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DOI-BLM-CO-N050-2020-0056

Piceance-East Douglas Herd Management Area Gather and Fertility Control Plan

February 2021

Estimated Lead Agency Total Costs Associated with Developing and Producing the EA: $25,108

U.S Department of the Interior
Bureau of Land Management
Northwest District
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1. INTRODUCTION

Project Title: Piceance-East Douglas Herd Management Area Gather and Fertility Control Plan

Location: Within the boundaries of the Piceance-East Douglas Herd Management Area

Applicant: Bureau of Land Management, White River Field Office

NEPA Document Number: DOI-BLM-CO-N050-2020-0056-EA

1.1. Background

Since the passage of the Wild Free-Roaming Horses and Burros Act (WFRHBA) of 1971, the BLM has refined its understanding of how to manage wild horse population levels. By law, the BLM is required to control any overpopulation, by removing excess animals, once a determination has been made that excess animals are present, and removal is necessary. The 1997 White River Resource Management Plan wild horse program objective is to manage the Piceance-East Douglas Herd Management Area (PEDHMA) "so that a thriving ecological balance is maintained for all plant and animal species on that range" (page 2-26). The PEDHMA encompasses 190,130 total acres, of which 158,310 acres are managed by the BLM, 26,490 acres are private, and 5,330 acres are managed by the State of Colorado.

Current National Wild Horse and Burro Program goals have explicitly included conducting gathers and applying contraceptive treatments to achieve and maintain wild horse populations within the established Appropriate Management Level (AML) to manage for healthy wild horse populations and healthy rangelands. The use of fertility controls helps to reduce total wild horse population growth rates in the short term and increases the time between gathers and reduces the number of excess wild horses that must be removed from the range. Other management efforts include continuing population inventories, and continuing to collect genetic samples, for ongoing monitoring. Decreasing the numbers of excess wild horses on the range is consistent with findings and recommendations from the National Academy of Sciences (NAS), American Horse Protection Association (AHPA), the American Association of Equine Practitioners (AAEP), Government Accountability Office (GAO), Office of Inspector General (OIG) and current BLM policy. The BLM's management of wild horses must also be consistent with Standards and Guidelines for Rangeland Health.

1.1.1. Management History of the PEDHMA

A summary of how the BLM made decisions to manage wild horses in the PEDHMA can be found in *Wild Horse Management History and Current Conditions within the West Douglas Herd Area, January 2015* (with corrections dated April 2015 and September 2015), pages 1 through 22, and is incorporated by reference. In general, the North Piceance and West Douglas Herd Areas and the PEDHMA represent the locations wild horses were found at the passage of the WFRHBA. Through subsequent land use planning decisions, the BLM has decided to manage a wild horse herd only in the PEDHMA.

Additional summaries of the management history of the PEDHMA can also be found in sections 1.1 and 1.5 of the last environmental assessment (EA) that evaluated gather operations within the PEDHMA (DOI-BLM-CO-110-2011-0058-EA). DOI-BLM-CO-110-2011-0058-EA evaluated the PEDHMA Wild Horse Gather Plan, completed in July 2011, and included a detailed description in Chapter 3 – Affected Environment (Section 3.4.5 Wild Horses). The information presented therein on pages 53 through 66 is still representative of the affected environmental for wild horses within the PEDHMA. Based on the February 2016 wild horse aerial inventory, which documented a raw count of 337 wild horses located within the PEDHMA, the only substantive change is that since the last time BLM gathered and removed wild horses from the PEDHMA, the wild horse population has been allowed to increase at an approximate rate of 20 percent annually and is currently estimated at 838 or more (see Table 1).

Due to content germane to the present analysis, the WRFO incorporates by reference, the entire document DOI-BLM-CO-110-2011-0058-EA, the Piceance-East Douglas Herd Management Area Wild Horse Gather Plan, August 19, 2011, pages 1 through 161, and including the Appendices A through I. This document is available on this EA's ePlanning project site: https://eplanning.blm.gov/eplanning-ui/project/2003177/510

Minor changes within the PEDHMA that have taken place since the July 2011 analysis include a decrease in new energy development. Since 2011, most energy related activities within the PEDHMA consist of maintenance of the existing developments. Oil Shale development is no longer active except perhaps for some reclamation activities. The area continues to receive vehicle use required for maintenance of energy-related facilities, livestock operations, recreation uses, etc. Though updated fencing and fence construction and maintenance has been ongoing and more regularly performed, wild horses are still subject to vehicle/horse collisions on the associated state highways and county roads. While the wild horses have become accustomed to various activities taking place within the PEDHMA, elevated levels of human presence can alter wild horse behavior back to "escaping" situations when threats are perceived. Regarding fertility control treatments, there have been several updates to production formulations, adjuvants, etc. and advances in veterinary techniques but the overall methods and concept of fertility control treatments remain the same, insofar as the goal is to reduce population growth. Specific methods considered are analyzed in detail in this EA.

Since approximately 2015, some of the lands owned by energy companies (Shell Frontier Oil and Gas Inc.) have been sold to other private individuals and/or companies. A fence that was constructed around 2008 on private land belonging to Shell Frontier to resolve a dispute regarding leasing the land by the livestock grazing permittee as identified in the 2011 analysis partially divided the PEDHMA. Shell Frontier had allowed for openings in that fence to allow wild horses to pass back and forth. This fence remains but is not regularly maintained so animals can cross back and forth in several places.

In 1998, cooperative management agreement(s) with private landowner(s) in the Greasewood Allotment allowed for wild horses to use private land that contained dependable water resources. However, these agreements are no long in affect due to change in ranch ownership. Representatives of the new ranch owners have since submitted in written requests for BLM to gather and remove wild horses located on their private lands within the Greasewood Allotment (letters from August 2019 until August 2020).

Previous Gathers in PEDHMA

The WRFO has conducted wild horse gathers some 20 times over the past 40 years either within and/or outside of the PEDHMA, including during 1980, 1981, 1983, 1984, 1985, 1989, 1991, 1992, 1993, 1994, 1996, 1997, 1998, 1999, 2002, 2006, 2010, 2011, 2015, and 2017.

The BLM has previously conducted gathers of excess wild horses within the PEDHMA for the purpose of managing the population size within the established AML range. Excess wild horses removed from the PEDHMA have been transported to Off Range Corral (ORC) facilities, where they were prepared for adoption, sale (with limitations), Off Range Pasture (ORP), or other statutorily authorized disposition.

The most recent gather of excess wild horses from within the PEDHMA was conducted in 2011 using helicopter trapping techniques. The project objective was to gather all wild horses located within the PEDHMA and conduct a selective return of wild horses within the AML range. The WRFO gathered a total of 276 horses with the removal of 260 excess wild horses, 1 horse euthanized for a pre-existing condition, and 15 wild horses returned to the PEDHMA (nine stallions and six mares for the 60/40 male/female return of wild horses back into the PEDHMA) with no mares treated with fertility control vaccines. There were no wild horse deaths associated with the gather operation. The project objectives for the 2011 gather operation were only partially met. Due to the specific number of wild horses gathered, the WRFO only selected 15 wild horses to be returned to the PEDHMA. This removal was essentially a gate-cut type and sizeable selection of wild horses was made.

In 2006, the WRFO was able to partially conduct a selective removal which resulted in the treatment of 27 appropriately aged wild horse mares with PZP-22 pellet vaccine at the Yellow Creek Corrals before releasing them back into the PEDHMA. No follow up treatments (boosters) were able to be administered due to difficulty tracking the treated mares.

Other Management Factors

The PEDHMA is characterized by fencing along the entire boundary. The newest fencing included a two-mile long section placed in 2017 near Rio Blanco County Road 28 in the Cathedral Creek area (where there was no natural boundary), and another 1.5-mile segment placed in 2015 adjacent to Colorado State Highway 64. There are segments of fence that require maintenance and as a result, wild horses are able move back and forth across the PEDHMA boundary. Besides the new fence construction in 2015 and 2017, there is a recently completed fence project (November 2020) along Rio Blanco County Road 91 in the Duck Creek area where approximately one mile of new fencing is being constructed to retain wild horses within the PEDHMA boundary in that area.

Beginning in 2018, a volunteer group formed, called Piceance Mustangs, and they have signed a Memorandum of Understanding with the BLM. This group works with BLM on several projects located within the PEDHMA including removing old non-functional fencing, repairing boundary fence, and have been instrumental in several water projects for use by wild horses and other ungulates (livestock and wildlife) common to the watering facility locations. For example, the Piceance Mustangs have committed funding to the completion of additional local water developments known as the USGS Well Conversion, the Dead Horse Ridge Well Conversion,

and the Colorado Division of Parks and Wildlife (CPW) water trough located adjacent to the Yellow Creek Corrals (off Rio Blanco County Road 122).

In 2019, another volunteer group formed, called Meeker Mustang Makeover. This group also signed a Memorandum of Understanding with the BLM. This group works with BLM on the public education of how and where the wild horses live, the concerns with any overpopulation, and the impacts on the rangelands. This group conducts an annual event which show cases the trainability and usefulness of wild horses, generating interest in adopting wild horses, as well as assisting in the placement of the wild horses trained for the event.

1.1.2. Appropriate Management Level (AML)

The AML is defined as the number of wild horses that can be sustained within a designated herd management area, which achieves and maintains a thriving natural ecological balance in keeping with the multiple-use management concept for the area. The AML in the PEDHMA was established as a population range of 135-235 wild horses in the 2002 Piceance-East Douglas Wild Horse Herd Management Area EA (WR-02-049), following an in-depth analysis of habitat suitability, resource monitoring, and population inventory data.

The AML represents "that 'optimum number' of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range" (Animal Protection Institute, 109 Interior Board of Land Appeals (IBLA) 119; 1989). The IBLA has also held that, "Proper range management dictates removal of horses before the herd size causes damage to the rangeland. Thus, the optimum number of horses is somewhere below the number that would cause resource damage." (Animal Protection Institute, 118 IBLA 63, 75; 1991).

The upper level of the AML established within the PEDHMA represents the maximum population for which thriving natural ecological balance would be maintained. The low end of AML represents the number of animals to remain in the PEDHMA following a wild horse gather to allow for a periodic gather cycle, and to prevent the population from exceeding the established AML between gathers.

The estimated population of wild horses within the PEDHMA by the end of fall 2020 was at least 838 wild horses (Table 1). This figure was calculated using the February 2016 wild horse aerial inventory that was completed using the direct count method. Direct count aerial surveys are invariably an underestimate of animals present, so the estimated population sizes in Table 1 should be interpreted as minima; true values may be larger. Population projections are based on an annual herd growth rate of approximately 20 percent, consistent with published values (Ransom et al. 2016). Additional wild horses may occur in the PEDHMA for several other reasons that include but are not limited to the following: (1) wild horses may be moving into the PEDHMA from adjacent areas, and/or (2) stray domestic horses may have been released or escaped into the PEDHMA.

Table 1. Estimated Wild Horse Population in the Piceance-East Douglas Herd Management Area

Estimation Method	Date	Estimated Population[1]	Percentage of Upper AML[2]	Excess Animals[3]
Aerial Direct Count February 2016[4]	Fall 2016	404	172%	169-269
Extrapolation from 2016 Estimate	Fall 2017	485	206%	250-350
Extrapolation from 2017 Estimate	Fall 2018	582	248%	347-447
Extrapolation from 2018 Estimate	Fall 2019	698	297%	463-563
Extrapolation from 2019 Estimate	Fall 2020	838	357%	603-703

[1]To account for recruitment, a 20 percent foal increase was included in each population estimate. Because the February 2016 inventory was a raw count, undetected animals were not included. Therefore, all estimated population sizes in this table should be seen as minimum values. The true number of wild horses present at this time is likely to be greater than 838.
[2]The appropriate management level (AML) for the PEDHMA is 135-235 wild horses.
[3]Excess animals were calculated using the estimated population and subtracting the low and high end of AML.
[4]Aerial Count in February 2016 was 337 wild horses seen, located inside the PEDHMA. Since that time, the projected addition of 20 percent per year net recruitment rate results in an estimated population of at least 404 wild horses, by Fall 2016.

Based on the information available at this time, the BLM has determined that that all wild horses located within the PEDHMA that are over AML (135 – 235) would be considered excess and need to be removed (refer to Appendix B., Review of Current Situation memorandum, dated October 19, 2020 and Appendix C., Excess Determination memorandum, dated October 22, 2020). If a gather operation is not conducted in 2021, then the number of wild horses that would need to be removed to reach AML would increase approximately 20 percent per year (dependent on projected population growth within the PEDHMA). The estimated number of excess wild horses to be gathered and removed in future gather operations would be based on aerial survey results or updated estimates of the population.

1.2. Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to remove excess wild horses from within the PEDHMA, to manage wild horse populations to achieve and maintain a population within the established AML ranges, and to reduce the wild horse population recruitment (growth) rate to prevent undue or unnecessary degradation of the public lands associated with deterioration of rangeland resources due to an overpopulation of excess wild horses within the PEDHMA, thereby restoring a thriving natural ecological balance and multiple-use relationship on the public lands consistent with the provisions of Section 1333 (a) of the *Wild Free-Roaming Horses and Burros Act of 1971*.

The need is derived through management objectives established in the Federal Land Policy and Management Act (FLPMA), the 1997 White River Resource Management Plan, as amended, and as amended by the 2015 Northwest Colorado Greater Sage-Grouse RMP Amendment, and the Wild Free-Roaming Horses and Burros Act of 1971 (as amended), that in conjunction,

establishes that rangeland resources should be protected to prevent undue degradation of public lands associated with an overpopulation of wild horses.

1.3. Decision to Be Made

Based on the analysis contained in this EA, the BLM will decide whether to approve or deny the proposed gather operations and fertility control measures and if so, under what terms and conditions. The BLM is mandated to remove animals from public lands after the Authorized Officer has made a determination that excess wild horses exist (43 CFR 4720.1). Under the National Environmental Policy Act (NEPA), the BLM must determine if there are any significant environmental impacts associated with the Proposed Action warranting further analysis in an Environmental Impact Statement (EIS). The Field Manager is the responsible officer who will decide one of the following:

- To approve all, part, or none of the proposed gather operations and fertility control measures; or
- To analyze the effects of the Proposed Action in an EIS.

