THE AMERICAN WEST'S GREATEST RELIC AND PARASITE: THE IMPACTS OF WILD HORSE AND BURRO MANAGEMENT ON FEDERAL RANGELANDS

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I. INTRODUCTION

The United States has a long and complicated history with wild horses and burros. Since the country's founding, these animals have been renowned as a living symbol, recognized as a member of an ecosystem, and all together renounced as a nuisance and a parasite. The controversial nature of this topic has been the foundation for numerous government programs. All of which pursue a single, overarching goal—striking a balance between herd management and herd protection.[1] Management occupies one side of the scale because herd overpopulation poses a substantial threat to the delicate rangeland ecosystem in the Western United States and places a significant burden on American farmers and

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1. *See Wild Horse and Burro Program*, BUREAU OF LAND MGMT. (Feb. 10, 2021, 9:30 AM), https://www.blm.gov/programs/wild-horse-and-burro [https://perma.cc/Y5YM-Q8XE].

ranchers.[2] On the other side of the scale is herd protection because destruction of these herds carries great animal welfare concerns and embodies a disregard for the animals' history and symbolic meaning.[3]

After a careful analysis of the current Wild Horse and Burro Management Program administered by the Bureau of Land Management (BLM), it is evident the program is unsustainable and is not solving overpopulation and overgrazing issues on federally owned rangelands. This is causing serious environmental consequences. Furthermore, the program is not providing a solution to maximize animal welfare.[4] These economic, emotional, and environmental costs will continue to worsen if the program does not undergo significant changes.

II. HISTORY OF THE PROGRAM

In 1971, Congress declared wild free-roaming horses and burros as "living symbols of the historic and pioneer spirit of the West."[5] The animals were said to "enrich the lives of the American people" by existing as "an integral part of the natural system of the public lands."[6] However, this recognition of the wild horse's significance consequentially posed a threat to the same "natural system."[7] This threat comes from overpopulation.[8] With "virtually no natural predators," wild horse and burro herds are growing at an exponential rate—doubling every four years.[9] Because wild horses and burros were domesticated before being reintroduced to North America several hundred thousand years after the origin of the species, it is highly debated whether they are considered native to the United States or non-native/feral.[10]

2. *See Wild Horse and Burro Management*, USDI: AM. FARM BUREAU FED'N (Feb. 10, 2021, 9:30 AM https://www.fb.org/issues/other/wild-horse-and-burro-management/ [https://perma.cc/6YE9-7H2J].

3. *See* 16 U.S.C. § 1331 (2020).

4. *See, e.g.*, The Associated Press, *Nevada: Federal Inquiry Is Sought After Starving Horses Are Euthanized*, N.Y. TIMES (Sept. 9, 2015), https://www.nytimes.com/2015/09/10/us/nevada-federal-inquiry-is-sought-after-starving-horses-are-euthanized.html?module=inline [https://perma.cc/3MRR-V4UB].

5. 16 U.S.C. § 1331 (2021).

6. *Id.*

7. *Id.*; *see Wild Horse and Burro Management*, *supra* note 2.

8. Steve Ellis, *Wild Horses and Burros: Challenges and Potential Solutions for BLM's Wild Horse and Burro Program*, USDI (June 22, 2016), https://www.doi.gov/ocl/wild-horses-and-burros [https://perma.cc/4RFA-5KQY].

9. *Id.*

10. Jay F. Kirkpatrick & Patricia M. Fazio, *Wild Horses as Native North American Wildlife*, ANIMAL WELFARE INST. (Jan. 2010), https://awionline.org/content/wild-horses-native-north-american-wildlife [https://perma.cc/FTD4-7PTA].

A less debated issue is population numbers are exceeding what is deemed appropriate and depleting the natural resources of the land at an alarming rate.[11] These resources include forage, water, and wildlife.[12] In addition to the environmental concerns, overpopulation threatens the welfare of the animals themselves—making them more susceptible to disease and starvation.[13] Throughout the history of the United States it has become clear population management is essential to protect the health of the animals and public rangelands. However, because the government has recognized wild horses and burros as sacred, it has placed a roadblock on management efforts.[14]

As of March 1, 2019, the BLM estimates there are around 88,090 wild horses and burros roaming designated Herd Management Areas (HMA).[15] This is over three times what has been deemed appropriate,[16] and population numbers are only increasing.[17] These HMAs were authorized by the Wild Free Roaming Horse and Burro Act of 1971.[18] There are 177 HMAs that exist in 13 Western states today—Arizona, California, Colorado, Idaho, Montana, North Dakota, South Dakota, Nevada, New Mexico, Oregon, Washington, Utah, and Wyoming.[19] The Act grants jurisdiction over them to the Secretary of the Interior.[20] It requires population numbers to be monitored and research conducted to determine what the Appropriate Management Levels (AML) are for each HMA.[21] The AML is the total number of wild horses and burros the land can reasonably sustain.[22] Then, the BLM is directed to humanely capture and remove all wild horses and burros that exceed the AML.[23] With the current population being as high as it is, it is evident the management programs put in place are falling short.

11. Ellis, *supra* note 8.
12. *Id.*
13. *Id.*
14. *See id.*
15. HERD AREA AND HERD MANAGEMENT AREA STATISTICS, BUREAU OF LAND MGMT. (Mar. 1, 2019), https://www.blm.gov/sites/blm.gov/files/2019_Final_HAHMA_Stats_05022019_final_508.pdf [https://perma.cc/A36E-726P].
16. *Id.*
17. *See* Ellis, *supra* note 8.
18. 16 U.S.C. § 1333 (2020).
19. HERD AREA AND HERD MANAGEMENT AREA STATISTICS, *supra* note 15.
20. 16 U.S.C. § 1333 (2020).
21. *Id.*
22. HERD AREA AND HERD MANAGEMENT AREA STATISTICS, *supra* note 15.
23. 16 U.S.C. § 1333 (2020).

