*, whether a significant portion of its range no longer exits. The ESA mandates that FWS consider the present, not just the threatened, destruction, modification, and curtailment of current habitat or range.

Despite being established three years before the WHBA, the PMWHR's boundaries were still defined by the extent of the herd in 1971. The Pryor Mountain Mustang population is limited to the boundaries of the PMWHR, constrained by fencing and natural features. At its establishment, the rangeland conditions were already degraded from decades of overgrazing. (BLM, 2009a, p. 49). The horses are unable to disperse to locate water and forage as they ordinarily would do if they were able to range freely and self-regulate. Despite the slim possibility of horses finding their way outside the boundaries, they would encounter private properties, additional fencing, development, extractive industries, and grazing allotments. Nonetheless, the population is reliant on man-made water features and supplemental forage. This manipulation and constraint results in the justification, according to the Public Rangelands Improvement Act, for the establishment of an artificially low AML, and subsequent removal of horses to meet the limit.

The piecemeal management of the wild horse range left the Pryor Mountain Mustang population in a tenuous state, where the population is kept artificially low by restricting their movement, and in turn restraining their access to adequate water and forage necessary to support a larger population. This management is supported by statutory authorization to remove "excess" horses. 16 U.S.C. § 1333. Meanwhile, HMAs face continued threats of conversion to other uses, including but not limited to the loss of potential habitat outside current HMAs. Thus, the Pryor Mountain Mustang DPS is kept precariously small through self-perpetuating mandates, including the present curtailment of its range.

B. The Pryor Mountain Mustangs are Endangered Due to the Inadequacy of Existing Regulatory Mechanisms.

Existing regulatory mechanisms allow BLM to excessively manage the Pryor Mountain Mustang population under a management plan that aims to maintain population numbers below what is necessary for a minimum viable population, let alone to preserve the herd's unique genetic lineage. The goals of maintaining the herd should be two-fold: (1) to maintain population numbers at high levels to preserve the resiliency of the population and reduce the possibility of a genetic bottleneck; and (2) to maintain the unique genetic lineage. Under the PRIA, BLM must establish an AML for the range, according to range

conditions and multiple-use considerations. The most recent AML for PMWHR is set at 90-120 wild horses. The PRIA also authorizes BLM to "determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels." PRIA, Pub. L. No. 95-514 § 14(b)(1), 92 Stat. 1803 (1978).

The PMWHR AML is below all recommended population levels to ensure the survival and fitness of the DPS. Studies suggest that population size of 5,000 may be necessary to ensure maintenance of fitness (National Research Council, 2013, p. 149). The Equid Specialist Group of IUCN Species Survival Commission recommends a minimum population size (N) of 2,500 individuals for the conservation of genetic diversity (Duncan, 1992, p. 5). A USGS report found that "minimum goals for genetic viability in the Pryor Mountain wild horses ([genetic effective population size ("N_e")] > 50) require that at least 160 animals be present on the range (Singer & Zeigenfuss, 2000). Since the $N_e > 50$ goal is set for the breeding of domestic animals, and since the vagaries of drought, severe winters, predation, and other stochastic events cause stress in wild animals, larger goals for N_e (e.g. $N_e > 100$) for wild horses are even more desirable." (Wockner, et al., 2004) (internal citations omitted).

While the population of the PMWHR has remained above the range's AML in recent years, management actions have been implemented to return the population to within the range of the AML. The 2009 PMWHR HMA plan similarly authorized the use of "a combination of population control techniques, including gathers, fertility control, natural means or a combination of prescriptions" to keep the herd within this low AML. (BLM, 2009b, p. 1).

BLM purports to conduct these gathers in such a way that preserves the unique genetic lineage. However, the population numbers remain below the minimum level for genetic viability and diversity, whereby placing the lingering horses that carry on this lineage at risk of genetic bottleneck.

The existing regulations allow for the above management actions to occur, and further place the DPS at risk of extinction. In fact, the carrying capacity of the PMWHR is likely much higher than the current AML, suggested by the scale of the HMA and lack of competing interests.

C. The Pryor Mountain Mustangs are Endangered Due to Other Natural or Manmade Factors Affecting Their Continued Existence.

Management of the PMWHR does not occur in a vacuum. Instead, it is subject to broader political and cultural pressures that wild horses face nationwide. Throughout modern history, wild horses have been scapegoats for other environmental harms, including overgrazing by cattle and sheep, development, and natural forces such as fire or drought. Rather than address the other causes of poor range conditions, wild horses have been declared the causal agent that must be removed as "excess." Thus, political and social

pressures continually shadow every management decision for the PMWHR, and must be considered in concert with PMWHR planning.