Decisions outside the scope of this analysis include adjusting livestock use and the AML within the PEDHMA.

In March 2019, the BLM issued Permanent Instruction Memorandum (PIM)-2019-004[1], that established policy for issuance of wild horse gather decisions. Specifically, PIM-2019-004 directs the BLM to "issue decisions authorizing gathers, removals, or population control actions through a phased approach or over a multi-year period when it determines that such an approach would help it achieve its management objectives." Issuing multi-year decisions would "enhance agency flexibility by allowing the BLM to adapt to unforeseen circumstances (such as, changes in national priorities, limited funding and holding space, reduced gather numbers, hard-to-catch or trap-shy animals, and emergency gather needs that impact gather schedules)." The 10-year time frame after any initial gather, under consideration in action alternatives in this EA, is consistent with this policy.

1.4. Land Use Plan Conformance

Plan Conformance: The proposed action and alternatives have been reviewed and found to be in conformance (43 CFR 1610.5) with the following BLM land use plans and the associated decisions:

Land Use Plan: White River Record of Decision and Approved Resource Management Plan (RMP)

Date Approved: July 1997

Decision Language: "Objective: Manage for a wild horse herd of [135-235] animals on 190,130 acres within the Piceance-East Douglas Herd Management Area (HMA) so that

[1] BLM's instruction memoranda are available online at: https://www.blm.gov/media/blm-policy/

a thriving ecological balance is maintained for all plant and animal species on that range."

Management: "Wild horses will be managed to provide a healthy, viable breeding population with a diverse age structure."

"The boundary of the Piceance-East Douglas HMA will be expanded to include the Greasewood allotment (presently a part of the North Piceance Herd Area)."

"The wild horse herd population will be managed to improve range condition." (page 2-26)

Land Use Plan: Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment (GRSG RMPA)

Date Approved: September 2015

Decision Language: Objective WHB-1. "Manage wild horses in a manner designed to 1) avoid reductions in grass, forb and shrub cover, and 2) avoid increasing unpalatable forbs and invasive plant such as *Bromus tectorum* [cheatgrass]."

Management: MD WHB-1: (All Designated Habitat) "Manage wild horse population levels within established appropriate management levels".

MD WHB-2: (All Designated Habitat) "Prioritize gathers in GRSG [priority habitat management areas], unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health impacts. Consider GRSG habitat requirements in conjunction with all resource values managed by the BLM and give preference to GRSG habitat unless site-specific circumstances warrant an exemption." (page 2-13)

1.5. Relationship to Statutes, Regulations, or Other Plans

1.5.1. Statutes and Regulations

Gathering excess wild horses is in conformance with Public Law 92-195 (WFRHBA) as amended by Public Law 94-579; Federal Land Policy and Management Act (FLPMA), and Public Law 95-514 (Public Rangelands Improvement Act [PRIA] of 1978). WFRHBA, as amended, requires the protection, management, and control of wild free-roaming horses and burros on public lands. In addition, the preparation and transport of wild horses would be conducted in conformance with all applicable state statutes.

The Proposed Action is in conformance with all applicable regulations at 43 CFR 4700 and policies. The following are excerpts from 43 CFR relating to the protection, management, and control of wild horses under the administration of the BLM.

- **43 CFR 4700.0-2 Objectives**
  Management of wild horses and burros as an integral part of the natural ecosystem of the public lands under the principle of multiple use.

- **43 CFR 4700.0-6(a-c) Policy**
  Requires that BLM manage wild horses "…as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat … consider comparably with other resource values …" while at the same time "…maintaining free-roaming behavior."
- **43 CFR 4700.06(e) Policy**
  Healthy excess wild horses for which an adoption demand by qualified individuals exists shall be made available at adoption centers for private maintenance and care.
- **43 CFR 4710.3-1 Herd management areas.**
  Herd management areas shall be established for the maintenance of wild horse and burro herds. In delineating each herd management area, the authorized officer shall consider the appropriate management level for the herd, the habitat requirements of the animals, the relationships with other uses of the public and adjacent private lands, and the constraints contained in 4710.4.
- **43 CFR 4710.4 Constraints on management.**
  Management of wild horses and burros shall be undertaken by limiting the animals' distribution to herd areas. Management shall be at the minimum feasible level necessary to attain the objectives identified in approved land use plans and herd management area plans.
- **43 CFR 4720.1 Removal of excess animals from public lands.**
  Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.
- **43 CFR 4740.1 Use of motor vehicles or aircraft.**
  (a) Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner.

  (b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made.

Section 106 of the National Historic Preservation Act requires federal agencies to determine the possible effects of their actions on historic properties (those archaeological or historic sites eligible for or listed on the National Register of Historic Places). See 36 CFR 800 for a description of this process.

The Proposed Action and alternatives are in conformance with the Fundamentals of Rangeland Health (43 CFR 4180) and Colorado Standards for Rangeland Health and Guidelines for Grazing Management which addresses watersheds, ecological conditions, water quality and habitat for special status species.

The Proposed Action and alternatives are in conformance with the Endangered Species Act (ESA) which provides a program for the conservation of threatened and endangered plants and

animals and the habitats in which they are found. All federal actions must be reviewed to determine their probable effect on threatened and endangered plants and animals.

In addition, the Proposed Action is in conformance with the following Acts, regulation, and policy:

- Taylor Grazing Act (TGA) of 1934
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.) as amended
- Public Rangelands Improvement Act (PRIA) of 1978
- Endangered Species Act (ESA) of 1973, as amended
- Bald and Golden Eagle Protection Act of 1962
- BLM Manual 6840 – Special Status Species Management
- Migratory Bird Treaty Act
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- Instruction Memorandum CO-2011-007 Migratory Bird Treaty Act – Interim Management Guidance
- Protection, Management, and Control of Wild Free-Roaming Horses and Burros, Title 43 CFR 4700
- National Environmental Policy Act of 1969, as amended
- American Indian Religious Freedom Act of 1979
- Archaeological Resource Protection Act of 1979
- National Historic Preservation Act of 1966, as amended
- Appropriations Act, 2001 (114 Stat. 1009) (66 Fed. Reg.753, January 4, 2001)

1.5.2. Other Gather Plans in the PEDHMA

In August 2011, the BLM approved the gather and removal of excess wild horses from both within the PEDHMA and "those areas outside of the HMA" (DOI-BLM-CO-110-2011-0058-EA). The intention of the 2011 gather was to remove all excess wild horses and to reach low end of the AML within the PEDHMA.

In June 2020, the BLM listed the DOI-BLM-CO-N050-2020-0040-CX on the online NEPA register for the removal of 75 wild horses from private lands within the PEDHMA (specifically within the Greasewood Allotment). The BLM originally withdrew this categorical exclusion when there was no interest from gather contractors in submitting bids on this project and because these private lands would subsequently be addressed as part of the overall gather plan for the PEDHMA evaluated in the subject EA. However, due to resource concerns and the availability of space in holding facilities, the BLM strives to conduct an "in-house" gather operation (staffed by BLM personnel) and the Categorical Exclusion was completed on October 27, 2020.

1.5.3. Gather Plans for Outside the PEDHMA

In February 2020, the BLM issued a multi-year decision to "use all approved gather methods (either individually or in various combinations) to remove all of the excess wild horses from areas located outside of the PEDHMA: west of State Highway 13, south of the White River, east of the Utah state border and the WRFO's southern boundary (DOI-BLM-CO-N05-2018-0071-

DNA). In essence, the February 2020 DNA issued a gather decision for areas that were previously evaluated through separate NEPA reviews (i.e., the West Douglas Herd Area (WDHA) and surrounding areas, and areas outside of but adjacent to the PEDHMA). As such, the proposal in the subject EA is only for gather and fertility control within the PEDHMA.

2. PUBLIC INVOLVEMENT

2.1. Public Comment on the EA

The BLM uses a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to identify issues, concerns, and potential impacts that require detailed analysis. Scoping is both an internal and external process. Internal scoping was initiated when the project was presented to the WRFO interdisciplinary team on September 1, 2020. Rather than conducting a new round of external scoping, the BLM reviewed the DOI-BLM-CO-110-2011-0058-EA (August 2011) to identify issues previously raised by the public in regard to gather operations and fertility control plans over the next 10 years within the PEDHMA.

This EA and the unsigned Finding of No Significant Impact (FONSI) were available for a 30-day public review and comment period beginning November 23, 2020 and ending December 23, 2020. This EA was also posted on the BLM's on-line NEPA register (ePlanning) on November 23, 2020.

2.2. Hearings for Use of Helicopters and Motorized Vehicles

Hearings on the use of helicopters and motorized vehicles are required to be held as necessary to comply with Section 404 of the Federal Land Policy and Management Act (FLPMA). Pursuant to 43 CFR 4740.2(b), the BLM will periodically hold a public hearing on the use of helicopters and motorized vehicles in conjunction with wild horse management including gather operations. The last public hearing was held in August 2019 in Craig, Colorado. Future public hearings would be announced via a press release.

During the meeting, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to manage wild horses. This process has been in place for decades and relevant issues associated with these methods have been addressed in the Comprehensive Animal Welfare Program (CAWP) Standards (Appendix D).

2.3. Public Viewing Opportunities

Opportunities for public observation of the gather activities on public lands would be provided, when and where feasible, and would be consistent with IM 2013-058 and the Visitation Protocol and Ground Rules for Helicopter WH&B Gathers. This protocol is intended to establish observation locations that reduce safety risks to the public during helicopter gathers. Due to the nature of bait trapping operations, public viewing opportunities may only be provided at holding corrals.

3. PROPOSED ACTION AND ALTERNATIVES

The BLM has reviewed the guidance in IM 2020-012 (Wild Horse and Burro Gather Planning, Scheduling, and Approval) in developing the alternatives for managing the wild horse population within the PEDHMA.

The BLM has developed three alternatives that are considered in detail:

- Alternative A (Proposed Action) – Gather to the Low End of AML and Use Non-Permanent Fertility Control Treatments
- Alternative B – Gather to the Low End of AML and Do Not Use Fertility Control Treatments
- Alternative C – No Action Alternative

All gather operations would be conducted according to PIM-2021-002 which establishes policy for the Wild Horse and Burro (WH&B) gather component of the CAWP. It defines standards, training, and monitoring for conducting safe, efficient, and successful WH&B gather operations while ensuring humane care and handling of animals gathered. The CAWP (PIM-2021-002, Attachment 1) is attached as Appendix D.

The gather and removal of excess wild horses would be conducted by a BLM Wild Horse and Burro (WH&B) National Program Contractor and/or BLM personnel. On a case-by-case basis, the BLM may also allow approved volunteers to assist and/or advise BLM during gather operations, but all wild horse management decisions would rest with BLM gather personnel.

Excess wild horses that would be gathered and removed from the PEDHMA would be transported to off-range corrals (ORC). All wild horse gathers, and removals are subject to funding approval as well as based on space availability of ORC. The gather and removal of excess wild horses located within the PEDHMA would be conducted over a period of several years using a variety of gather techniques including helicopter drive trapping, helicopter assisted roping, and/or bait trapping once the BLM's National Wild Horse and Burro Program office has provided funding, determined space is available and the WRFO received such approval.

Under the Proposed Action and Alternative B, to meet the purpose and need of maintaining the wild horse population at AML, it is likely multiple gathers would need to occur. The proposal for a 10-year gather plan is consistent with other BLM gather decisions in other states where BLM manages wild horses and burros. The proposed actions are consistent with management at the minimum feasible level under the WFRHBA, as supported by various legal rulings. BLM's use of a single gather plan and a single environmental assessment to cover a period of years and a series of individual gather operations is not a departure from the agency's past practice, as determined by a panel of appeals court judges in a recent case.

3.1. Alternative A – Proposed Action (Gather to the Low End of AML and Fertility Control Treatment)

The short-term goal of the Proposed Action is to return the wild horse population within the PEDHMA to within AML. The long-term goal is to be able to better maintain the wild horse population within AML and reduce the need for subsequent gathers and removals through the use of fertility control treatments, without jeopardizing the genetic diversity of the population. A slightly greater number of stallions than mares may be returned to the range after gather operations, to reduce the potential foaling rate. The ratio of stallions to mares would rarely exceed 55:45 and would never exceed 60:40. However, funding limitations and competing priorities (for long-term holding) may affect the timing of gathers and fertility control treatments.

Gather and Removal of Excess Wild Horses

Under the Proposed Action, the BLM would gather and selectively remove excess wild horses down to the low end of AML using an initial gather operation conducted as soon as possible and return periodically to gather excess wild horses to maintain the AML within the PEDHMA. The BLM would return to the PEDHMA to continue to remove excess wild horses (to the low end of AML) by conducting subsequent (follow-up) gather and removals as necessary over a 10-year period. The 10-year period of potential gathers would begin with the initial gather operation within the PEDHMA.

Gather operations and fertility control treatments may be delayed and/or halted and then restarted depending on funding and the allocation of spaces in holding facilities.

Fertility Control Treatments

To the extent possible, the BLM may initiate the administration of fertility control treatments prior to the initial gather operation to begin reducing the current annual recruitment rate and would continue with fertility control treatments over the period of 10 years from the date of the initial gather operation. If no new information changes this analysis and funding continues to be provided, then BLM would consider continuing fertility control treatments beyond the 10 years. Under this alternative, fertility control treatments would primarily consist of vaccine treatments (e.g., PZP ZonaStat-H, PZP-22 pellet vaccine, GonaCon-Equine – preference is GonaCon-Equine) along with the potential use of intrauterine devices (IUDs). Fertility control treatments would be applied through hand applications, jab sticks, in the field darting, or other appropriate application method for the effective application of the selected fertility control type (Appendix H).