Although by today's standards these population numbers are considered high, at the beginning of the 20th century there were an estimated two million wild horses and burros in the United States.[24] During the nation's rapid westward expansion, these numbers drastically decreased as available habitat shrunk.[25] With no legal ramifications, newly settled ranchers shot wild horses who competed with their livestock for grazing land.[26] In efforts to decrease population, large numbers of horses and burros were rounded up and sold for slaughter.[27] Herd management was up to the individuals who occupied the land until the Taylor Grazing Act established the United States Grazing Service in 1934.[28] The goal of this legislation was to curb improper use of federal rangelands.[29] Accordingly, the government incentivized controlling of wild horse and burro populations to allow for adequate agricultural use of federal rangelands.[30] Herd populations diminished even further after World War II when roundups increased to meet the demand for pet food.[31]

In the 1950s, with wild horse and burro populations at an all-time low, the American public became alarmed by these management practices.[32] In response to advocates' lobbying efforts, Congress passed the Wild Horse Annie Act that prohibited the hunting of wild horses as well as many roundup practices.[33] A true management program was not established, however, until 1971 when Congress passed the Wild Free-Roaming Horses and Burros Act.[34] This legislation required "the protection, management, *and* control" of the animals, thus creating the

24. U.S. GEN. ACCT. OFF., RANGELAND MANAGEMENT: IMPROVEMENTS NEEDED IN FEDERAL WILD HORSE PROGRAM 8 (Aug. 1990), https://www.gao.gov/assets/150/149472.pdf [https://perma.cc/DE7L-SJBE].

25. *Id.*

26. *Id.*

27. *Id.*

28. Harold Sherrets, *Impact of Wild Horses on Rangeland Management*, *in* THE TAYLOR GRAZING ACT: 50 YEARS OF PROGRESS 40 (1984) (ebook).

29. *Id.*

30. *See* Laurence A. Clement Jr., *Taylor Grazing Act*, ENCYCLOPEDIA OF THE GREAT PLAINS (2011), http://plainshumanities.unl.edu/encyclopedia/doc/egp.ag.071 [https://perma.cc/F6KQ-ZYEP].

31. Sherrets, *supra* note 28, at 40.

32. U.S. GEN. ACCT. OFF., *supra* note 24, at 8.

33. Sherrets, *supra* note 28, at 40.

34. *Program History*, USDI: BUREAU OF LAND MGMT. (Feb. 10, 2021, 9:33 AM), https://www.blm.gov/programs/wild-horse-and-burro/about-the-program/program-history [https://perma.cc/PNY8-RYSJ].

government's duty to balance preservation and population control.[35] As a result, today's management programs were born.

III. CONSEQUENCES OF HERD OVERPOPULATION

Before expanding the programs in place, it is essential to understand the consequences of these programs failing to meet their goals. There are three primary concerns centered around wild horse overpopulation: (1) environmental impacts, (2) land productivity, and (3) animal welfare.[36] Overgrazing has led to soil erosion and the destruction of many species' natural habitats.[37] Furthermore, livestock being raised for human consumption is in direct competition for grazing space.[38] Ranchers in the Western United States depend on the health of public lands for their livelihood, and wild horses and burros have crippled their ability to raise livestock.[39] Finally, if population numbers continue to increase as they are projected to, wild horses and other wildlife who share the range will inevitably suffer from starvation.[40] These consequences are inescapable if the management programs do not undergo significant change.

A. Environmental Impacts of Overpopulation

When federal lands are grazed sustainably, there are numerous positive environmental effects, including increased water quality and healthy water

35. OFF. OF INSPECTOR GEN., BUREAU OF LAND MANAGEMENT WILD HORSE AND BURRO PROGRAM 2 (2010), https://www.doioig.gov/sites/doioig.gov/files/C-IS-BLM-0018-2010.pdf [https://perma.cc/EK5W-UTYM] (emphasis added).

36. *See generally* Ben Masters, *Wild Horses: The Consequences of Doing Nothing*, NAT'L GEOGRAPHIC (Feb. 7, 2017), https://www.nationalgeographic.com/adventure/features/environment/wild-horses-part-two/ [https://perma.cc/UA6J-DZ7K] [hereinafter *Wild Horses: The Consequences of Doing Nothing*].

37. Ben Masters, *Can Fertility Control Keep Wild Horse Herds in Check?*, NAT'L GEOGRAPHIC (Feb. 8, 2017), https://www.nationalgeographic.com/adventure/features/environment/wild-horses-part-three/ [https://perma.cc/GBZ4-62QE] [hereinafter *Can Fertility Control Keep Wild Horse Herds in Check?*].

38. *See* Erik Molvar, *Livestock industry's campaign to get rid of wild horses is a scam to cheat the taxpayers*, WILDLIFE NEWS (Dec. 4, 2020), http://www.thewildlifenews.com/2020/12/04/livestock-industrys-campaign-to-get-rid-of-wild-horses-is-a-scam-to-cheat-the-taxpayers/ [https://perma.cc/WMT5-T8FF].

39. *Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.

40. *Id.*

flowage, carbon sequestration, and genetic diversity of plants and wildlife.[41] However, when grazing lands are improperly managed overgrazing occurs. There are three components to grazing: (1) the time of year grazing occurs; (2) how long the land is grazed; and (3) the number of animals grazing on the land.[42] Each of these components can be managed in different ways. Although wild horses and burros are not the only animals who compete for forage, they make a sizable contribution to the overgrazing problem.[43] Additionally, wild horses and burros should be a primary focus when analyzing this problem because, not only is the government *able* to do something about overpopulation, it is also *required* to.[44] Since management programs have failed to control herd populations, all three grazing elements are being exploited at unsustainable rates.[45] Large herds are grazing the land year-round, every day.[46]

With virtually no recovery time between grazing, native forage is unable to grow back, and invasive species have taken over.[47] One of the most prominent of these is *Bromus tectorum*, commonly known as cheatgrass.[48] In the early 1900s, cheatgrass was almost non-existent in the Western United States.[49] Today, it is one of the most prominent sources of forage in the geographical area.[50] As scientists study the spread of this invasive species, feral horses and burros are closely monitored to determine their impact on its spread.[51] In one study, fecal samples from an HMA in Colorado were collected and tested.[52] The samples showed that not only did cheatgrass make up a notable portion of the horses' diet, but viable

41. *Grazing Lands*, USDA: NAT. RES. CONSERVATION SERV. (March 15, 2021, 8:55 AM), https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/rca/?cid=nrcs143_014209 [https://perma.cc/3QQU-Q4AU].