Although polls show an increased support for wild horses and a waning interest in allowing livestock on public lands, there remains a dedicated force of people who pressure BLM, sometimes with legal force, to keep wild horses at these dangerously low and genetically unsustainable AMLs.[11] For example, on December 30, 2013, the Nevada Farm Bureau Federation joined the Nevada Association of Counties in a lawsuit filed against the U.S. Department of the Interior and BLM. The Nevada Farmer Bureau and their co-plaintiffs demanded in the suit that the Government Defendants "promptly and without delay, proceed to auction, sell and otherwise properly dispose of such animals in accordance with the Act's provision establishing the actions and their priorities;" and "recognize that free-roaming horses and burros have no water right in Nevada." Compl. at 49, *Nev. Ass'n of Counties v. United States Dep't Interior*, 2014 U.S. Dist. LEXIS 46225 (D. Nev. Apr. 2, 2014) (No. 13-cv-00712).

Additionally, Rock Springs Grazing Association filed a lawsuit in the District of Wyoming requesting that the Court order BLM to remove wild horses from private grazing lands adjacent to federal herd management areas within a roughly 2 million-acre patchwork of federal and private lands in Wyoming. Ultimately, this resulted in a Consent Decree with BLM agreeing to remove the maximum amount of horses from designated herd management areas and keep the number of animals at the low end of the, **already low**, AML. *See Rock Springs Grazing Ass'n v. Salazar*, 935 F. Supp. 2d 1179, 1185, 1188, 1191 (D. Wyo. 2013).

Recently in Iron County, Utah, the County Commission Chairman and the County Sheriff wrote a letter to BLM directors stating that if action was taken to confiscate privately-owned cattle that were trespassing on BLM land without first removing wild horses from that land, then "appropriate management level orders will be given to Iron County Sheriff, deputies and other authorized agents to take necessary means to reduce number of feral horses. . . ." (Miller, 2014, p. 2).

Under this continuous threat, and compounded with the tenuous state of wild horses throughout the United States, more robust and intentional protections for wild horses are necessary. Hence, protecting the Pryor Mountain population must be a priority

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[11] In a Public Policy Polling survey released in January 2014, 72% of respondents supported protecting wild horses and burros as "living symbols of the history and pioneer spirit of the West." (Prettyman, 2014, p. 2). Comparatively, in a poll from Center for American Progress **only** 29% of respondents supported ensuring lands are available for livestock grazing. (Hart Research Associates, 2013, p. 1).

that requires stronger federal protection and oversight. Of the several reasons that signal that the current federal program requires more stringent protection of wild horses, three stand out.

First, horses may be sold and slaughtered. Individuals like Tom Davis have not only found loopholes in the current program but have made clear that the root of the problem is apparent to its architects – BLM: "in selling so many loads of horses, BLM had to know that the horses would end up at the slaughterhouse." (Meija, 2015; BLM Investigative Report, 2015, p. 1, 3). Although Tom Davis, a small livestock hauler in Colorado, facially denied allegations of directly transporting the 1,794 horses he had acquired since 2009, the BLM failed in ensuring that said horses went to good homes. (Id.). Investigators unearthed that not only did the BLM fail to verify Davis' information but even more dreadfully they failed to investigate reports it had received with respect to Davis sending such government-protected horses to slaughter. (Meija, 2015; BLM Investigative Report, 2015, p. 6). In 2015, David Philips' discussion of Tom Davis was updated: "Three years ago, we revealed that the federal government, which is supposed to protect wild horses, was instead selling them to an advocate of horse slaughter. It wasn't clear what happened to the horses after that. Now it is: a government report has found that 1,700 protected horses were killed." (Philips, 2015).

Second, on May 23, 2017, President Donald Trump released a 2018 budget proposal which further signals an imperative to strengthen federal protection of wild horses. (BLM, 2017). The proposals include:

> (1) eliminating the current policy of captured wild horses and burros being offered for sale without limitation when they reach 10 years of age or fail to be adopted three times; (2) removing "language restricting BLM's ability to use all of the management tools authorized in the 1971 Act," including euthanasia and unlimited sales, scrapping Congress's prohibitions in previous appropriations bills that barred BLM from euthanizing healthy animals; (3) slashing the Wild Horse and Burro Program budget by 12%, about $9.7 million, despite it making up a tiny fraction of the federal budget; and (4) allowing the transfer of captured wild horses and burros to other government agencies in a way that strips them of the protections under the Wild Horse and Burro Act and lacks sufficient protections for the animals' future well-being.

(BLM, 2017; Return to Freedom, 2017, May 26). Should these proposals go into effect they will eviscerate the already tenuous protections of wild horses, including the Pryor Mountain horses.