If it is determined that a mare or mares cannot be approached within darting range on foot, then baiting may be used to draw the wild horses to within darting distance for treatment. Baiting would be accomplished with water, salt, mineral supplements, grains, or weed-free hay in areas that wild horses use in their normal movements throughout the PEDHMA. Wild horses may need to be trapped at bait stations, which would enable them to be darted and then released. Darting may also occur at locations where wild horses normally travel or at concentration areas around water. If the mechanism is shown to be safe and effective, BLM may consider use of an automated GonaCon-Equine dart delivery system (e.g., as developed by Wildlife Protection Management, New Mexico). The BLM would follow the agency's Standard Operation Procedures (SOPs) for implementation of fertility control treatments (See Appendices G and H).

Population Monitoring

Population inventories, genetic sampling, and routine resource/habitat monitoring would continue to be conducted between gather cycles to document current population levels, growth rates, and areas of continued resource concern (wild horse concentrations, riparian impacts, over-utilization, etc.) prior to any follow-up gather. Potential reductions in recruitment rates due to the use of fertility control treatments would be accounted for in future population projections, based on the estimated fraction of mares expected to be contracepted in a given year.

Selective Removal and Augmentation

In order to manage for the long-term genetic and phenotypic diversity of the PEDHMA wild horse population, the BLM may choose to implement selective removal of individual horses or to release new animals into the herd. Selective removal procedures would prioritize removal of younger horses to allow older, less adoptable wild horses to be released back to the PEDHMA. The selection process would involve retaining wild horses for a diversity of preferred conformation, disposition, color, and other features deemed desirable in the herd. Periodic introduction of studs or mares from a different HMA, with desired characteristics similar to the wild horses within the PEDHMA could be made, to augment genetic diversity in the PEDHMA, as measured by observed heterozygosity, if the results of genetic monitoring indicate that is necessary. All wild horses identified to remain in the PEDHMA herd would be selected to maintain a diverse age structure, herd characteristics, and body type (conformation).

3.1.1. Gather Methods

The types of approved gather methods include:

1. Helicopter drive-trapping involves using a helicopter to spot and then herd wild horses towards a pre-constructed trap. Traps would be pre-constructed utilizing portable, round-pipe steel panels with funnel-shaped wings made up of jute fabric affixed to T-posts that have been temporarily tamped into the ground to create a visual barrier. As the wild horses are driven/hazed by the helicopter towards the trap through the "wings" or funnel, the wild horses enter the trap where on-the-ground personnel then shut the gate behind the wild horses to secure them in the trap. In general, most traps would be 1 – 5 acres in size. Trap locations would be situated in areas where previously used trap sites were located or at other disturbed areas whenever possible. Trap locations would be chosen for safety of maneuvering the wild horses into the trap, as well as to target the gathering of wild horses located in a given area. The BLM Wild Horse and Burro Handbook, H-4700-1, Section 4.4.4 prohibits the capture of wild horses by helicopter during peak foaling periods except in case of emergency. Helicopter drive-trapping would not be conducted between the dates of March 1 and June 30, which is the peak foaling period in the PEDHMA (IM 2010-183), except in emergency situations according to IM 2015-152. The use of helicopters for gather operations is allowed from July 1 to February 28 which is outside of the peak foaling period.
2. Helicopter-assisted roping includes the use of a helicopter to herd wild horses towards ropers who rope the wild horse(s). Once roped, another rider would ride alongside the roped wild horse and roper, helping to haze or herd the roped wild horse either towards the trap or towards a stock trailer. Once at the trap, the rope is slipped off the wild horse's neck and it joins the rest of the trapped wild horses. No helicopter-assisted roping would

be conducted between the dates of March 1 and June 30 due to the BLM's policy which prohibits the capture of wild horses by helicopter during peak foaling periods.

3. Bait trapping uses a trap constructed of portable, round-pipe steel panels. Funnel-shaped traps are built allowing wild horses to enter deep into the trap so that the gate release mechanism has time to close. Traps would be located in areas frequented by wild horses. Potential types of bait may include, but are not limited to, water, mineral supplements, or quality, weed free hay. Bait trapping may be conducted at any time of year. Trap size would generally be less than ¼ acre in area. Traps would remain in place until the desired number of excess wild horses are gathered and removed. Bait trapping generally requires a longer window of time for success than helicopter trapping. Although the trap(s) would be set in a high probability area for capturing the excess wild horses residing within a given area, and at the most effective time periods, some period of time is required for the wild horses to acclimate to the trap and/or decide to access the bait.

   When actively trapping wild horses, the trap would be staffed or checked on a daily basis by either BLM personnel or authorized contractor staff and possibly authorized volunteers. Wild horses would be either removed immediately or fed and watered for up to several days prior to transport to a holding facility.

3.1.2. Design Features for Gather Operations

Animal Welfare:

1. During gathering operations safety precautions would be taken to protect all personnel, animals, and property involved in the process from injury or damage, consistent with BLM's comprehensive animal welfare program (Appendix D; BLM PIM-2021-002). Only authorized personnel would be allowed on site during the removal operations. Included in the "gathering and removal" operations would be sorting individual wild horses as to their age, sex, temperament and/or physical condition, and to return selected wild horses back to the range (PEDHMA).
2. Contractors and/or BLM personnel would utilize trailers to transport gathered wild horses to a temporary holding facility where they would receive appropriate food and water. Holding facilities and gather sites have historically been located on both public and private lands due to road access and availability of water.
3. Wild horses that are removed from the area would most likely be transported to BLM's Canon City, Colorado holding facility where they would be prepared (freeze-marked, vaccinated, microchipped, and de-wormed) for adoption, sale (as regulations permit), or off-range pastures unless unforeseen circumstances warranted that the wild horses be transported to a different approved BLM holding facility (i.e., at Rock Springs, Wyoming).
4. There is no proposal to hold a wild horse adoption at the temporary holding facility upon completion of a gather operation due to a current lack of local adoption interest. However, if it is determined that an adoption is warranted and feasible, the BLM may hold an adoption with a date to be decided upon and advertised.

5. A veterinarian from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) would be present at helicopter gather operations to examine animals and make recommendations to the BLM for care and treatment of the gathered wild horses. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM Manual 4730 and IM 2015-070. If for some reason an APHIS Veterinarian is not present on a gather, the BLM would coordinate with a local private veterinarian for on-call or referral services as needed. BLM staff would be present on the gather at all times to observe animal condition, ensure humane treatment of wild horses, and ensure contract requirements are met.
6. During gather operations, the Contracting Officer Representative (COR), as delegated by the Authorized Officer (AO) prior to the gather, would authorize the release or euthanasia of any wild horse that they believe would not tolerate the handling stress associated with transportation, adoption preparation, or holding. No wild horse should be released or shipped to a preparation or other facility with a preexisting condition that requires immediate euthanasia as an act of mercy. The Incident Commander (IC) or COR should, as an act of mercy and after consultation with the on-site veterinarian, euthanize any animal that meets any of the conditions described in IM 2015-070.

Communication:

7. The WRFO would utilize the Incident Command System (ICS) to enable safe, efficient, and successful wild horse gather and removal operations in accordance with IM 2013-060.
8. The BLM would provide the public/media with safe and transparent visitation at wild horse gather operation in accordance with IM 2013-058. The BLM would conduct gather operations while ensuring the humane treatment of wild horses in accordance with PIM-2021-002. A schedule would be prepared and posted on the appropriate website that would outline specific viewing opportunities and other relevant information. The BLM would provide concise, accurate and timely information about gather operations with communication and reporting during an ongoing wild horse gather in accordance with IM 2013-061 regarding Internal and External Communication and Reporting.
9. Any discovery of hazardous or potentially hazardous materials would be reported to the BLM hazardous materials coordinator and Law Enforcement for investigation.
10. Prior to commencement of gathering operations, the BLM would notify existing right-of-way holders, range permittees, operators, and lessees of any location, date, and time associated with the gather operation that may affect their permitted activities.
11. If gather operations are conducted during any of the CPW big game seasons, Special Recreation Permit holders authorized to operate in the analysis area for commercial big game guiding and outfitting would be notified of the gather activities and locations in advance.
12. The BLM is responsible for informing all persons who are associated with the project that they would be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.

13. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery would cease, and the WRFO Archaeologist would be notified immediately. Work may not resume at that location until approved by the AO. The BLM would make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, the BLM would evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The BLM would implement the mitigation in a timely manner. The process would be fully documented in reports, site forms, maps, drawings, and photographs. The BLM would forward documentation to the SHPO for review and concurrence.
14. Pursuant to 43 CFR 10.4(g), the BLM would immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.
15. The BLM would be responsible for informing all persons who are associated with gather operations that they would be subject to prosecution for disturbing or collecting vertebrate or other scientifically important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.

Weed Management and Reclamation:

16. Any hay fed at trap sites or holding facilities, on public lands, would be certified as weed free. Any noxious weeds introduced through the proposed action would be controlled by the BLM. If weeds are discovered, the BLM would treat these locations following procedures outlined in the WRFO's Integrated Weed Management Plan (DOI-BLM-CO-110-2010-0005-EA).
17. All trap locations would be monitored for up to three years after gather operations for vegetation recovery. If problems with vegetation establishment are discovered, BLM would treat these locations based on the aid in vegetation recovery that may be necessary, e.g., broadcast seeding, at the trap locations.
18. All equipment used for gathering operations shall be cleaned before it comes to WRFO and when it leaves WRFO to minimize the potential spread of noxious and/or invasive weed species.
19. Equipment shall be cleaned when moving between locations within the analysis area if noxious weeds are encountered and if there is any potential for weed seeds to be carried between locations.

Restrictions on Trap Locations:

20. The BLM would not construct new bait trap locations or have new temporary holding facilities within 300 meters of known occupied habitat for special status plant species (SSPS). Trap and holding facilities that are proposed to occur on already existing

disturbance and occur within 300 meters of SSPS habitat must be approved by the WRFO Ecologist prior to gather operations. The WRFO Ecologist would advise and determine if a survey is necessary before trap location approval. Prior to helicopter gather operations, a SSPS avoidance area map would be provided to incident command staff by the WRFO Ecologist for reference during selection of trap site locations.

21. If a trap/holding site (located on existing disturbances) must occur within 300 meters of threatened plants and the WRFO Ecologist determines there are "likely to be" effects to threatened plants, then Section 7 Consultation with the U.S. Fish and Wildlife Service (FWS) will be initiated to comply with Endangered Species Act (ESA).
22. Traps and temporary holding facilities would be located in previously used trap sites or on an area of existing disturbance, such as a road or a wash. If an existing disturbed area cannot be located for traps and temporary holding facilities, a cultural resource inventory would take place prior to the gather if there is inadequate inventory data available. If cultural resources are located during this inventory, the trap site or temporary holding facility would be moved to another location, which does not contain cultural resources.
23. No traps or holding facilities would be located at or impede the use of the developed recreation sites in Canyon Pintado National Historic District.
24. Known and reported fossil localities would be avoided when locating trap sites and associated wing fences and holding facilities. Sites without adequate inventory data would need to be examined for the presence of fossils during trap site selection activities. Trap facilities would be relocated or modified to avoid impacting identified fossil resources.
25. Surveys of suitable raptor nesting habitat would be conducted by a WRFO Biologist at trap sites proposed for use or development from April 15 to August 15. In the event an active raptor nest is found in the vicinity of trapping operations, these sites would be afforded a buffer adequate to effectively isolate nesting activity from disruptions generated by wild horse trapping operations as required in the 1997 White River RMP. The timing stipulation would only apply to trapping operations. Darting operations would be permitted during this time frame.
26. Trapping operations would only be allowed to take place between the hours of 9:00 am and 4:00 pm at trap sites located within 0.25 miles of active sage-grouse leks during the lekking period (March 1 – May 15).
27. Those sites proposed for water trapping would be surveyed by a WRFO Biologist prior to use to determine if sites are occupied by aquatic amphibian species. If trapping efforts are found to impact individuals or habitat, the trap site would be relocated.
28. Any traps placed within an ACEC would be limited to areas of existing disturbance and would be placed in a manner that it would not impact resources for which the ACEC has been designated. Until the BLM makes the decision (through a land use planning process) on whether or not to designate the Physaria Potential ACEC, the BLM would place traps in the same manner as within the designated ACECs.

29. The appropriate best management practices (such as erosion controls) should be used to minimize further impacts when placing traps adjacent to steam segments listed as impaired or threatened under section 303(d) of the Clean Water Act.

30. The NRCS soils map should be consulted when designing best management practices (i.e., waddles, silt fencing, etc.) to ensure minimal erosion at trap sites.

Minimizing Erosion:

31. All activity shall cease when soils or road surfaces become saturated to a depth of three inches unless otherwise approved by the AO.

32. Any trap sites located on slopes greater than 35 percent would be evaluated in the field by a WRFO Hydrologist prior to identifying any necessary mitigation in order to ensure that use of the site would still allow for meeting Public Land Health Standard 1 (e.g., minimizing overland surface erosion and subsequent rill and/or gully formation). Examples of mitigation may include placement of waddles.

Helicopter Operations:

33. Avoid, if possible, helicopter gather operations from late-August through November for high public use areas during big game hunting seasons.

34. If possible, the BLM would avoid helicopter gather operations from December 1 through February 28 to reduce/eliminate impacts to big game during the critical winter period.

35. If possible, the BLM would avoid helicopter gather operations from July 1 through August 15 to reduce/eliminate impacts to nesting raptors and migratory birds.

36. Colorado Parks and Wildlife (CPW) staff would be contacted to coordinate gather operations in an effort to develop mutually compatible strategies that may reduce the intensity and localize the expanse of helicopter related disturbances during big game hunting seasons.

37. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates and applicable regulations of the State in which the gather is located.

38. Aviation fueling operations would be conducted a minimum of 1,000 ft from wild horses in traps or temporary holding facilities.

39. All refueling would occur on existing roads or a site approved by the BLM as a helicopter staging area. All approved staging areas would be a minimum of 200 ft from any riparian area or stream channel. The operator would utilize absorbent pads while refueling to control potential of fuel spills. In the event of a spill of lubricant, hydraulic fluids, fuels, or other hydrocarbons, the spill would be reported to the BLM's Contracting Officer Representative (COR) or Project Inspector (PI) so that BLM can immediately conduct evaluations of any necessary clean-up actions, as well as perform such actions to ensure compliance with applicable laws, rules, and regulations.