42. *Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.

43. *Id.*

44. *See* Wild Horses and Burros Act, 16 U.S.C. § 1333 (2018).

45. *Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.

46. *Id.*

47. *Id.*

48. *See generally* JAMES A. YOUNG & FROSTY TIPTON, INVASION OF CHEATGRASS INTO ARID ENVIRONMENTS OF THE LAHONTAN BASIN (1989), https://www.fs.fed.us/rm/pubs_int/int_gtr276/int_gtr276_037_040.pdf [https://perma.cc/BJR3-RBP8].

49. *Id.* at 1.

50. *See id.*

51. *See, e.g.*, Sarah R.B. King et al., *Potential Spread of Cheatgrass and Other Invasive Species by Feral Horses in Western Colorado*, 72 Rangeland Ecology & Mgmt. 706, 706 (2019).

52. *Id.* at 707.

cheatgrass seeds were being distributed through their feces.[53] Because of this, the study concluded feral horses and burros likely contribute to the rapid spread of cheatgrass in Western rangelands, thus controlling herd populations is essential to managing this spread.[54]

Cheatgrass is an environmental issue for many reasons. First, because it is an annual plant, it dies each year during a time in which the land is particularly susceptible to wildfires.[55] Dried cheatgrass provides fuel for wildfires and lengthens the wildfire season.[56] Cheatgrass is well adapted to these wildfire cycles.[57] Conversely, most native plant species are not, which allows cheatgrass to dominate the landscape after a wildfire.[58] Additionally, because cheatgrass is a shallow-rooted plant, its invasion poses a substantial threat to soil health.[59] It absorbs the majority of the water and nutrients—taking away from the deeper-rooted plants and causing them to die.[60] As a result, soil erodes at a faster rate, and nutrients from deep in the soil are not properly utilized.[61] Finally, wildlife cannot be sustained by cheatgrass as the primary forage on Western rangelands.[62] Cheatgrass does not provide an adequate habitat for smaller animals and is low in nutrients—only providing nutritious forage during a small portion of the year.[63] The overpopulation of wild horses and burros opens the door for invasive species, such as cheatgrass, to overrun public land.[64]

In culmination with this increased prevalence of invasive species, overpopulation puts the arid and semi-arid rangelands in the Western United States at high risk for desertification.[65] Desertification occurs when land is overgrazed

53. *Id.*

54. *Id.* at 709.

55. Mike Pellant, *Why is Cheatgrass Bad?*, SAGE GROUSE INITIATIVE (Jan. 30, 2018), https://www.sagegrouseinitiative.com/why-is-cheatgrass-bad/ [https://perma.cc/W9NH-NLE6].

56. *Id.*

57. *Id.*

58. *Id.*

59. *See id.*

60. *Id.*

61. *Id.*

62. *Id.*

63. *Id.*

64. *See* King et al., *supra* note 51, at 709.

65. *See* H. E. DREGNE, CTR. FOR INT'L EARTH SCI. INFO. NETWORK, DESERTIFICATION OF ARID LANDS (1986), http://www.ciesin.org/docs/002-193/002-193.html [https://perma.cc/LA7C-KL6Z].

and soil becomes compacted.[66] As the soil becomes exposed to the elements, it dries out and the nature of the landscape changes.[67] The lack of water available causes the ecosystem to deteriorate, and once thriving plant and animal species can no longer succeed in the new environment.[68] Shallow-rooted plants replace the old forage, which are simultaneously less nutritious and less palatable.[69] Today, "[n]early 90 percent of North American arid lands are moderately and severely desertified."[70] This has led to substantial wind and water erosion issues.[71] The decreased number of plants the land can sustain coupled with the higher percentage of shallow-rooted plants makes it easy for the top soil to blow away.[72] This is how desertified rangeland becomes susceptible to wind erosion.[73] The topsoil is also vulnerable when it rains.[74]

Healthy soil is crucial to a healthy ecosystem, but overgrazing continues to play a role in soil destruction.[75] Further, government programs remain inadequate in controlling these threats of soil erosion and desertification.[76] The programs are falling short for several reasons. Primarily it is "the emphasis on short-term versus long-term benefits, [the] inability to finance improvements, [the] lack of clear-cut proof that control is profitable in the immediate future, and the absence of a public sense of urgency toward controlling land degradation . . . ."[77] These substantial roadblocks have led to a complacency that is threatening everyone's ability to use public rangelands in the future—wildlife, livestock, humans, and wild horses alike.[78] A primary example of the consequences of failing to prioritize soil health is the Dust Bowl of the early 1930s.[79] Overplowing and overgrazing of the Great

66. *Improved Management Actions are Needed to Protect the Rangeland Ecosystem*, NAT'L HORSE & BURRO RANGELAND MGMT. COAL. (Feb. 10, 2021, 9:37 AM), http://www.wildhorserange.org/rangeland-ecosystem.html [https://perma.cc/8UJG-W7EV].

67. DREGNE, *supra* note 65.

68. *Improved Management Actions are Needed to Protect the Rangeland Ecosystem*, *supra* note 66.

69. DREGNE, *supra* note 65.

70. *Id.*

71. *See id.*

72. *See id.*

73. *See id.*

74. *See id.*

75. *See Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.

76. DREGNE, *supra* note 65.

77. *Id.*

78. *See id.*

79. Dave Roos, *How Desertification Works*, HOWSTUFFWORKS (Dec. 30, 2008), https://science.howstuffworks.com/environmental/conservation/issues/desertification.htm/printable [https://perma.cc/79J6-GVGQ].