Third, the manner through which roundups are conducted are gruesome and often harm or kill wild horses. In 2015, BLM authorized a decision to implement "an annual incremental gather of excess wild horses by selectively removing [them] . . . beginning in [the] summer 2015." (BLM, 2015a; BLM, 2015b, p. 10). On its face, this annual gather plan

can, arguably, be viewed as beneficial as "[t]he herd would be evaluated to determine which excess animals would be removed annually, [starting] in 2015 with a goal of 15-20 excess wild horses removed" to remain consistent with BLM's stated goal of maintaining the population consistent with the AML. (BLM, 2015 a; BLM, 2015b, p. 5, 10). The seemingly beneficial nature of this plan lacks meaningful proactive depth. The mechanisms used to gather wild horses usually involve helicopter stampede. (Myers, L. & Austin, M., 2013). This mechanism not only "spark[s] panic in . . . herds and place[s] undue stress on the animals – particularly in late winter or during droughts. Of particular concern are mares that are pregnant during the roundups. Foals, unaccustomed to running lost distances, can also suffer various limb injuries that make them unsuitable for adoption." (PBS, 2010, Dec. 22). Further, Laura Leigh, advocate with Wild Horse Education, a non-profit, has spent over 500 days observing roundups and documenting the resulting injuries and deaths of horses during gathers. (Myers, L. & Austin, M., 2013). Of the tragic occurrences Leigh had witnessed, horses in the gather suffered from broken legs, legs ripped by barbed wire, were kicked in the head, and some were dragged by rope. (Id.). Another eyewitness, Mosie Trewhitt, documented an incident of a pregnant mare driven by both a helicopter and wrangler who had escaped by jumping a fence yet suffering the cost of becoming entangled with barbed wire, and acquired a serious laceration on her leg, likely leading to infection. (Cloud Foundation, Mar. 4, 2014.).

The effects of gathers are prolonged and the initial fight-flight reaction, initiated among those horses during round-ups, causes a chain reaction of chemical imbalances. Bruce Nock discussed the importance of recognizing that, akin to humans, animals and, specifically, wild horses share similar reactions to raised cortisol levels and stress. Of significance to the wild horse population's longevity incudes the success of procreation and, as previously discussed,[12] the population's genetic value. As Nock underscored, the chemical changes that wild horses endure during gathers resulted in miscarriages and "epigenetic modifications – things we do to today's generation of horses may affect future generations as well." (Nock, 2010, p. 8). Specific to gene activity and modification, the spike and imbalance in cortisol levels "alters the activity of certain genes within the cell" which can be detrimental to a horse's survival. For instance, the hoof wall of wild horses develops throughout their lifetime and when cortisol levels are imbalanced and "enters an epidermal cell it turns off the process of keratinization [the process of what makes the hoof wall sturdy] and the integrity of the hoof is compromised." (Nock, 2010, p. 14).

Given the several factors threatening the continued existence of wild horses and the Pryor Mountain Mustang DPS, it is imperative that FWS list the DPS under the ESA.

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[12] *See Supra* pp. 11-12.

REQUESTED DESIGNATION

Friends of Animals respectfully requests that the U.S. Fish and Wildlife Service list the Pryor Mountain Mustang as a threatened or endangered distinct population segment under the ESA. The Pryor Mountain Mustang DPS is both distinct from and significant to the rest of the species, because: (1) it carries strong genetic linkages to the Old Spanish lineage, and (2) it represents the best opportunity to preserve this lineage due to the size and historic significance of the PMWHR, its lack of competing land uses, and its isolation from other HMAs and horses that do not carry this lineage. This listing action is warranted because current laws are inadequate to protect the Pryor Mountain Mustangs and wild horses throughout the country, and they are being managed in small fragmented groups that could cause them to go extinct in the foreseeable future. The Pryor Mountain Mustangs are threatened by at least three of the factors that require FWS to list a species as endangered under the ESA: (1) the present or threatened destruction, modification, or curtailment of habitat or range; (2) the inadequacy of existing regulatory mechanisms; and (3) other natural or man-made factors affecting continued existence, including excessive management and removal, and small fragmented populations.

As such, Friends of Animals requests the expeditious listing of the Pryor Mountain Mustang Distinct Population Segment of wild horses as threatened or endangered under the ESA. Listing this DPS would protect the distinct population segment from extinction by prohibiting unauthorized takes and the sale and transport of the animals to slaughterhouses overseas, as well as provide a critical habitat necessary for the survival of America's last wild mustangs.

Respectfully submitted,

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(All citations to Journal and News Articles are provided electronically as pdf- files with this petition.)

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