40. When utilizing a helicopter gather all helicopter operations would be conducted in a safe manner and in compliance with Federal Aviation Administration (FAA) regulations 14 CFR § 91.119, IM 2010-164 and IM 2013-164.

3.1.3. Design Features for Fertility Treatments

General

1. Fertility control treatment would be conducted in accordance with the approved standard operating procedures (Appendix H) and post-treatment monitoring procedures. Breeding age mares selected for release back to the range would be treated with approved fertility control vaccines and/or IUDs, which would reduce fertility of the treated mares.
2. Any new fertility controls may be considered for use as directed through the most recent direction of the National Wild Horse and Burro Program. The use of any new fertility controls would employ the most current best management practices and humane procedures available for the implementation of the new controls.
3. Fertility control vaccines would be administered through darting by trained BLM personnel or collaborating partners only. For any PZP vaccine darting operation, the designated personnel must have successfully completed a nationally recognized darting training course and who possess documented and successful experience darting under field conditions. If the mechanism is shown to be safe and effective, BLM may consider use of an automated GonaCon-Equine dart delivery system (e.g., as developed by Wildlife Protection Management, New Mexico), pursuant to the development of additional SOPs.
4. The WRFO would be applying adaptive management principles as it pertains to fertility control applications and treatments. If policies change or the vaccine effects or effectiveness prove undesirable, then the application of the fertility control measures would be stopped or reconsidered based on new scientific information. If a specific adjuvant is dropped from BLM use and is replaced by another vaccine formulation for fertility control purposes, that method would be applied by the WRFO in future treatments.
5. Fertility control would be administered prior to and once AML is reached and throughout the life of the plan. If monitoring shows successful applications, a low rate of negative injection site reactions and reduction in foaling rates, the fertility control treatments could continue beyond the life of the plan as long as it can be reasonably concluded that no new information and no new circumstances arise that need to be considered and those that are analyzed within this document have not substantially changed within the PEDHMA. The number of fertility control applications per year would also depend on annual funding and the presence of qualified applicators.
6. The field darting treatment protocol could begin prior to the initial gather operation but after approval of the proposed action. Field darting would be conducted in an opportunistic manner while the specialist is conducting routine monitoring activities as part of normal duties in the field or in an intentional manner depending on personnel

availability and timing. Field darting may also be conducted by trained and authorized volunteers. Field darting activities would be conducted either on foot or horseback, with access throughout the PEDHMA achieved by use of 4X4 vehicles and other off-highway vehicles (OHVs). Vehicles would be used on existing/designated roads and trails in the PEDHMA. After review of all potential access options and on a case-by-case basis, the use of OHVs off existing roads and trails may be allowed for administrative purposes; however, such use would be made only with the approvals from both the WRFO personnel and the AO.

7. Darting may be conducted individually or in teams. In most cases, it is generally recommended that no more than two people would be present on a darting "team." The second person is responsible for locating fired darts and would also be responsible for identifying the wild horse to be treated, keeping onlookers at a safe distance, and general support/safety of the team while in the field. However, darting "teams" of one or a higher number than two would also be acceptable where appropriate.
8. Attempts would be made to recover all darts. To the extent possible, all darts which are discharged and drop from the wild horse at the darting site would be recovered before another darting occurs. In exceptional situations, the site of a lost dart may be noted and marked, and recovery efforts made at a later time. All discharged darts would be examined after recovery in order to determine if the charge fired and the plunger fully expelled the vaccine. Personnel conducting darting operations should be equipped with a two-way radio or cell phone to provide a communication link with the identified BLM personnel for advice and/or assistance. In the event of a veterinary emergency, darting personnel would immediately contact the Project Veterinarian, providing all available information concerning the nature and location of the incident.
9. Treatment with IUDs would follow established protocols (Appendix H).

Wild Horse Identification and Priority for Treatment

10. Each mare would have an identification sheet with pictures, describing any markings, brands, scars, or other distinguishing marks. At the beginning of each year, a list of mares identified for re-treatment would be created and that information would be loaded into a format that is easy to use in the field (e.g., field notebook or electronic device). Currently, WRFO has an active local volunteer (documenter) with roughly 12+ years of wild horse identification data that they will provide to the WRFO at the time of starting fertility control treatments within the PEDHMA. IUD treated mares would be marked in a manner similar to those treated with vaccines.
11. New mares coming into treatment would be given the booster dose no sooner than 30 days after they have received the primer dose. Estimated age would be based on when the wild horses are observed being new herd foals. For older previously treated wild horses, it would come from the treatment's identification sheets. Aging older untreated wild horses would be based off photographs or similar documentation provided by volunteers knowledgeable of the herd/bands. For any adult mare whose age cannot be immediately established, initial treatment would be delayed by one year, to ensure she is older than 8 months by the time of the first treatment.
12. Primer inoculations would be administered to mares that are at least 8 months old.

13. Flexibility in determining which mares are selected for treatment is vital to the success of the fertility control program. Adjustments could be made: if it is found that there is a severe injection site reaction by an individual mare; if a given mare is shown to contribute in a particularly useful way to genetic diversity; or if a mare is shown to have a potentially negative effect on the herd's genetic diversity. This information would be documented on the identification sheet.
14. If timing or funding constraints arise, a treatment priority could consider the band or herd composition and priority would be given based on age class. Priorities would be established as follows:
    a. 2-4-year-old mares,
    b. mares just coming back into treatment, fillies 8 months old or older, and
    c. older mares that have received several treatments since producing a live foal.
15. The treated mares would be individually marked and/or be individually recognizable. During past treatments, mares may have been freeze branded on the hip and the neck. These brands would help in the identification of the wild horses. During any future gathers, new brands may be put on mares released back to the PEDHMA. Color, leg and face markings, and any other unique markings or scars could be used to identify any mares without a brand. Once each wild horse is positively identified, their information would be compiled into a database along with photographs. Individual identification information (photographs and unique characteristics) would be compiled into books or put onto an electronic device that can be taken to the field. Individual numbers are assigned to each herd/band member based on these unique characteristics. Unique numbers would be assigned to all mares and documented on the Identification sheets. A filly under 8 months would be tracked on her mother's Identification sheet. A filly over 8 months of age would receive her own number and Identification sheet. Where information is reliable, maternal kinship would be tracked or followed through Identification sheet notes.

Record Keeping

16. Wild Horse Immunocontraception Identification Sheets (currently in Wild Horse Information Management System [WHIMS]) would be prepared and updated. An individual mare's records would be reviewed prior to darting activity.
17. All darting, foaling, and health data would be recorded as per the Identification Sheet. Identification Sheets would be prepared and maintained in the WRFO or approved maintainer of information/volunteer (e.g., Piceance Mustangs, or specific volunteer with WHIMS data entry experience). Initially, copies of the Identification Sheets would be sent to the National WH&B Program Office and to the Science Conservation Center (SCC) at the Zoo Montana in Billings, MT. Thereafter, only treatment updates or new mare Identification Sheets would be sent annually.
18. The annual treatment schedule, database and Identification Sheets would be reviewed/approved by the AO with the wild horse specialist and/or darting specialist. An annual monitoring report would be prepared for the AO and filed in the fertility control treatment records for the PEDHMA. This monitoring report would show fertility control

treatment orders placed/costs, planned treatment schedule/actual treatments (number/dates of mares treated), lost darts, negative reactions/BLM action taken for that mare, number of new/current year foals counted/observed, unique circumstances, off road vehicular use, general rangeland condition/water availability, volunteer efforts, correspondence between/among the WRFO and the SCC and National Wild Horse and Burro Program (WH&B) Office and other pertinent information.

Regulatory Authorization and Vaccine Administration

19. Only volunteers, treatment contractors, or BLM personnel appropriately trained with fertility control would be authorized to apply the vaccine. Field darters may be accompanied by others to assist in the darting work.
20. The liquid gonadotropin releasing hormone (GnRH) vaccine, known as GonaCon-Equine, is federally approved by the EPA registration number 56228-41. No specific training is required to administer GonaCon-Equine to wild horses; however, a certified pesticide handler is required to receive shipments of the drug, and the EPA label requirements must be followed.
21. The WRFO would work with the WH&B Office in Reno, Nevada, and the U.S. Department of Agriculture (USDA) to order GonaCon-Equine vaccine. The USDA would then prepare and ship the order to the field office. Each dose of GonaCon-Equine would consist of 2 ml of emulsified liquid, including 0.032% of mammalian GnRH. No mixing of the vaccine is required. Remote application would be by means of darts, equipped with 3.81 cm 14 gage Tri-Port needles and a gel collar (McCann et al. 2017), delivered by either Dan-inject or Pneu-dart CO2 powered, or cartridge fired devices (guns). Recovery of all darts will be attempted (normally about a 98% recovery is expected).
22. The liquid PZP vaccine, known as ZonaStat-H is federally approved by the EPA registration number 86833–1. Training is required by the SCC to receive and/or administer ZonaStat-H to wild horses.
23. The WRFO would work with the National WH&B Office in Reno, Nevada, and the SCC to order the PZP vaccine. The SCC then prepares and ships the order to the field office. Each dose would consist of 100 micrograms of PZP in 0.5 cc buffer (a phosphate buffered saline solution). Mixing the vaccine would be accomplished as described in the Wild Horse Contraceptive Training Manual. Remote application would be by means of 1.0-cc darts, with either 1.25- or 1.5-inch barbless needles, delivered by either Dan-inject or Pneu-dart CO_2 powered, or cartridge-fired devices (guns).
24. PZP vaccine mixing procedures would be followed. The PZP vaccine protocol would be examined annually, in line with any new instructions provided by the SCC. The field use of GonaCon-Equine vaccine does not require mixing of the adjuvant.

3.2. Alternative B – Gather to the Low End of AML and Do Not Use Fertility Control Treatments

Similar to Alternative A, under Alternative B the BLM would gather and remove excess wild horses in order to reach the low end of PEDHMA's AML and conduct follow-up gathers and removals when required over the ten years following an initial gather, to keep populations within the AML range as the population fluctuates. The primary difference between the action alternatives is that under Alternative B, the BLM would not use any fertility control treatments. As a result, the gather frequency would be more often than under Alternative A, and the overall number of excess wild horses that ultimately would need to be removed from the range would be greater.

3.3. Alternative C – No Action Alternative

Under Alternative C, excess wild horses would not be gathered or removed from within the PEDHMA. The introduction of fertility control treatments would not be initiated or used. Existing management and monitoring including utilization, forage condition, water availability, animal health, and periodic population aerial census would continue. Without gathers, hair follicle sampling to monitor genetic diversity would not be as straightforward, but could be accomplished through non-invasive sampling (i.e., King et al. 2018), if funding allows.

This alternative would conflict with 43 CFR 4720.1 which requires the BLM to remove excess wild horses from public lands. It is included in this EA for comparison with the action alternatives.

3.4. Alternatives Considered but Not Analyzed in Detail

Alternatives considered but eliminated from detailed analysis are included in Appendix E, with discussion and rationale about why each alternative was not carried forward.

E.1. Alternative Gather Methods

- Bait Trap Only
- Use of Alternative Capture Techniques

E.2. Alternative Fertility Control Options

- Exclusively Using Field Darting to Deliver Fertility Treatments to Reduce Total Population Over Time
- Using Bait Trapping to Deliver Fertility Treatments to Reduce Total Population Over Time
- Use of Fertility Control Treatment Only to Reduce Total Population Over Time
- Gather and Release All (including Excess) Wild Horses Every Two Years and Apply PZP-22 Vaccine Pellet or Other Contraceptive Vaccine to Wild Horses for Release

E.3. Alternatives Related to Population Size or Structure

- Provide Supplemental Feed and Water
- Return a Portion of the Population as a Non-Breeding Population
- Utilize Only Sex Ratio Adjustment to Reduce Population Recruitment
- Gather the PEDHMA to the AML Upper Limit
- Adjust the Appropriate Management Level

- Wild Horse Numbers Controlled by Natural Means

E.4. Alternatives Inconsistent with Existing Land Use Plan Allocations

- Return the PEDHMA to Herd Area Status with Zero AML
- Manage the Entire Population as a Non-Breeding Population
- Remove Livestock within the PEDHMA

4. ISSUES

The CEQ Regulations state that NEPA documents "must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail" (40 CFR 1500.1(b))[2]. While many issues may arise during scoping, not all issues raised warrant analysis in an EA. Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. The following sections list the resources considered and the determination as to whether they require additional analysis.

4.1. Issues Analyzed in Detail

The following issues are analyzed in detail in this EA (Section 5):

Wild Horses

- How would selective removal and fertility control affect long-term population management of the PEDHMA herd in regard to age classes, sex ratios, and genetic composition? (section 5.3.1)

- How would gather operations affect wild horses in regard to both physical and emotional stress? (section 5.3.2)

- What are the short-term and long-term health effects of using fertility control on wild horses? (section 5.3.3)

Water Resources

- How would water trapping affect springs and riparian areas? (section 5.4.1)

Wildlife

- Would gather operations or activity associated with fertility control treatments (e.g., darting teams) disturb wildlife during sensitive times of the year? (section 5.5.1)

[2] References to the CEQ regulations throughout this EA are to the regulations in effect prior to September 14, 2020. The revised CEQ regulations effective September 14, 2020 are not referred to in this EA because the NEPA process associated with the proposed action began prior to this date.

4.2. Issues Considered but not Analyzed in Detail

Soils and Vegetation

1. **Would gather operations increase erosion of fragile soils or prime and unique farmlands?**

   Within the gather area, most soils are considered fragile and have a high erosion potential. There are approximately 10,671 acres of prime farmlands (if irrigated) located within the PEDHMA (5.6 percent). The NRCS soils map (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx) should be consulted before placing any traps to avoid the prime farmlands. If there is not an alternative to trap placement, erosion control features should be put into place (i.e., waddles, silt fencing etc.) to ensure minimal erosion within the gather area.