Plains caused massive dust storms and destroyed the usefulness of the nation's most valuable agricultural land.[80] This is the type of emergency situation that creates the "public sense of urgency" needed to produce action.[81] Luckily, desertification is reversible, and these dire consequences can be avoided.[82] However, to do so, the government must prioritize a sustainable rangeland ecosystem.[83]

B. Livestock Production and Overgrazing

Wild horses and burros are not the only ones taking the blame for overgrazing and the destruction it is causing. American farmers and ranchers have received substantial criticism for their use of public lands to graze livestock.[84] There are three primary categories of herbivores in competition for the grazing resources on public land.[85] They are domesticated livestock, wild big game animals (like elk and deer), and feral horses and burros.[86] Of these categories, the government has the most control over where, when, and how livestock graze on federal land.[87] This makes it easy for the public to blame the industry for the destruction of public rangelands. In order to use government-owned land for grazing their animals, livestock owners pay a federal per-head grazing fee.[88] Ranchers can also apply for grazing permits.[89] Federal livestock grazing programs have been criticized for subsidizing farmers through low fees while simultaneously having detrimental indirect costs.[90] These costs include the immense consequences

80. *Id.*

81. *See generally* DREGNE, *supra* note 65.

82. Roos, *supra* note 79.

83. *Id.*

84. *See* Karlin Brulliard, *The battle over wild horses*, WASH. POST (Sept. 18, 2019), https://www.washingtonpost.com/science/2019/09/18/wild-horses-have-long-kicked-up-controversy-now-foes-say-they-have-solution/?arc404=true [https://perma.cc/WS7A-C35Q].

85. *Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.

86. *Id.*

87. *Id.*

88. *Livestock Grazing on Public Lands*, USDI: BUREAU OF LAND MGMT. (Feb. 10, 2021, 9:38 AM), https://www.blm.gov/programs/natural-resources/rangelands-and-grazing/livestock-grazing [https://perma.cc/PBF8-FC4Q].

89. *Id.*

90. *See, e.g.*, Vickery Eckhoff, *The Real Price and Consequences of Livestock Grazing on America's Public Lands*, W. WATERSHEDS PROJECT (Feb. 12, 2015), https://www.westernwatersheds.org/sustainable-cowboys-welfare-ranchers-american-west/ [https://perma.cc/NS89-A69Z].

of overgrazing.[91] Although the livestock industry is not the only contributor to the environmental concerns in the Western United States, it takes much of the heat.[92]

After the first drought wave leading to the Dust Bowl in 1934, the Taylor Grazing Act was established—highlighting the importance of good rangeland management.[93] The Act allowed for federal government oversight of public land use by creating grazing districts in the Western United States.[94] Grazing permits were used to regulate when, how often, and how many livestock were allowed to graze each designated area.[95] Jurisdiction was granted to Grazing Advisory Boards and the Department of the Interior to oversee the regulatory process.[96]

Before this, ranchers were grazing their cattle and sheep on public lands for free, and land designation was based solely on custom and tradition.[97] Not only did this lead to exploitative use of the land as a public good, but it also caused numerous, sometimes violent, conflicts among ranchers.[98] After the Taylor Grazing Act, farmers and ranchers were no longer able to claim public land for agricultural purposes.[99] Rather, they had to go through the federal government.[100] The program received harsh criticism from environmentalists, however, due to the power it placed in the grazing advisory boards to determine adequate numbers of livestock subsisting on the land.[101] The boards' authority was viewed as problematic because the boards were primarily made up of prominent voices in the livestock industry.[102] Many argue the advisory board prevented the Taylor Grazing Act from improving overgrazing issues as much as intended.[103] Later, the BLM obtained jurisdiction over livestock grazing on public lands under the Federal Land Policy and Management Act (FLPMA).[104] This law, enacted in 1976, instructed

91. *See* CHRISTINE GLASER ET AL., COSTS AND CONSEQUENCES: THE REAL PRICE OF LIVESTOCK GRAZING ON AMERICA'S PUBLIC LANDS 1 (2015).

92. *See* Eckhoff, *supra* note 90.

93. Clement Jr., *supra* note 30.

94. *Id.*

95. *Id.*

96. *Id.*

97. Russel L. Tanner, *Leasing the Public Range: The Taylor Grazing Act and the BLM*, WYOHISTORY.ORG (Aug. 30, 2015), https://www.wyohistory.org/encyclopedia/leasing-public-range-taylor-grazing-act-and-blm [https://perma.cc/9WP2-WBLA].

98. *Id.*

99. *Id.*

100. *Id.*

101. *Id.*

102. *Id.*

103. *See generally* Clement Jr., *supra* note 30.

104. Tanner, *supra* note 97.

"professionally educated and trained federal range conservationists" to determine appropriate herd size and placement while still allowing individuals from the livestock industry to be heard on grazing advisory boards.[105] Today, livestock's grazing of public lands is closely regulated by both the BLM and the United States Forest Service.[106] It is also important to recognize livestock production serves a significant public interest.[107] Using public lands to feed the nation's livestock is a productive and economically efficient practice, especially since federal rangelands are not arable and the forage that grows is not useful to humans.[108] Production animals (like cattle and sheep) convert this forage into high quality protein for human consumption.[109] This resourceful use of the land is why providing for livestock forage is listed as one of the United States Forest Service's objectives along with "contribut[ing] to the economic and social well being of people . . . by promoting stability for communities that depend[] on range resources for their livelihood."[110] The success of American ranchers has a profound effect on the economy as a whole,[111] and their success depends on access to healthy public rangelands.[112] Thus, productively using the natural resource without exploiting it remains the goal for ranchers and the federal government today.

Because public rangelands are such an essential resource for American ranchers, and because they must compete for this resource with big game, feral horses, and burros, tension has risen among these interest groups.[113] Working ranches in the Western United States have both a historical and economic

105. *Id.*

106. *Administrative Overview: What is Public Lands Grazing?*, GLOBAL RANGELANDS (Feb. 15, 2021, 3:18 PM), https://globalrangelands.org/topics/uses-range-and-pasture-lands/administrative-overview-what-public-lands-grazing [https://perma.cc/7XLD-2GVP].