2. **Would gather operations, particularly trap sites and corrals, affect vegetation and increase noxious weeds?**

   During gather operations, vegetation would be disturbed at the location of trap sites and holding facilities due to congregation and trampling by wild horses and the increased vehicle and foot traffic. However, impacts to vegetation due to trampling would be expected to be minimal because every effort would be made to place trap sites in areas that have already been disturbed. The amount of vegetation that would be disturbed or affected is dependent on the number of wild horses gathered at a specific site and the duration those wild horses remain at the trap site/holding facility. Vegetation disturbance would be short term and limited to locations of temporary gather and holding facilities. It would be expected that plant communities would recover from disturbance within two growing seasons. Refer to 3.1.2 above regarding under section Weed Management and Reclamation design features #17 through #20 for both monitoring and treatment if noxious weeds are discovered post gather operations.

3. **Would gather operations affect occupied and suitable habitat for special status plant species (SSPS)?**

   In general, helicopter gather operations have the potential to impact SSPS by trailing, trampling, and/or herding of horses through occupied SSPS populations to reach holding facilities. Bait trapping has the potential to impact SSPS with the initial set-up and take-down of traps, as well as the increased human/horse foot traffic in areas within 300 meters of SSPS habitats. Currently there are no enclosures around any SSPS occupied or suitable habitats; wild horses have access to habitats and can freely roam through them. However, current monitoring data has shown wild horses have very little effects on SSPS populations. SSPS located within WRFO are predominately located on barren shale outcrops. Wild horse presence has been documented (i.e., manure piles, tracks) within SSPS populations, but not in high enough concentrations to deem harmful to SSPS.

   The BLM has committed to having all trap/holding facility locations reviewed by the WRFO Ecologist prior to gather efforts. The WRFO Ecologist would determine if a SSPS

survey is needed at the trap/holding facility location or if SSPS habitat is located within 300 meters of the proposed location. If SSPS habitat (occupied or suitable) is located within 300 meters the traps/holding facilities, all possible efforts would be made to relocate the trap/holding facility outside the 300-meter buffer for SSPS. If the trap/holding facility cannot be relocated outside 300 meters of habitat for threatened plants, then the BLM would conduct Section 7 Consultation with the U.S. Fish and Wildlife Service (FWS) if it is determined there will be an "effect" to the species.

Wildlife and Livestock

4. **Would gather operations affect sage-grouse priority habitat management areas?**
   Approximately 1,585 acres of BLM-administered greater sage-grouse priority habitat management area (PHMA) lies within the PEDHMA, the majority of which is in the southeast corner along County Road 103. There are two leks that are classified as active in the PEDHMA, although no birds have been observed on either lek in the past three years. As outlined in the Design Features (Section 3.1.1; #1 and #2), helicopter gather operations would not occur between March 1 and June 30 due to peak foaling period, which encompasses nearly all of the sage-grouse breeding period. This design feature would substantially reduce impacts associated with helicopter gather operations (e.g., noise, human activity, potential for nest trampling/disruption etc.) Similarly, restrictions on trap locations outlined in Section 3.1.2 (#18 and #27) would reduce the potential for disrupting courtship/breeding activities and minimize impacts to vegetation. In the long-term, the benefits to sagebrush communities and overall rangeland conditions associated with removal of wild horses would far outweigh the expected nominal and short-term impacts to sage-grouse associated with gather operations.

5. **Would bait trapping result in the inadvertent trapping of livestock and big game?**
   Bait traps would be monitored daily while they are active, therefore there would be little chance that livestock or wildlife would become inadvertently trapped. Placement of bait traps would not likely disrupt grazing management practices. If bait traps are placed in an area which livestock and wildlife rely for water, the trap would allow livestock and wildlife the use of the water.

Recreation and Public Access

6. **Would wild horse viewing opportunities be diminished due to gather operations?**
   Many view wild horses as symbols of the American West and seek opportunities to photograph and see these animals on public lands. Anecdotally, the BLM is aware people travel to the project area, especially in Spring to view foals. Viewing opportunities would be reduced under the various alternatives because all could result in less wild horses whether through removal via gather or reduced wild horse numbers via fertility control (i.e., fewer wild horses to view). Within Colorado, there are other opportunities for the public to view wild horses, including the Little Book Cliffs, Spring Creek, and Sand Wash Basin. Within Northwest Colorado, the BLM often encourages the public to visit Sand Wash Basin to view wild horses since there is typically a better chance to view

them due to differences in topography and vegetation. It may be more challenging to view wild horses within the PEDHMA due to varied topography and, in some places, dense pinyon-juniper cover. In contrast, the Sand Wash Basin HMA is relatively flat with open vegetation.

7. **Would gather operations impact hunting or opportunities for solitude?**
   The PEDHMA has over 74,000 acres of inventoried lands with wilderness characteristics, which are identified as such due to their naturalness and opportunities for solitude. Big game hunters are the main recreation user of these areas within the PEDHMA. While the act of gathering wild horses is expected to impact the solitude and primitive recreation opportunities; the impact would be temporary. Additionally, the BLM would coordinate with CPW to minimize disruption to hunters during the big game hunting season.

8. **Would gather operations affect public access or opportunities for recreational OHV riding?**
   The off-highway vehicle (OHV) trail network known as Wagon Wheel West consists of roughly 363 miles of interconnected BLM and County Roads. Several of these designated routes travel into the PEDHMA and may be impacted by wild horse gather activities. These impacts would be temporary in nature and are not expected to substantially impede public access to the area. If limited portions of the trail system must be temporarily closed to public use, there are many nearby routes that can provide users with a similar experience.

Special Designations

9. **Would gather operations affect the important resources managed for within Areas of Critical Environmental Concern?**
   The proposed gather area intersects six Areas of Critical Environmental Concern (ACECs): Coal Draw, Duck Creek, East Douglas Creek, Lower Greasewood Creek, South Cathedral Bluffs, and Yanks Gulch/Upper Greasewood Creek, (totaling 6,834 acres of designated ACEC acreage within the PEDHMA). These ACECs have been identified (Table 2-15 Annotated 1997 RMP) for special status plants, paleontological values, cultural values, remnant vegetation associations (RVAs), and biologically diverse plant communities. In addition, portions of the Physaria potential ACEC[3] (7,923 acres) are also located within the PEDHMA; the relevant and important characteristics for this area are cultural resources and special status plants (threatened plants). Impacts to these values are analyzed in this EA or BLM has committed to design features protecting the above-mentioned resources for ACEC designation. Based on analysis and the design

[3] In the Record of Decision for the Oil and Gas Development Resource Management Plan (RMP) Amendment, the BLM committed to evaluate previous external ACEC nominations to determine whether they satisfy the relevance and importance criteria consistent with BLM's planning regulations and to provide interim management for those areas found to meet the criteria. In August 2016, the BLM determined that four of the nominated areas satisfied the relevance and importance criteria and are considered "potential ACECs". The BLM intends to decide whether to designate all, or a portion, of the potential ACECs when the White River RMP is revised. Until that time, the BLM has committed to consider potential ACECs when discussing potential impacts to resources during implementation (project) level NEPA analyses.

features the BLM has committed to, impacts to resources within the ACECs (and potential ACEC) are expected to be nominal and do not require further detailed analysis.

Cultural and Paleontological Resources

10. Would gather operations, particularly trap sites and corrals, affect cultural or paleontological resources?

Gather operations, particularly trap sites and corrals, may impact cultural and paleontological resources if placed within the vicinity of sites or localities. The presence of animals may cause impact to surface and shallow subsurface material through trampling or exposure. Dust that is generated from gather actives may impact rock art in the area. To avoid impacts to these resources, locations for potential trap sites and corrals would be surveyed and would avoid known cultural sites and paleontological localities.

Fire Management

11. How would the BLM coordinate helicopter gather operations in the event of a wildfire?

All helicopter operations would be conducted in a safe manner and in compliance with Federal Aviation Administration (FAA) regulations 14 CFR S 91.119, BLM IM 2010-164, and BLM IM 2013-068.

If a wildland fire occurs within close proximity to the project area during a gather operation, the use of a helicopter for wild horse management would be temporarily stopped while the BLM evaluated whether to 1) continue with the helicopter gather operation, 2) put the helicopter gather operation on hold, or 3) discontinue all gather operations.

When helicopter gather operations are being conducted, daily notification to the Craig Interagency Dispatch Center (CRC) is required. For bait trapping gather operations, a general notification to the CRC of the location of trapping should be provided during fire season.

5. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

5.1. General Setting & Access to the Project Area

The PEDHMA comprises about 190,130 acres of public and other land. The fencing delineating the PEDHMA boundary was originally constructed in association with grazing allotments. The project area is generally in the center of Rio Blanco County, located approximately 25 miles west of Meeker, Colorado and approximately 50 air miles north and east of Grand Junction, Colorado (see Appendix A, Figure 1). The area is bordered to the west by Colorado State Highway 139, Rio Blanco County Roads 27 and 28 on the south, Rio Blanco County Roads 20, 91, and 68 to the east and Colorado State Highway 64 to the north.

The analysis area is located within the Uinta Basin physiographic region, which is a section of the Colorado Plateau, which in turn is part of the Intermontane Plateaus physiographic division. The analysis area is characterized by valley bottoms and plateaus in the lower elevations and long ridgelines that generally drop into narrow valley bottoms towards the higher elevations until the basin drops off the Cathedral Bluffs into the East Douglas drainage portion. Portions of the area are steep with a few nearly vertical sections but also includes small plateaus scattered throughout. Elevations within the analysis area range from approximately 5,750 ft to 8,600 ft.

The PEDHMA is generally dry with several perennial water sources along with seeps and springs throughout the area with the rights associated with those waters belonging to both private and public entities. Wild horses can and will utilize snow as a water replacement or supplement to available water whenever snow is easily available for their use.

The PEDHMA contains important biological, geological, scenic, and cultural resources (refer to Appendix A, Figure 2). Besides providing forage and habitat for wild horses, the PEDHMA is an important habitat for wildlife species such as migratory birds and big game along with other small mammals. The predominant land uses within the PEDHMA are livestock grazing, energy development, and dispersed recreation including hunting. The BLM has designated several unique areas within the PEDHMA with specialized management actions to protect these resources. Across the PEDHMA are several undeveloped springs and seeps that are used as water sources by the wild horses, as well as developed reservoirs, springs and well.

5.2. Assumptions for Analysis

5.2.1. Traps

Helicopter drive trap method uses traps that consist of two areas of impact associated with gathering horses. These two areas are the corral or trap area and wings that funnel horses to the trap. A large corral or trap area would be approximately one acre in size. This area would have higher impacts as horses are concentrated within pens until they can be loaded into trailers and hauled to an offsite holding facility. The wing area of the trap could encompass approximately 2 acres but is more dispersed use as horses could choose any path to follow within the wings. Bait traps are generally small and would rarely exceed ½ acre in size. Traps would be located in previously disturbed areas, whenever possible, with good access to allow the ability to remove animals via truck and trailers regardless of trapping method. Specific trap locations would be determined at the time of the gather and could be moved dependent on resources that may be impacted at that specific site and timing of the gather. Bait traps would be monitored remotely and/or in person at a minimum of once every 24 hours in accordance with policy. This requirement is to ensures that wild horses that are captured are promptly processed and that non target animals would be released in a timely manner.

5.2.2. Fertility Control Treatments

Application of fertility control treatments are dependent on the type applied and would only be applied to mares that would be returned to the PEDHMA. Application of PZP vaccine and/or GonaCon-Equine could be achieved by hand injection, jabsticks, or remotely delivered by

darting. The first two methods (hand injection and jabsticks) would be used during gather operations while wild horses are processed through holding corrals and chutes. Application of IUDs requires animals to be constrained briefly in a chute (Appendix H).

Application of fertility control vaccines outside of gather operations would be conducted by BLM personnel, BLM approved volunteers, and/or darting contractors. Application of fertility control vaccines could be performed individually or in teams depending on the situation. It is expected that darters could use full size vehicles, UTVs, ATVs, horseback, or walking on foot. Motorized vehicles would be limited to designated roads and trails. Horseback or walking would involve cross country travel. Application of fertility control through darting would occur at any time of year depending on access. This includes day or night operations (with the aid of night vision or infrared equipment) depending on needs and success of darting operations. Application could take place anywhere but to increase the number of mares darted, darting would primarily occur near known water locations, trailing areas, or congregation areas. If the mechanism is shown to be safe and effective, BLM may consider use of an automated GonaCon-Equine dart delivery system (e.g., as developed by Wildlife Protection Management, New Mexico), pursuant to the development of additional SOPs.

5.2.3. Gather Intervals

The timeframe between gathers is highly variable and depends on not only the herd size and BLM's approved budget and spaces in off-range corrals and off-range pastures, but also weather and wild horse behavior. In general, the use of fertility control treatments would be expected to increase the interval between subsequent gathers (i.e., more years between gathers) once the low end of AML is reached, due to a lower overall recruitment and population growth rate.

5.3. Wild Horses

5.3.1. How would selective removal and fertility control affect long-term population management of the PEDHMA herd in regard to age classes, sex ratios, and genetics?

Affected Environment

The selective removal process can impact both the wild horses that are selected to be retained within the PEDHMA and the wild horses that are selected for removal and will be taken out of the PEDHMA. The selective removal process in the long-term is aimed at stabilizing the herd of with a diverse age class of wild horses, a regulated sex ratio that is common to the area, and also for the physical appearance (perhaps color, height, and "body shape" such as quarter horse over draft horse, whether in a stallion or mare).

The most recent gather operation in 2011 was primarily a gate cut (remove as many wild horses as possible to reach an approved number for the removal) of wild horses with only the ability to selectively retain 15 wild horses (9 male and 6 female) of diverse ages, and from various locations within the PEDHMA. The small number of animals returned to the range in 2011 precluded genetic sampling, which was limited, in that year, to animals returned to the range.

BLM was not able to fully utilize the selective removal process or to conduct fertility control treatments of any of the wild horses (mares) returned to the PEDHMA.

Because of the content of the materials and cited literature for wild horse affects from gather and removal operations, and the extensive detail regarding fertility control vaccines and cited literature regarding such, BLM refers the reader to Appendix G, which is a scientific literature review of known and potential effects.

Genetic Diversity and Viability

Blood and hair follicle samples have been collected from the wild horses gathered and/or removed from both inside and outside of the PEDHMA in past years. Analyses of those samples led to conclusions about genetic diversity, historical origins of the herd, and the lack of unique markers, in written reports received in 2002 and 2010. The samples were analyzed by Dr. E. Gus Cothran, previously with Department of Veterinary Science, University of Kentucky, Lexington, KY, now with Equine Genetics Laboratory, Texas A&M University. Currently there is no need to collect genetic samples from wild horses that would be gathered or removed from outside of the PEDHMA. If those are the only animals being gathered from the PEDHMA region, though, excess animals removed from outside the PEDHMA boundaries may be used to sample genetic diversity. Based on the most recent analysis of 2006 samples from the PEDHMA area, Cothran (2010) found no unique alleles, and concluded that observed heterozygosity was "...somewhat low, but not yet at a level that was cause for concern." The herd size has generally grown since 2006, which would tend to reduce the rate of loss of heterozygosity.

Smaller herds (<200 horses) that are isolated tend to lose genetic information through genetic drift. The loss of genetic material has a potentially negative impact on the genetic composition of a small herd. Wild horses located within the PEDHMA are being managed at herd sizes that will allow for a viable healthy breeding wild horse herd, especially what is known about this herd's current diversity and connections to other managed herds. It should be noted that since the establishment of the AML range of 135-235 wild horses in 2002, the estimated population in the PEDHMA at the conclusion of the gather operations in 2002, 2006 and 2011 has been above 200 wild horses or what would be considered the high end of AML usually at or near the 50/50 percent male/female ratio.

Moreover, because of history, context, and periodic introductions, wild horses that live in the PEDHMA herd are not a truly isolated population. The National Academies of Sciences report to the BLM (2013) recommended that single HMAs should not be considered isolated genetic populations. Rather, managed herds of wild horses should be considered as components of interacting metapopulations, connected by interchange of individuals and genes due to both natural and human-facilitated movements. The ancestry of PEDHMA horses is mixed, from a number of domestic breeds. These animals are part of part of a larger metapopulation (NAS 2013) that has demographic and genetic connections with other BLM-managed herds in Colorado, and beyond. Under the action alternatives, management of the PEDHMA herd will continue to use wild horse introductions from other HMAs to augment observed heterozygosity, the result of which will also be to reduce the risk of inbreeding-related health effects. Introducing

a small number of fertile animals every generation (about every 8-10 years) is a standard management technique that can alleviate potential inbreeding concerns (BLM 2010).

The 2013 National Academies of Sciences report included further evidence that the PEDHMA herd is not genetically unusual. Specifically, Appendix F of the 2013 NAS report is a table showing the estimated 'fixation index' (Fst) values between 183 pairs of samples from wild horse herds, based on individual genotypes. The lower the Fst value, the more genetically similar are the two sampled herds. Values of Fst under approximately 0.05 indicate virtually no differentiation. Values of 0.10 indicate very little differentiation. Only if values are above about 0.15 are any two sampled subpopulations considered to have evidence of elevated differentiation (Frankham et al. 2010). The PEDHMA herd had pairwise Fst values that were less than 0.075 with 77 other sampled herds. These results support the interpretation that PEDHMA horses are components in a highly connected metapopulation that includes horse herds in many other HMAs.

So long as there is a gather of an adequate sample size of horses (~25 or more adults, not including foals), BLM would continue to participate in collecting hair follicle samples in order to obtain updated genetic information about the herd within the PEDHMA. In contrast to the 2011 gather, samples under this plan could be collected from horses, regardless of whether the animals will be returned to the range or not; however, if an adequate sample of animals will be returned, sampling would preferentially be from those animals. Decisions on how frequently genetic samples are collected and if/when any wild horses would need to be introduced to the herd within the PEDHMA would be determined based on reported sample analyses, and the timing of follow-up gathers. Generally, wild horses would not be introduced if it would increase the herd size over AML of the PEDHMA. The addition of introduced wild horses from outside of the current population could improve genetic diversity, and/or color (e.g., dun, pinto) and the animal composition (size or overall confirmation) in the herd.

Alternative A (Gather & Fertility Control Treatment) – Direct and Indirect Effects

The ability of the BLM to selectively remove and conduct fertility control treatments on the wild horses located within the PEDHMA is for long-term management of the herd. The selective removal process allows BLM to remove wild horses from the herd based on herd size, age class, sex ratio, and (potentially) genetic criteria. Wild horses that are selected to be returned would be determined by the individual wild horses' biological characteristics, physical appearance, body type, sex, and age (for a diverse age structure). While the BLM is likely to prioritize removal of younger (and more adoptable) wild horses, an unbalanced removal of younger wild horses would be avoided in order to maintain a diverse age structure. The BLM WRFO has in the past conducted both selective removals and fertility control treatments to mares (even though implementation may have been limited in the numbers of wild horses involved).

As BLM begins to implement fertility control within the PEDHMA, the plan is to treat every mare possible, every year, until effectiveness of fertility control treatments begins to result in a noticeable reduction in the population growth rate and the PEDHMA is more in line with the AML. Because of variables including but not limited to the wild horse population, wild horse

gather/removal objectives and frequency of gather/removal operations, and wild horses treated in the field BLM is unable to identify a specific number of mares to be treated over the 10-year plan. Once these objectives are achieved, then the BLM would begin a process to select which mares the BLM would not treat on a given year and which mares produce young in order to continue a diverse age class over the long-term. As BLM gets closer to the AML from conducting the initial gather and subsequent (follow up) gather operations it would be necessary for individual wild horse identification records to be referenced and may take longer for the BLM to make these determinations (wild horses to be treated) in order to have a diverse herd of wild horses. The BLM would continue to have the ability to provide some wild horses for adoptions (younger wild horses less than 5 years old) in the long-term management.

Wild horses receiving fertility control treatments in the field (i.e., darting) would be "stalked" by trained darters at any time of the year. During application of fertility control treatments, these wild horses would experience increased pressure from the presence of humans around them during times of drinking, eating, and resting. However, successful darting has only very limited behavioral effects on the wild horses. Wild horses that receive fertility control treatments enjoy better body condition. For example, if a mare does not have to produce young every year, her body is allowed more time to recuperate from foaling, rearing young (nursing), and are not at risk for carrying a fetus due to subsequent breeding while rearing the foal. This reduction in reproduction demands on wild horse mares may also increase their life span on the range (see Appendix G).

Depending on the initial gather size (number of wild horses to be gathered) and follow-up (subsequent) gathers, the ability to utilize a selective removal process would allow BLM to actively select which wild horses would be retained in the PEDHMA. This would help ensure the retention of a diverse and healthy wild horse herd within the PEDHMA. The long-term goal of gather and removal operations, and fertility control treatments is to maintain healthy wild horse populations within AML on healthy rangelands, maintain a thriving natural ecological balance, and reduce the frequency of necessary gathers and removals along with reduce large population fluctuations between gathers.

There are various forms of fertility control treatments used with the goals of maintaining herds near AML and reducing the recruitment rates. Fertility control measures have been shown to be a cost-effective and humane treatment to slow increase in wild horse populations or, when used in combination with gathers to reduce horse population size. For additional information refer to Appendix G. At, this time the WRFO's preference will be to use GonaCon-Equine (treatment to be done at the optimal time for highest rate of effectiveness) because of the suppression of estrus in the treated mares successful treatment reduces fighting over the mare, and less mounting of the mare, along with increased effectiveness after receiving a booster dose, potentially longer lasting contraceptive effects, and simplicity of application in the field (in contrast to ZonaStat-H, GonaCon-Equine does not need to be kept frozen, and requires no hand-mixing). It is unlikely that every mare would receive fertility control treatments due to the difficulty of gathering or locating wild horses to treat in the field.

Under this alternative, band size would be expected to decrease, competition for mares would be expected to increase, and size and number of bachelor bands would be expected to increase.

Modification of sex ratios for a post-gather population favoring studs would further reduce population growth rates in combination with fertility control.

Long-term management of genetic diversity in the herd is best informed by adequate periodic genetic sampling of individual wild horses. DNA sampling is now easily conducted by pulling hair follicle samples from either the mane or the tail by quickly jerking out the hair with the follicle attached (the sheath of cells and connective tissue which surrounds the roof of a hair) and bagging it by horse identification (male/female), animal color/markings, location gathered, and date gathered. These samples would then be sent to Equine Genetics Laboratory, Texas A&M University. Results should be available within a year. All DNA sampling would be done in accordance with IM 2009-062, or any subsequent update.

For additional information refer to Appendix G. 1. Effects of Gathers on Wild Horses and Burros and G. 3. Effects of Fertility Control Vaccines and Sex Ratio Manipulations.

Alternative B (Gather & No Fertility Control Treatment) – Direct and Indirect Effects

Alternative B would have similar effects as discussed in Alternative A. Direct and indirect impacts to wild horses would be similar to those discussed under Alternative A, however, without the use of fertility control treatments it is possible that gather operations would be expected to occur more frequently so wild horses would experience those stresses (physical and emotional) from frequent gather operations both for wild horses gathered and those that are not gathered. No wild horses would receive fertility control treatments either at the time of release back into the PEDHMA (if selected to be returned) or from being "stalked" for being darted in the field. Individual wild horse life span may shorten as a result of reproduction demands and competition for breeding. The only other way to help reduce the recruitment rate (without fertility control) would be by utilizing a sex ratio adjustment when releasing any wild horses back into the PEDHMA, which is an option. The ratio of male/female would be determined at the time of the gather operation in how many wild horses are successfully gathered and available for return to the PEDHMA; after returning animals to the range, the ratio of males to females may be approximately 55:45 but would not exceed 60:40.

Alternative C (No Action Alternative) – Direct and Indirect Effects

The No Action Alternative would have no direct effects on wild horses. However, there would be indirect effects from an increasing wild horse population (at a rate of around 20 percent annually). No active management actions would influence the age class distribution, sex ratio, or genetic diversity of the herd.

Competition within the herd, as well as with other ungulates, over the various resources (forage, water, space, cover) would increase, and this competition would be expected to increase as the resources are depleted and the wild horse numbers increase. At the current population level and above, BLM would likely see wild horses with reduced body condition, be less able to obtain the necessary resources to survive, particularly in years with limited precipitation. This may be considered a long-term effect. The result could be habitat degradation for wild horses and population declines. BLM is charged with managing wild horse populations, but the outcome for each individual would depend on how each reacts to their living situation under such conditions

of increasing density and decreasing relative resource availability. The NAS (2013) reviewed expected effects of such unregulated population growth.

Under the No Action Alternative there would be no direct or indirect impacts associated with gather operations (utilizing helicopter or bait trapping) or fertility control treatments to the wild horses located within the PEDHMA.

5.3.2. How would gather operations affect wild horses in regard to both physical and emotional stress?

Affected Environment

Impacts to wild horses under Alternative A would be both direct and indirect, occurring on both individuals and the PEDHMA population (entire herd). Disturbance of wild horses by activities associated with any gather are unavoidable. Wild horses must travel over some distance of varying terrain to the trap locations. There is always the slight possibility of injury or mortality during any phase of the gather and removal operation (reviewed in Scasta 2019). Methods and procedures have been identified and refined over time to minimize physical and emotional stress and impacts to wild horses during implementation of wild horse gathers (refer to CAWP at Appendix D and design features).

Most injuries could be sustained once the wild horse has been captured and is either within the trap corrals or holding corrals, or during transport between the facilities and during sorting. These injuries can result from kicks and bites, and from animals contacting corral panels, gates, and/or trailers. Transporting and sorting is completed as quietly, quickly, and safely as possible to reduce the occurrence of fighting and move the horses into the large holding pens to settle in with hay and water. Injuries received during transport and sorting may consist of superficial wounds of the rump, face, or legs. Despite precautions, occasionally a wild horse would rear up or make contact with panels hard enough to sustain a fatal neck injury, though such incidents are rare. There would be no way to reasonably predict any of these types of injuries. On many gathers, no wild horses are injured or die. On some gathers, due to the temperament of the wild horses they are not as calm, and injuries are more frequent. Overall, however, acute injuries and death are not frequent and usually average less than 0.5 percent (Scasta 2019).

During the actual herding of wild horses with a helicopter, injuries are rare, and consist of scrapes and scratches from brush, or occasionally broken legs from horses stepping into a rodent hole. Serious injuries requiring euthanasia could occur in 1-2 horses per every 1000 captured based on prior gather statistics but could vary depending on the wild horses gathered and conditions within the herd. During bait trapping operations wild horses naturally move into trapping facilities leading to reduced risk of injuries, however, injuries may occur once the gate release mechanism is activated which does give off a sound that may solicit a flight response from the wild horses within or around the trap. Any time a wild horse is being gathered there would be a chance that a wild horse could experience an injury from other wild horses, the environment, or making contact with gather equipment (i.e., panels, gates, etc.). Historically the injury rate requiring euthanasia directly related to gather operations is approximately 0.5% on average (Scasta 2019). Injuries are most likely to occur anytime a wild horse is being gathered, loaded, sorted or transported (handled by humans) to be released back into the PEDHMA or to a BLM facility.

The application of fertility control would be controlled, handled, and administered by trained administrators. Application of any IUDs would be conducted by a veterinarian (Appendix H). Increased stress levels would be experienced through the application of the fertility control treatment due to increased handling during gather operations prior to release back into the PEDHMA or during field darting operations. During gather operations, mares selected for fertility control treatment would be the only ones to experience the increased stress during application. During field darting, it is likely that the entire band that the selected mare is associated with would experience increased stress due to being approached, followed or surprised ("stalked") primarily at common wild horse locations (i.e., watering or trailing locations). Injection site injury associated with fertility control treatments is extremely rare in treated mares and may be related to experience of the administrator. Any direct impacts associated with fertility control would be minor in nature and of short duration. The mares would quickly recover once released back into the PEDHMA or shortly after darting. However, the use of fertility control would allow select wild horse mares an opportunity to achieve improved body condition until their next foaling and potential to realize a longer life span within the PEDHMA due to possible complications at birthing a foal, producing foals, and opportunities for fewer gather operations being conducted based on herd recruitment rates.