107. *Why does the Forest Service permit livestock grazing on National Forest System lands?*, U.S. FOREST SERV. (Feb. 15, 2021, 3:28 PM), https://www.fs.fed.us/rangeland-management/grazing/allowgrazing.shtml [https://perma.cc/7DGQ-MCD6].

108. *See Uses of Range and Pasture Lands*, GLOBAL RANGELANDS (Feb. 10, 2021, 9:41 AM), https://globalrangelands.org/topics/uses-of-range-and-pasture-lands [https://perma.cc/2MGN-Y223].

109. *Id.*

110. *Why Does the Forest Service Permit Livestock Grazing on National Forest System Lands?*, *supra* note 107.

111. *(Infographic) The Beef Industry's Major Contribution to the U.S. Economy*, AGAMERICA LENDING (May 31, 2019), https://agamerica.com/beef-cattle-industry-highlights-infographic/ [https://perma.cc/8W6Y-3PNU].

112. *See* Brulliard, *supra* note 84.

113. *Id.*

significance that is threatened by the growing wild horse population.[114] To keep their operation profitable and productive, a large number of ranchers rely on their ability to use public lands to graze their livestock.[115] If wild horse and burro herds push these ranchers out or cause the government to tighten the regulation on livestock grazing, these operations will likely fall victim.[116] Because of this substantial threat to their livelihood, livestock owners have pushed back on the BLM's Wild Horse and Burro Management practices.[117] In 2014, 13 Utah ranchers sued the BLM demanding action be taken to lower the number of wild horses and burros on public rangelands.[118] A federal district court judge dismissed the suit, stating the BLM had vast discretion in determining when and how many horses they round up each year.[119] As the fight for public lands continues, it is evident the BLM's failure to properly manage wild horse and burro populations will continue to have a substantial, negative impact on American ranchers.

C. Animal Welfare and Overpopulation

In addition to environmental and economic concerns, allowing the wild horse and burro population to continue its alarming growth poses a significant threat to their own welfare. Herd numbers already are three times what the land is capable of sustaining.[120] With increasing numbers of animals and decreasing quality and quantity of rangeland forage, feral horse and burro herds face serious threats of starvation, along with every other wild animal that depends on the rangeland.[121] In 2015, the BLM conducted an emergency wild horse roundup in southern Nevada where 201 horses were gathered.[122] These horses likely traveled over 10 miles to find food and water, and what food they did find had little-to-no nutritional

114. *See* Ed Arnett, *Why Public Land Grazing is So Important to the American West*, THEODORE ROOSEVELT CONSERVATION P'SHIP (June 5, 2019), http://www.trcp.org/2019/06/05/public-land-grazing-important-american-west/ [https://perma.cc/PD5P-EPGR].

115. *Id.*

116. *See id.*

117. *See, e.g.*, Brian Maffly, *Judge rejects Utah ranchers' plea to evict wild horses*, SALT LAKE TRIB. (July 14, 2017), https://www.sltrib.com/news/environment/2017/07/14/judge-rejects-utah-ranchers-plea-to-evict-wild-horses/ [https://perma.cc/3KYL-XH7C].

118. Kristen Moulton, *Utah ranchers sue BLM, demand removal of wild horses*, SALT LAKE TRIB. (May 1, 2014), https://archive.sltrib.com/story.php?ref=/ sltrib/news/57890048-78/wild-horses-blm-utah.html.csp [https://perma.cc/39U7-JL2G].

119. Maffly, *supra* note 117.

120. HERD AREA AND HERD MANAGEMENT AREA STATISTICS, *supra* note 15.

121. *Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.

122. The Associated Press, *supra* note 4.

value.[123] Due to their extremely emaciated condition, 28 of the horses had to be euthanized.[124] As population numbers increase, the rapid spread of disease also becomes an issue.[125] The herds' health is quickly deteriorating and will continue to worsen if these management programs do not improve.

In addition to threats of starvation and disease, overpopulation is causing the animals to migrate outside of their normal habitat.[126] This is dangerous, not only for the animals, but for the humans they encounter.[127] With food and water resources becoming more scarce, wild horses and burros have ventured beyond the herd management areas to find sustainable land.[128] As a result, they are traveling onto highways and private property.[129] The state of Nevada reported 400 vehicle-horse collisions from 2006 to 2018, and in Phoenix, Arizona, an average of 200 vehicle accidents per year are caused by wild burros.[130] These types of accidents have killed hundreds of wild horses and burros and pose a substantial threat to human safety. For example, in 2006, a 21-year-old woman was killed when her boyfriend's car struck a wild burro.[131] In another example, a Nevada man died after being ejected from his vehicle while trying to avoid a feral horse in the road in 2017.[132] If nothing is done to manage overpopulation, accidents like these will continue to cause injury and death to both horses and humans.

Overpopulation of wild horse and burro herds has considerable ramifications on the public rangeland ecosystem, the livestock production industry, and the welfare of the animals themselves.[133] This is why proper herd management by the

123. *Id.*

124. *Id.*

125. *See* Malinda Larkin, *Exploding population of wild horses, burros strains BLM*, AM. VETERINARY MED. ASS'N (Sept. 5, 2018), https://www.avma.org/News/JAVMANews/Pages/180915o.aspx [https://perma.cc/Z4LN-NTFM].

126. *Id.*

127. *See id.*

128. *Id.*

129. *Id.*

130. *Id.*

131. *Saroeutrh Kayla Phim (21) was killed when her boyfriend's car struck a Burro crossing the road*, MYDEATHSPACE.COM (Oct. 25, 2006), http://mydeathspace.com/article/2006/10/25/Saroeutrh_Kayla_Phim_(21)_was_killed_when_her_boyfriend_s_car_struck_a_Burro_crossing_the_road [https://perma.cc/5U5C-RHLB].

132. Jeff Munson, *Carson City man dies in Highway 50 crash involving horse east of Silver Springs*, CARSONNOW.ORG (Oct. 4, 2017, 1:50 PM), https://carsonnow.org/story/10/04/2017/carson-city-man-dies-highway-50-crash-involving-horse-east-silver-springs [https://perma.cc/C4CD-ZX4F].

133. *See* Ben Masters, *The Future of America's Wild Horses: The Options*, NAT'L GEOGRAPHIC (Feb. 10, 2017),

federal government is so critical. Today, the BLM's Wild Horse and Burro Management Program is comprised of numerous moving parts and each part works toward achieving a desired balance between management and preservation.[134] However, the program is falling short in many ways, and if the program continues to run as it is, the health of the rangeland and the herds that occupy it will be compromised.[135]

IV. THE PROGRAM TODAY

The BLM's goal for the program is to support "healthy wild horses and burros on healthy public rangelands."[136] Herd health is directly tied to sustainable population size, so this goal is primarily accomplished through limiting reproduction and removing excess animals from federal lands.[137] The BLM limits reproduction by administering an intermuscular Porcine Zona Pelucida vaccine to wild mares.[138] The excess horses and burros on the land are rounded up using helicopters and are kept in government holding facilities.[139] The program then strives to find trainers and adopt the animals out.[140] The final way the BLM manages herd populations is by entering into grazing contracts with private landowners.[141] These three primary methods of population management provide ethical solutions to the overpopulation problem. However, each come with significant limitations, which is why the current program has not solved the problem entirely.[142]

https://www.nationalgeographic.com/adventure/features/environment/wild-horse-management-options/ [https://perma.cc/UG8U-8T3Q] [hereinafter *The Future of America's Wild Horses: The Options*].

134. *Wild Horse and Burro Program*, *supra* note 1.

135. *See The Future of America's Wild Horses: The Options*, *supra* note 133.

136. *Wild Horse and Burro Program*, *supra* note 1.

137. *Id.*

138. *Can Fertility Control Keep Wild Horse Herds in Check?*, *supra* note 37.

139. *Wild Horse and Burro Gathers and Removals*, USDI: BUREAU OF LAND MGMT. (Feb. 15, 2021, 8:48 AM), https://www.blm.gov/programs/wild-horse-and-burro/herd-management/gathers-and-removals [https://perma.cc/T44X-X5XH].

140. *Adoption and Sales*, USDI: BUREAU OF LAND MGMT. (Feb. 15, 2021, 9:49 AM), https://www.blm.gov/programs/wild-horse-and-burro/adoption-and-sales [https://perma.cc/L3NU-5LCX].

141. *See, e.g.*, *BLM Seeks Bids for New Off-Range Pastures for Wild Horses and Burros*, USDI: BUREAU OF LAND MGMT. (Mar. 4, 2019), https://www.blm.gov/press-release/blm-seeks-bids-new-range-pastures-wild-horses-and-burros [https://perma.cc/AC7S-ZU3G].

142. *See The Future of America's Wild Horses: The Options*, *supra* note 133.

A. Limiting Reproduction

Currently, the BLM does not permanently castrate horses or burros.[143] Although the program gelds males who will remain in captivity indefinitely, the animals that will be returned to the wild are not sexually altered.[144] This is due to wild horse advocates' harsh criticism of castration practices, leading to large amounts of litigation.[145] Advocates argue the animals cannot survive in the wild without their sex organs and altering them leads to a severely deteriorated quality of life.[146] This is because castrated male horses mature differently than intact males—typically developing less muscle and exhibiting less dominant behaviors.[147] Court-ordered injunctions have prevented the BLM from even researching these practices further, and the amount of public pushback has steered the program towards a different method for sterilization.[148]

The BLM uses Porcine Zona Pellucida immunocontraception (PZP) as its primary way of temporarily sterilizing female wild horses and burros.[149] This method allows the animal to be shot with a dart from afar and, after a primer dose and a booster dose, renders her infertile for about a year.[150] PZP has been found to be the most humane fertility management technique, allowing mares to live in the wild without severe physical or behavioral limitations.[151] However, long term PZP treated mares have been reported to exhibit problematic social behaviors, like frequent switching of herds, which can lead to decreased physical health of all the

143. *Id.*

144. *See Gelding of Wild Horses and Burros*, USDI: BUREAU OF LAND MGMT. (Sept. 23, 2015), https://www.blm.gov/policy/im-2015-153 [https://perma.cc/L8UN-9XVX].

145. *See, e.g.*, Brian Maffly, *Can gelding ease the West's wild horse woes?*, SALT LAKE TRIB. (Aug. 3, 2017), https://www.sltrib.com/news/environment/2015/12/15/can-gelding-ease-the-wests-wild-horse-woes/ [https://perma.cc/CWM9-BU3S].

146. *Id.*

147. *Gelding…Does It Improve Behavior?*, RUGBY CREEK ANIMAL RESCUE (Nov. 27, 2018), https://rugbycreekanimalrescue.org/education-blog/f/geldingdoes-it-improve-behavior [https://perma.cc/6VNH-PXZT].

148. See, e.g., Daniella Silvia, *Judge blocks controversial plan to sterilize wild horses in Oregon*, NBC NEWS (Nov. 5, 2018, 4:35 PM), https://www.nbcnews.com/news/us-news/judge-blocks-controversial-plan-sterilize-wild-horses-oregon-n931681 [https://perma.cc/UN3R-X9DE].

149. *See* USDI: BUREAU OF LAND MGMT., MARE STERILIZATION RESEARCH 3 (2016), https://eplanning.blm.gov/public_projects/nepa/56292/67242/73184/MareSterilizationResearchEA_12172015.pdf [https://perma.cc/BU3H-MZ9W].

150. *Can Fertility Control Keep Wild Horse Herds in Check?*, *supra* note 37.