Under the Proposed Action, foals would be approximately five months of age or older and may be ready for weaning from their dam (mare) if a helicopter gather operation were to take place. Fall and winter timeframes are much less stressful to foals than summer gathers primarily due to the foals being older. However, young foals (less than five months old) are prone to dehydration and complications from stress, the handling, sorting, and transport and increases the chance for them to be rejected by their dam (mother). Extra care would be necessary to care for the younger foals which may mean removing the foal into individual care by approved personnel, volunteers or at a veterinary facility.

For additional information refer to Appendix G. 1. Effects of Gathers on Wild Horses and Burros and G. 3. Effects of Fertility Control Vaccines and Sex Ratio Manipulations.

Alternative A (Gather & Fertility Control Treatment) – Direct and Indirect Effects

BLM recognizes that wild horses could be stressed both physically and emotionally, due to any type of gather operation (Appendix G). These stresses would vary for each individual wild horse, whether gathered or not, however, BLM WRFO has observed that gathered wild horses recover quickly from the physical stress of being gathered and the emotional stress of being removed from bands of other wild horses. Every wild horse experience associated gather stresses on an individual basis. Additionally, mares treated (if selected for retention in the PEDHMA) would be stressed by receiving the fertility control treatment, and those mares darted in the field would individually experience the stress of the activity associated with "stalking" of the mare to be treated. For additional information on stress to wild horses refer to Appendix G. These appendices go into detail regarding the gather operations and the various fertility control treatments. There is no way to remove all of the physical and/or emotional stresses that a wild horse would experience, but it can be reduced by conducting gather and removal operations in the most humane way and regard for the wild horses as possible.

All of the BLM Colorado offices that manage wild horses have conducted both gather operations and fertility control treatments (i.e., Little Book Cliffs Wild Horse Range, and Spring Creek HMAs) and have had success obtaining higher positive results utilizing fertility control treatments, which has aided in maintaining wild horse herd numbers within or near AML, reducing recruitment rates, and frequency of wild horse gather operations.

For the Sand Wash Basin HMA which is similar in size to PEDHMA but lacks the same topographic features and overstory of pinyon-juniper, BLM has conducted gather operations and fertility control treatments more recently and is experiencing some success in reducing the recruitment rate in that HMA utilizing fertility control treatments.

Alternative B (Gather & No Fertility Control Treatment) – Direct and Indirect Effects

Alternative B would have similar effects as discussed in Alternative A, due to gathering and removal of wild horses. Short-term direct and indirect impacts to wild horses would be similar to those discussed under Alternative A. The continuation of the recruitment rate would be reduced if utilizing sex ratio adjustments (as described above in 5.3.1). Wild horse reproduction rates would naturally occur at the approximately 20 percent annually as no fertility control treatments would be applied under this alternative. Gather operations would be expected to occur more frequently so wild horses would continue to experience the physical and emotional stresses from these operations (both those gathered and those that are not gathered). Wild horses would not be treated either at the time of release back into the PEDHMA (if selected for to be returned) and would not experience stresses associated (being stalked) with being darted in the field. An evaluation of the potential effects of sex ratio manipulation is included in Appendix G.

Alternative C (No Action Alternative) – Direct and Indirect Effects

The No Action Alternative would have no direct effects on wild horses in regard to physical and/or emotional stresses due to wild horse gather operations or the fertility control treatments that would not be utilized in order to reduce the wild horse population recruitment rate. However, indirect effects from an increasing wild horse population would create competition (stresses from in-fighting) between each wild horse, between bands of wild horses, and the other ungulates over the various resources (forage, water, space, cover). Appendix G, and the NAS report (2013), consider the potential stress to individual animals that can arise from resource competition under conditions of high population density. If rangelands were allowed to continue to degrade, the wild horses would likely experience reduced body condition, and be less able to obtain the necessary resources to survive (considered a long-term effect). Wild horses unable to obtain the necessary resources to survive would likely expand into areas with available resources or may die of starvation and/or dehydration outside of the PEDHMA. Each wild horse is an individual and the outcome for each would depend on how they react to their living situation.

Under the No Action Alternative, since there would be no gather operations or fertility control treatments conducted there would be no direct or indirect impacts associated with gather operations (utilizing helicopter or bait trapping, or darting operations) to the wild horses located within the PEDHMA.

5.3.3. What are the short-term and long-term health effects of using fertility control on wild horses?

Affected Environment

All fertility control methods affect the health of the treated animals and are associated with potential risks and benefits, including effects of handling, frequency of handling, physiological effects, behavioral effects, and reduced population growth rates (Hampton et al. 2015). Contraception alone does not remove excess wild horses from an HMA population, so gathers are usually needed in order to bring the herd down to a level close to AML.

However, fertility control vaccines primarily rely on reducing the number of females that are fertile in any given year. Considering the available literature, the National Academies of Sciences (NAS) concluded that forms of fertility control vaccines were two of the three 'most promising' available methods for contraception in wild horses and burros (NAS 2013). Further studies since 2013 have clarified that GonaCon-Equine and IUDs are suitable for use in wild horses (see Appendix G).

Fertility control treatments that are initiated within the PEDHMA would be started immediately to aid in providing a reduction in the recruitment rate. There is potential that the BLM would expect to continue long-term use of fertility control treatments to aid in providing the ability to reduce the frequency of gather operations and place the PEDHMA more in line with the AML than currently exists. The BLM understands that there are some potential health effects, both positive and negative, on those wild horses that would receive the fertility control treatment (Appendix G).

The long-term goal is to achieve a thriving natural ecological balance by reducing the number of wild horses in the PEDHMA, to be within the AML, maintain a healthy viable herd within the AML, reduce the number and frequency of wild horse gather operations, and allow the landscape to recover from the over population of wild horses which would also be a positive effect that could be realized while still maintaining the overall herd health (in terms of age structure, ratio male/female, genetic diversity, etc.) of wild horses within the PEDHMA.

For additional information refer to Appendix G.

Alternative A (Gather & Fertility Control Treatment) – Direct and Indirect Effects

BLM recognizes that wild horses may be affected both physically and emotionally from stress due to any type of gather operations and fertility control treatments in the short-term (Appendix G). However, BLM WRFO has observed that gathered wild horses recover quickly from the physical stress of being captured and the emotional stress of being removed from bands of other wild horses.

Although fertility control treatments may be associated with a number of potential physiological, behavioral, demographic, and genetic effects, those impacts are generally minor and transient, do not prevent overall maintenance of a self-sustaining population, and do not generally outweigh the potential benefits of using contraceptive treatments in situations where it is a management goal to reduce population growth rates (Garrott and Oli 2013).

Alternative B (Gather & No Fertility Control Treatment) – Direct and Indirect Effects

The gather and removal operations associated with Alternative B would have similar effects as discussed in Alternative A. Direct and indirect impacts on wild horses would be similar to those discussed under Alternative A. Without the use of fertility control, it is expected that gather operations would occur more frequently. Under this alternative, there would be no stress associated with fertility control treatments. As stated, gather operations would impact (physical and emotional stress) both the individual wild horse as well as the entire herd (bands) of wild horses located within the PEDHMA.

The NAS report noted that sex ratio manipulations where herds have approximately 60 percent males and 40 percent females can expect lower annual growth (recruitment) rates, simply as a result of having a lower number of reproducing mares.

For additional information refer to Appendix G. 3.

Alternative C (No Action Alternative) – Direct and Indirect Effects

The No Action Alternative would have no effects on wild horses from the use of fertility controls. There are currently estimated to be at least 838 wild horses within the PEDHMA. To date, the BLM has not documented a reduced body condition on any of the wild horses (except for perhaps wild horses that are old and/or lame), nor have groups of wild horses had reduced access to water resources, cover, or the ability space in order to have a healthy existence.

The No Action Alternative would have no direct effects on wild horses in regard to physical and/or emotional stresses due to wild horse gather operations or the fertility control treatments. However, indirect effects from an increasing wild horse population would create competition (stresses from in-fighting) between individuals and bands of wild horses, and to the other ungulates over the various resources (i.e., forage, water, space, cover). If rangelands were allowed to continue to degrade, the BLM would expect to see reduced body condition, and possibly the inability of wild horses unable to obtain the necessary resources to survive (considered a long-term effect). This could be especially pronounced during periods of drought. Wild horses unable to obtain the necessary resources to survive would likely expand into areas with available resources or may die of starvation and/or dehydration outside of the PEDHMA. Each wild horse is an individual and the outcome for each would depend on how they react to their living situation.

Under the No Action Alternative, there would no direct or indirect impacts associated with gather operations (utilizing helicopter or bait trapping, or darting operations) or fertility control treatments on the wild horses located within the PEDHMA.

5.4. Water Resources

5.4.1. How would bait (water) trapping affect springs and riparian areas?

Affected Environment

The PEDHMA contains several stream segments that are listed as impaired waters under section 303(d) of the Clean Water Act, including Yellow Creek, Corral Gulch, Barcus Creek, Greasewood Creek, Duck Creek, Douglas Creek, and East Douglas Creek[4]. The impairment parameters within these creeks are due to temperature, sediment load, and heavy metals (pH, Fe, As, NH3, etc.). Aquatic life is the primary affected use for these streams, as well as water supply on the White River and Corral Gulch.

Perennial systems within the PEDHMA that support riparian communities include Yellow Creek, Corral Gulch, Box Elder Gulch, Duck Creek, Stake Springs, and short sections of Douglas Creek which skirts the western boundary. With the exception of Douglas Creek, all other systems are rated as either Functional-at-Risk (FAR) or Non-functional based on the most recent stream assessments. In most cases, wild horses and livestock use are identified as a causal factor contributing to the systems deteriorated condition. Stream segments within the affected watersheds are generally incised, with some segments exhibiting vertical walls, and prone to erosion. Yellow Creek and Douglas Creek are the only fish-bearing streams in the PEDHMA. Both systems persist in supporting discontinuous populations of speckled dace, a native, non-sensitive fish species as well as isolated populations of northern leopard frog, a BLM-sensitive species. Mountain sucker, another BLM-sensitive species is also found in low numbers in the Yellow Creek channel. Data for 23 sites were collected in the HMA using BLM's aquatic assessment, inventory and monitoring (AIM) protocol. The benchmark sediment standard for fines (<2mm) is 41%, and 14 of the 23 sites exceed this standard. Most of the sites indicate moderate or deep entrenchment, and mean August stream temperatures range between 15.1 to 18.3 degrees celcius, with an average of 16.7 degrees C. The stream temperature benchmark is 17 degrees C (minimal), > 17^{o}C or < 21.7^{o}C (moderate), and ≥ 21.7^{o}C (major) departure from an expected condition. Stream temperatures in the HMA are either minimal or moderate.

Alternative A (Gather & Fertility Control Treatment) – Direct and Indirect Effects

Alternative A would potentially impact springs and riparian areas based on the locations of bait (water) trapping and helicopter drive trapping/roping. Increased hoof traffic could adversely affect sedimentation rates, water quality, stream bank characteristics, and fluvial geomorphological characteristics. These affects would potentially be exacerbated in drought conditions.

Best management practices, such as erosion controls, should be used when there are trap sites near the 303(d) listed stream segments. The list of impaired waters is updated every two years; the impairment status of the stream should be checked prior to gather operations and relevant best management practices should be implemented to avoid contributing adversely to whatever

[4] https://coagnutrients.colostate.edu/wp-content/uploads/2016/11/CDPHE-Reg93-303d-List-Impaired-Waters.pdf

parameter is responsible for the listing as an impaired water. Groundwater would not be impacted.

Helicopter drive-trapping and assisted roping: As conditioned by the design features, helicopter drive trapping and roping would have little if any discernable direct influence on aquatic wildlife communities. Safeguards integral with the Proposed Action are intended to reduce the risk of water contamination from helicopter fueling or inadvertent fuel spills. Drive trapping and roping operations, including helicopter staging areas and drive trap/holding areas are generally sited to preclude direct or indirect riparian or aquatic habitat involvement.

Bait trapping: Bait trapping would not be expected to have a substantial influence on aquatic communities. Forage and mineral bait stations would be sited to avoid any direct involvement with the floodplain or riparian/aquatic habitat. As designed, there would be very little potential for water trapping efforts to influence aquatic communities. Proposed trap sites would be surveyed by a BLM Biologist prior to use. If it is determined that trapping efforts would negatively influence aquatic communities, an alternate location would be used.

Gather/trapping operations that may occur in riparian or aquatic habitats that typically or habitually are used by wild horse and are currently impacted by heavy, concentrated wild horse use. Impacts to aquatic communities is not expected to expand or intensify due to trapping or gather operations. In addition, the use of fertility control treatments would be expected to reduce the need and frequency of gather operations over time.

In the long-term, removal of excess wild horses is expected to improve sites with degraded water quality.

Alternative B (Gather & No Fertility Control Treatment) – Direct and Indirect Effects

Direct and indirect impacts to aquatic systems from wild horse gathers and removals would be similar to those discussed under Alternative A. However, gather operations would be expected to occur more frequently without the use of fertility control treatments.

Under this alternative, it is expected there would a faster population rebound compared to Alternative A, which would reduce the duration where water quality parameters are improved due to a lower wild horse population.

Alternative C (No Action Alternative) – Direct and Indirect Effects

The No Action Alternative would have no direct effects on aquatic systems. However, indirect effects from an increasing horse population would have adverse long-term effects on stream impairment due to ever-increasing levels of overuse, as the herd continues to grow.

5.5. Wildlife

5.5.1. Would gather operations or activity associated with fertility control treatments (e.g., darting teams) disturb wildlife during sensitive times of the year?

Affected Environment

Big Game

The PEDHMA supports year-round big game use. Higher elevation (~8,000 – 8,500 ft) pinyon and juniper/mixed mountain shrub/ Doug fir-aspen communities just east of CR 103 are classified by Colorado Parks and Wildlife as mule deer summer range. These ranges typically receive use from May through September. The remainder of the PEDHMA is classified as general winter range with those areas along Douglas Creek, Yellow Creek, Corral and Stake Springs Gulch further delineated into severe winter range. Severe winter range is considered a specialized component of winter range that supports virtually all of a deer herd's population in the most extreme conditions (heavy snowfall, extreme cold temperatures etc.). These winter ranges are generally occupied from October through April.

Raptors/Migratory Birds

Raptor and migratory bird nesting activities are dispersed throughout the analysis area. Mature components of pinyon-juniper woodlands, as well as aspen and Douglas fir woodlands may provide suitable nest substrate for woodland raptors including accipiters, buteos, and stick nesting owl species. These woodlands may also provide substrate for cavity nesters such as flammulated, pygmy and saw-whet owls. Cliffs and rock outcrops in the area may support the nesting functions of golden eagle, red-tailed hawk, prairie and peregrine falcons. Nesting records for potentially affected hawks, eagles, and owls indicate that nest attempts (initiated as early as March) are largely (85 percent) complete and young fledged by early August. There are dozens of known (historic and recent) raptor nests documented throughout the analysis area.

Alternative A (Gather & Fertility Control Treatment) – Direct and Indirect Effects

Helicopter drive-trapping and assisted roping: Extensive and potentially disruptive helicopter operations may be conducted in the analysis area between July 1 – February 28. Helicopter herding represents a high intensity, but transient source of disturbance that would become increasingly concentrated and more frequent near the trap site. Most big game would be on their summer ranges during this timeframe. By July, offspring would be sufficiently mobile to avoid disturbances, with little risk of separation from adults. It is doubtful that dispersed helicopter herding and the initially intense, but short-term and relatively predictable gathering/holding activities would contribute substantially to deterioration in animal fitness at the population level, but big game would tend to avoid or be displaced from areas within 0.5 to 1 mile of this activity. It is anticipated (typical) that displaced animals would return, more or less, to pre-disturbance distribution soon after gather operations at an individual site were complete. Gather related effects would be similar to those discussed above if conducted July through February, except those operations may extend into the winter and late winter months of December through February when adverse weather and forage conditions exert their greatest influence on big game condition (i.e., on severe winter ranges) and when animals are most concentrated (i.e., winter concentration areas). Although disturbances would be short-term, energy expended by animals

repeatedly avoiding gather activity or fleeing close helicopter approach, particularly in more open sagebrush terrain and under snowpack conditions, may influence the subsequent condition (e.g., winter fitness, gestation) of those animals affected. An extended gather strategy, depending on the duration and frequency of operations on these ranges, may have adverse consequences on a relatively small portion of the big game population, but would provide a measure of flexibility in scheduling gathers to avoid important big game hunting seasons.

Helicopter based gather activities may coincide with the later reproductive activities of woodland raptors and migratory birds from early July through mid-August. The relatively infrequent circumstance where active cliff or woodland raptor nests would be subjected to brief and close approach by helicopter activity late in the nesting sequence would not be expected to prompt prolonged nest absences or have any substantive influence on chick survival. Preparation and gathering work in July and August may infrequently involve late nesting attempts of raptors, including golden eagle and BLM-sensitive accipitrine hawks. There may be potential for inadvertent nest trampling/disruption for ground and low shrub nesting bird species. Assuming most nesting activity would have been completed by early July, gather operations in a particular area are not expected to involve many nesting birds. This level of impact would have no discernible influence on population-level abundance or reproductive performance, even at the smallest landscape level. There are no identified impacts resulting from this alternative during winter months when migratory birds are not present within the analysis area.

Bait trapping: Bait trapping would not be expected to have a substantial influence on big game populations or habitat. These operations involve the ground-based capture of individual animals. Although these capture techniques may be used during big game occupation, these operations represent very localized and short-term points of potential disturbance that would have no substantive adverse influence on animal distribution or energetics.

Surveys of suitable raptor nesting habitat would be conducted by WRFO staff on those trap sites proposed for use or development during the breeding period. In the event an active raptor nest is found in the vicinity of trapping operations, these sites would be afforded a buffer adequate to effectively isolate nesting activity from disruptions generated by wild horse trapping operations. Neither bait nor water trapping are expected to have a substantial influence on migratory birds or habitats that support their reproductive functions, as impacts are typically concentrated but localized and occur in previously disturbed/degraded areas.

Fertility Control Treatment: Administration of fertility control treatments would not be expected to have any direct influence on big game or nongame wildlife populations. Indirectly, reductions in the wild horse growth rate would be expected to reduce the need and frequency of gather operations and those impacts to wildlife species discussed above.

Long-term improvements in rangeland condition associated with wild horse removal are expected to far outweigh the short-term and localized impacts associated with gather operations.

Alternative B (Gather & No Fertility Control Treatment) – Direct and Indirect Effects

Direct and indirect impacts associated with gather operations to big game and nongame species and habitats would be similar to those discussed under Alternative A. Gather operations are expected to occur more frequently due to lack of fertility control treatments.

Alternative C (No Action Alternative) – Direct and Indirect Effects

Under the No Action Alternative there would be no direct or indirect impacts associated with gather operations (helicopter drive trapping and assisted roping, bait trapping, or darting operations) to big game and nongame species or habitats that provide forage or cover resources.

5.6. Cumulative Impacts

5.6.1. Cumulative Impacts Analysis Areas

The geographic extent of cumulative impacts varies by the type of resource and impact. The timeframes, or temporal boundaries, for those impacts may also vary by resource. Different spatial and temporal cumulative impact analysis areas (CIAAs) have been developed and are listed with their total acreage in Table 2.

Table 2. Cumulative Impact Analysis Areas by Resource

Resource	CIAA	Total CIAA Acreage	Temporal Boundary
Wild Horses	PEDHMA	Approximately 190,130	10-Year Gather Period
Springs and Riparian Areas	All Located within the PEDHMA	Approximately 190,130	10-Year Gather Period
Big Game and Nongame Wildlife (raptors/migratory birds)	Mule Deer Severe Winter Range	81,902 acres (Big Game) 190,130 acres (Nongame Wildlife)	10-year Gather Period

5.6.2. Past, Present, and Reasonably Foreseeable Future Actions

"Cumulative impacts" are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

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

Past activities which would be expected to contribute to the cumulative impacts of implementing the Proposed Action include past wild horse gather and removal operations (including those with both selective and non-selective (gate cut) removals) that may have altered the wild horse population structure and composition in the PEDHMA. Present and reasonably foreseeable activities within the PEDHMA include livestock grazing, wildlife grazing, hunting, other recreational uses (e.g., OHV riding), continued development of oil and gas infrastructure, and wildland fires. These past, present and reasonably foreseeable activities would be expected to generate cumulative impacts to the Proposed Action by influencing the habitat quality, population/abundance, and continuity for the wild horses within the PEDHMA.

The past events in these areas have created the current wild horse population with its associated structure and composition and have shaped the patterns of use found today in the herd. Continued development of these parameters would be expected to result in small annual changes in herd structure and behavior with small changes in habitat use over time. These impacts would be expected to be marked by relatively large changes occurring rather slowly over time. The WRFO would continue to identify these impacts as they occur and mitigate them as needed on a project specific basis to maintain habitat quality. At the same time, the wild horses in the PEDHMA would be expected to continue to adapt to these small changes to availability and distribution of critical habitat components (food, water, cover, space), so long as there are adequate resources to sustain the herd size present. If the no action alternative is taken and herd size exceeds some undefined threshold, there may be periodic die-offs in the future (NAS 2013). The Proposed Action would contribute to the cumulative impacts of these past and foreseeable future actions by maintaining the herd at AML and establishing a process whereby biological and/or genetic issues associated with herd size reduction or habitat fragmentation would become apparent sooner, and mitigating measures implemented quicker.

5.6.3. Cumulative Effects

Wild Horses

The cumulative effects associated with the gather and removal of excess wild horses include gather-related mortality averaging less than 1 percent of the captured animals, about 5 percent per year associated with transportation, short-term holding, adoption, or sale with limitations and about 8 percent per year associated with long-term holding. This compares with natural mortality on the range, which varies by year and location but may average about 13-16% per year for foals (animals under age 1), about 5-10% percent per year for horses ages 1 to 10, about 10-25% for animals aged 10-20 years, and about 25-50% for animals aged 20-25 years (Garrott and Taylor 1990, Jenkins 1996, Ransom et al. 2016).

Without maintaining wild horses within AML, there would be more situations where forage and/or water are limited and mortality rates in the wild would increase, with the greatest impact to young foals, nursing mares and older wild horses. Wild horses can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their mare, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. As the wild horse overpopulation strains the available resources, the occurrences of orphans, wild horses with injuries, and possible death would likely increase simply due to the number of wild horses within the PEDHMA along with the lack of available resources. Under conditions of higher density, an increased number of injuries due to an increase of individuals fighting with each other could be expected (e.g., males with males over females, females over females sometimes in association with hierarchy of the band, and general strife between individuals and/or within a band, etc.).

Cumulatively, under either Alternative A or B there would be more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple use conflicts in the area over the short and long-term. Long-term management of wild horses (beyond 10 years) would be continuing to the goal of managing wild horses within the established AML range and to help achieve a thriving natural ecological balance and multiple use relationship on public lands in the area.

Effects which would be expected under Alternatives A or B would include continued improvement of upland and riparian vegetation conditions, which would in turn benefit permitted livestock, native wildlife, and an appropriate wild horse population as forage (habitat) quality and quantity is improved over the current level. Benefits from a reduced wild horse overpopulation would include fewer animals competing for limited upland forage, riparian forage, water resources, and impairment on water quality.

Riparian and Water Resources

Livestock grazing and wild horse use are the primary activities that have the greatest potential to influence aquatic/riparian communities. Continued reductions or modifications in upland rangeland conditions associated with season-long wild horse grazing use may lead to increased sediment loads to these systems, which may aggravate downstream sediment delivery to the White River. Over time, heavy sediment deposition in these tributary channel systems would be expected to degrade the suitability of aquatic habitat available for fish, amphibians, beaver,

waterfowl, and aquatic invertebrates. Similarly, continued season-long use of perennial and ephemeral ponds by wild horses would be expected to result in degradation of these sites (reduced water quality, reduction in riparian vegetation as a form of cover, etc.).

Big Game and Nongame Wildlife

Livestock grazing, energy development, wildfires, and wild horse use are the primary activities that have or are currently influencing rangeland conditions that provide nesting, forage and cover resources for big game and nongame species in the analysis area. Under Alternative C, failure to gather horses would result in continued season-long grazing use, exacerbating detrimental effects on wildlife resources, particularly in preferred use areas. Strong reductions in the density and height of herbaceous ground cover from collective ungulate grazing would be expected to depress nest success and or breeding densities, particularly to ground nesting and near-ground nesting bird species, including Greater Sage-grouse (Coates 2020). Progressive deterioration of native ground cover communities, particularly in sage-steppe habitats, would contribute to the cumulative range-wide deterioration and modification/loss of sagebrush habitats from oil and gas developments and the proliferation of invasive annual grasses. Raptor nest habitat would not be directly affected by declining range conditions attributable to unregulated wild horse populations, however, these species would remain vulnerable to the indirect effects of declining range health, namely reduced abundance and diversity of avian and mammalian prey stemming from degraded herbaceous ground cover. Under alternative C, shifts in ground cover composition resulting from inappropriate levels of growing season use by wild horses compounded by authorized livestock use would reduce the suitability and utility of affected shrub-steppe habitat in the longer term and may be irreversible barring extraordinary management intervention.

6. SUPPORTING INFORMATION

6.1. List of Preparers

Name	Title	Area of Responsibility	Date
Jessica Sanow	Hydrologist	Water Resources and Soil Resources	10/13/2020
Lisa Belmonte	Wildlife Biologist	Special Status Animal Species, Riparian Areas and Aquatic Wildlife, and Terrestrial Wildlife	10/13/2020
Heather Woodruff	Ecologist	Special Status Plant Species, Areas of Critical Environmental Concern	10/15/2020
Cody Walton	Archaeologist	Cultural Resources, Paleontological Resources, Native American Religious Concerns	10/14/2020
Luke Smith	Park Ranger	Visual Resources, Lands with Wilderness Characteristics, Recreation, Public Access	10/13/2020
Landon Smith	Fire Management Specialist	Fire Management	10/19/2020
Amy Stillings	Economist	Socioeconomics, Environmental Justice	10/15/2020

Name	Title	Area of Responsibility	Date
Tyrell Turner	Rangeland Management Specialist	Vegetation, Livestock Grazing	10/13/2020
Melissa Kindall	Range Technician, Project Lead	Wild Horse Management	10/16/2020
Heather Sauls	Planning & Environmental Coordinator	NEPA Compliance	10/22/2020

6.2. Tribes, Individuals, Organizations, or Agencies Consulted

Letters describing the proposed action were sent to the Eastern Shoshone Tribes (Wind River Reservation), Ute Indian Tribe (Uintah & Ouray Reservation), Southern Ute Indian Tribe, Ute Mountain Ute Tribe on October 28, 2020.

As the Proposed Action would overlap with previous surface disturbance, this proposal does not require additional consultation with the State Historical Preservation Officer (SHPO) pursuant to Section X.F.5 of the State Protocol Agreement between the Colorado State Director of the BLM and the Colorado SHPO, at this time. Following the completion of the Proposed Action, or at a time when the Proposed Action is determined to occur on surface that has not been previously disturbed, an information letter will be sent to the SHPO, and consultation would be reconsidered.

The BLM maintains a mailing list of approximately 148 interested parties for wild horse management (e.g., individuals or organizations that have that have expressed an interest in the wild horses of the WRFO or have commented on previous NEPA documents associated with the wild horses in the WRFO). The BLM notified the mailing list of the opportunity to review and provide comment on the preliminary EA.

6.3. References

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