151. CASSANDRA M. V. NUÑEZ, CONSEQUENCES OF PORCINE ZONA PELLUCIDA IMMUNOCONTRACEPTION TO FERAL HORSES, 12(1) HUM.—WILDLIFE INTERACTIONS 131, 131 (2018).

animals in the herd.[152] The PZP method of sterilization has also come with significant limitations, as it requires extensive training and volunteer hours, meticulous record keeping, and considerable financial resources.[153] Because of this, fewer than 1% of the wild horse and burro population is treated with PZP annually.[154] Although PZP fertility control has proven to be sustainable long-term for small herds that are easily tracked and managed, it cannot be the program's only solution to the rising numbers of horses and burros on federal lands.[155]

B. Removing Excess Animals from Federal Lands

In addition to preventing future births, the BLM gathers and removes thousands of horses and burros from federal rangelands each year.[156] Roundups are typically conducted via helicopter where the animals are pushed into large corrals.[157] They are then kept in long-term government-owned holding facilities or are adopted out.[158] As of March 2021, there were 52,832 horses and burros living in off-range holding facilities.[159] Caring for these animals costs the BLM an average of $56 million per year—consuming roughly two-thirds of their annual budget.[160] If kept in a holding pen for its lifetime, a single horse or burro will cost the federal government $50,000.[161] Additionally, there are environmental costs in supplying the animals with food and water.[162] When irrigated hay is needed, as it often is in the Western United States, a single horse creates water usage of about 730,000 gallons per year.[163] These financial and environmental concerns make the

152. *Id.*

153. *The Future of America's Wild Horses: The Options*, *supra* note 133.

154. *Id.*

155. *Id.*

156. *Wild Horse and Burro Gathers and Removals*, *supra* note 139.

157. *See Can Fertility Control Keep Wild Horse Herds in Check?*, *supra* note 37.

158. *Off-Range Corrals*, USDI: BUREAU OF LAND MGMT. (Feb. 10, 2021, 9:52 AM), https://www.blm.gov/programs/wild-horse-and-burro/adoption-and-sales/adoption-centers [https://perma.cc/3W44-UUJC].

159. *Program Data*, USDI: BUREAU OF LAND MGMT. (Feb. 10, 2021, 9:52 AM), https://www.blm.gov/programs/wild-horse-and-burro/about-the-program/program-data [https://perma.cc/V672-XGCH].

160. *Id.*

161. Steve Tryon, *Wild Horses and Burros: Long-Term Management Options for the Bureau of Land Management's Wild Horses and Burros Program*, USDI (July 16, 2019), https://www.doi.gov/ocl/wild-horses-and-burros-0 [https://perma.cc/6M5R-QZT2].

162. Ben Masters, *Wild Horses, Wilder Controversy*, NAT'L GEOGRAPHIC (Feb. 6, 2017), https://www.nationalgeographic.com/adventure/features/environment/wild-horses-part-one/ [https://perma.cc/JA8P-MJLL].

163. *Id.*

growing numbers of horses and burros in long term holding facilities increasingly problematic.

Luckily, not all gathered horses and burros remain in holding facilities indefinitely. The BLM works to place adoptable animals with qualified owners.[164] To accomplish this, the agency partners with numerous organizations like the Mustang Heritage Foundation, the U.S. Border Patrol, and the Rio Cosumnes Correctional Center.[165] Because safe, handleable horses are more likely to be adopted than feral horses, these programs arrange for the animals to be gentled through training competitions, trainer incentives, and inmate training programs.[166] The BLM has facilitated more than 245,000 adoptions since the inception of the Wild Horse and Burro Management Program in 1971.[167] However, annual adoption numbers have been consistently decreasing.[168] With increasing numbers of untrained animals entering into an already saturated horse market, there are not enough qualified buyers to keep up with the constantly growing supply.[169] Moreover, there are tight regulations on who can buy the horses, and ownership title is not transferred to the private owner until one year after adoption.[170] This makes it nearly impossible for professional horse trainers to profitably train and sell BLM horses and burros.[171] Thus, although adoption provides an ethical solution to the problem, current adoption programs alone are not a sustainable solution to overpopulation.

Horses and burros that remain in the BLM's care are often moved from holding facilities to privately owned pastures.[172] The government contracts with landowners to provide off-range horses and burros with grazing and habitable space.[173] These private contracts offer a less expensive solution while offering the captured animals a slightly better quality of life.[174] The contracts cost the BLM an

164. *Adoption and Sales*, *supra* note 140.

165. *Partnerships*, USDI: BUREAU OF LAND MGMT. (Feb. 10, 2021, 9:52 AM), https://www.blm.gov/programs/wild-horse-and-burro/partnerships [https://perma.cc/7LMA-VLFA].

166. Tryon, *supra* note 161.

167. *Id.*

168. Ellis, *supra* note 8.

169. *Id.*

170. *The Future of America's Wild Horses: The Options*, *supra* note 133.

171. *Id.*

172. *See* USDI: BUREAU OF LAND MGMT., OFF-RANGE PASTURE FAQS 1 (Feb. 27, 2019), https://www.blm.gov/sites/blm.gov/files/wildhorse_OffRangePasturesFAQ_3.4.19.pdf [https://perma.cc/T7X6-ZQAE].

173. *See id.*

174. *See* Tryon, *supra* note 161.

average of two dollars per day per animal—compared to five dollars per animal in a holding facility.[175] Eligible pastures must be able to sustain a minimum of 200 horses and provide them with enough forage to maintain a healthy weight year round.[176] These off-range pastures currently provide long term holding for over 36,000 horses and burros.[177] However, there is not enough private land to reasonably expand the pastures to accommodate the additional 10,000 horses rounded up annually.[178]

The BLM's Wild Horse and Burro Management Program has attempted to manage overpopulation for almost 50 years.[179] And, although their efforts have had some success, the program as a whole is failing. The substantial limitations on reproduction control, the high cost of caring for the animals in captivity, and the shrinking demand for adoption have created sizeable roadblocks for the federal government. As a result, the BLM's management program falls short of its goals every year.[180]

V. SOLUTIONS

The present state of wild horse and burro herds in the United States demonstrates that the BLM's program is unsustainable in its current form. As a result, overpopulation is taking a detrimental toll on public rangelands.[181] The BLM, as directed by federal law, must take aggressive action to stop the exponential growth of wild horse herds. However, it is challenging to legally and effectively balance the numerous conflicting interests. There are two major changes to the program that, if implemented, would allow it to effectively manage future populations. The first is to allow the culling of excess animals to reduce population numbers to the BLM's set appropriate management levels.[182] The second is to increase funding and opportunities for fertility control research so herd reproduction can be successfully limited going forward.[183]

It is important to emphasize the Wild Horse and Burro Act explicitly grants permission to the Secretary of the Interior to destroy "additional excess wild free-roaming horses and burros for which an adoption demand by qualified individuals

175. *Id.*
176. *See Off-Range Pasture FAQs*, *supra* note 172.
177. *See* Tryon, *supra* note 161.
178. *See Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.
179. *See Wild Horse and Burro Program*, *supra* note 1.
180. *See Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.
181. *See id.*
182. *See id.*
183. *See* Tryon, *supra* note 161.

does not exist . . . in the most humane and cost efficient manner possible."[184] The BLM Wild Horse and Burro Advisory Board has voted to take action in the past and euthanize unadoptable horses in government holding pens.[185] However, these practices were never carried out due to push back from the public.[186] Wild horse advocates have a fierce opposition to culling these animals, arguing that euthanasia of otherwise healthy animals is cruel and unnecessary.[187] However, this has led to thousands of horses living in holding facilities well into their old age, costing the federal government millions while offering the animals a mediocre quality of life.[188] Further, the horses and burros that remain in the wild face starvation and dehydration as population numbers grow exponentially.[189] Overpopulation has reached a point where drastic measures must be taken before it can be controlled solely by limiting reproduction. In order to achieve manageable herd sizes where the animals no longer face the dire consequences of overpopulation, humane euthanasia of unadoptable horses and burros must be implemented.

Once these population numbers are achieved, it is essential that reproduction is effectively limited so numbers do not return to unmanageable levels. To accomplish this, funding must be increased for fertility control research.[190] The current methods in place to control reproduction in the wild are inefficient and resource intensive.[191] Improvement of fertility management is essential to creating a more sustainable program because it controls overpopulation at the source and limits concerns from wild horse advocates.[192] However, in order for the program to be improved, increased funding must be provided for research and development of better sterilization methods. Fortunately, if the excess animals in the government's care were culled, a large portion of the BLM's budget could be shifted from animal husbandry to research efforts.

Not only must resources be increased to facilitate research, but the BLM must be able to conduct research trials freely. The federal government has partnered with numerous universities in the past to develop and enhance its research program.[193] Nevertheless, with advocates' concerns for the wellbeing of

184. 16 U.S.C. § 1333(b)(2)(C) (2020).
185. *The Future of America's Wild Horses: The Options*, *supra* note 133.
186. *Id.*
187. *See Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.
188. *See The Future of America's Wild Horses: The Options*, *supra* note 133.
189. *Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.
190. *The Future of America's Wild Horses: The Options*, *supra* note 133.
191. *See* Ellis, *supra* note 8.
192. *The Future of America's Wild Horses: The Options*, *supra* note 133.
193. *See* Ellis, *supra* note 8.

animals used in research trials, court ordered injunctions have halted the research process.[194] The injunctions prohibit the use of wild horses and burros for trials so researchers are unable to further develop sustainable fertility control methods.[195] These roadblocks must be lifted in order to improve the welfare of wild horse herds as a whole and to prevent the need for culling in the future.[196] If funding for fertility control research was increased and research trials could be conducted without interference, fewer horses would be born in the wild each year.[197] This would also significantly decrease the number of animals the government would need to round up; if effective enough, fertility control could eliminate the need for government roundups altogether. This would decrease the BLM's animal husbandry costs and be the ideal scenario for wild horse and burro advocates.

If a culling plan is implemented and fertility control methods are improved, government holding facilities could become a thing of the past. The number of horses in the care of the federal government could decrease enough to equal the demand of qualified adopters. Thus, horses and burros would either remain in the wild or find loving homes. However, before this equilibrium can be reached, radical action must take place to decrease population numbers that are otherwise out of control. Although calling for such action is emotional and controversial, the current state of the Wild Horse and Burro Management Program is not benefitting the animals. These welfare concerns will worsen if big changes are not made soon.

VI. CONCLUSION

Wild horses have been a staple of the American West for hundreds of years. But, with almost 90,000 horses and burros roaming federal rangelands today, overpopulation has led to crippling consequences.[198] Soil has become vulnerable from overgrazing and is eroding at alarming rates—unable to sustain nutritious plant life.[199] Livestock ranchers are strained for access to healthy public rangeland and the industry is suffering as a result.[200] Wild horses and burros are dying of starvation and dehydration as population numbers exceed what the land can reasonably sustain.[201] If the current situation is not rectified, a high price will be

194. *See, e.g.*, Silvia, *supra* note 148.
195. *Id.*
196. *See id.*
197. *See id.*
198. *See* HERD AREA AND HERD MANAGEMENT AREA STATISTICS, *supra* note 15.
199. *See Wild Horses: The Consequences of Doing Nothing*, *supra* note 36.
200. *See id.*
201. *See, e.g.*, The Associated Press, *supra* note 4.

paid by environmental activists, wild horse interest groups, and livestock industry advocates alike.

This has placed the federal government in a "political, emotional, and environmental controversy,"[202] and a balance must be reached between population management and sufficient preservation of the animals and their symbolic meaning. Currently, the BLM's Wild Horse and Burro Management Program is not sustainably achieving this balance. As population numbers continue to grow exponentially, the program is failing to effectively limit reproduction. This inevitably leads to more animals in government holding pens every year, consequently requiring two-thirds of the BLM's budget to be allocated for their care rather than for reducing the wild population.[203] There are weaknesses in almost every aspect of the program that make it inherently flawed. Ultimately, the Wild Horse and Burro Program must undergo serious changes to meet the goals it was designed to achieve.

202. *The Future of America's Wild Horses: The Options*, *supra* note 133.

203. *Program Data*, *supra* note 159.