PRELIMINARY ENVIRONMENTAL ASSESSMENT

Lahontan Herd Management Area Wild Horse Gather Plan

DOI-BLM-NV-C020-2025-0007-EA

U.S. Department of the Interior
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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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AML Appropriate Management Level
AUM Animal Unit Month
BLM Bureau of Land Management
BOR Bureau of Reclamation
CCD Carson City District
CFR Code of Federal Regulations

CRMP	Consolidated Resource Management Plan
DOD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FLPMA	Federal Land Policy Management Act of 1976, as amended
FONSI	Finding of No Significant Impact
GAO	Government Accountability Office
GIS	Geographic Information Systems
HMA	Herd Management Area
HMAP	Herd Management Area Plan
IBLA	Interior Board of Land Appeals
MUD	Multiple Use Decision
NAGPRA	Native American Graves Protection and Repatriation Act
NDA	Nevada Department of Agriculture
NDEP	Nevada Department of Environmental Protection
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NRC	National Research Council
NRCS	Natural Resources Conservation Service
PFC	Proper Functioning Condition
P.L.	Public Law
RAC	Resource Advisory Council
RFFA	Reasonably Foreseeable Future Action
RMP	Resource Management Plan
SFFO	Sierra Front Field Office
TNEB	Thriving Natural Ecological Balance
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WFRHBA	Wild Free Roaming Horses and Burros Act
WHB	Wild Horse and Burro

1.0 INTRODUCTION

The Bureau of Land Management (BLM) Sierra Front Field Office (SFFO) is proposing to gather and remove excess wild horses from within and outside the Lahontan Herd Management Area (HMA). Excess wild horses are utilizing rangelands within and outside the HMA boundary. This action of gathering and removing is necessary because an overpopulation of wild horses is contributing to overuse of upland and riparian vegetation and is degrading habitat. Native bunch grasses, the primary forage for wild horses, livestock and some wildlife species, are being overgrazed. Overgrazing native bunchgrasses can lead to their loss, depriving wild horses and other grazing animals of the food provided by bunchgrasses.

In compliance with the National Environmental Policy Act (NEPA)[1], this Environmental Assessment (EA) is a site-specific analysis of potential impacts that could result from implementation of the Proposed Action or Alternative. If the BLM determines significant impacts could occur, an Environmental Impact Statement (EIS) would be prepared for the project. If no significant impacts are expected, an EIS would not be required, and a decision would be issued along with a Finding of No Significant Impact (FONSI) documenting the reasons why implementation of the selected Alternative would not result in significant environmental impacts.

Incorporation by reference and tiering provide opportunities to reduce paperwork and redundant analysis in the NEPA process. When incorporating by reference, the author refers to other available documents that cover similar issues, effects, and/or resources considered in the NEPA analysis that is being prepared. Incorporation by reference allows brief summarizations of relevant portions of other documents rather than repeating them.

1.1 Background Information

Since the passage of the Wild Free Roaming Horses and Burros Act (WFRHBA), the BLM has refined its understanding of how to manage wild horse populations. By law, BLM is required to control any overpopulation by removing excess animals once a determination has been made that excess animals are present, and that removal of the excess animals is necessary. Program goals have always been to establish and maintain a "thriving natural ecological balance," which requires identifying the Appropriate Management Level (AML) for wild horses and burros in individual HMAs or Ranges and maintaining herd sizes within the high and low bounds of those AMLs. Over the past two decades, goals have also explicitly included conducting gathers to achieve and maintain wild horse and burro populations within the established AML, to manage for healthy wild horse and burro populations, healthy wildlife populations, and healthy

[1] Executive Order 14154, Unleashing American Energy (Jan. 20, 2025), and a Presidential Memorandum, Ending Illegal Discrimination and Restoring Merit-Based Opportunity (Jan. 21, 2025), require the Department to strictly adhere to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq. Further, such Order and Memorandum repeal Executive Orders 12898 (Feb. 11, 1994) and 14096 (Apr. 21, 2023). Because Executive Orders 12898 and 14096 have been repealed, complying with such Orders is a legal impossibility. The Bureau of Land Management verifies that it has complied with the requirements of NEPA, including the Department's regulations and procedures implementing NEPA at 43 C.F.R. Part 46 and Part 516 of the Departmental Manual, consistent with the President's January 2025 Order and Memorandum.

rangelands. Other management efforts include collecting genetic baseline data to support genetic diversity assessments.

Decreasing the number of excess wild horses in and around the HMA is consistent with the WFRHBA, findings and recommendations from the National Academy of Sciences (NRC 2013), American Horse Protection Association, the American Association of Equine Practitioners, Government Accountability Office (GAO), Office of Inspector General, and BLM policy.

The gather area includes a total of 239,431 acres within and outside the HMA. The HMA, which is 9,687 acres, lies in Lyon County about 35 miles East of Carson City, Nevada (Figure 1). The HMA overlaps the Lahontan grazing allotment. The wild horse AML for the HMA is 7 to 10 wild horses. The AML was set in 1991 in a Herd Management Area Plan (HMAP), Environmental Assessment (EA-NV-030-90-025) and decision (BLM 1991). The AML decision was reaffirmed in 1993 in a Multiple Use Decision (MUD), EA (EA-NV-030-90-025) and decision (BLM 1993) and later reaffirmed in the 2004 HMAP, EA (EA-NV-030-03-030) and decision (BLM 2004). Table 1 below breaks down the AML, the percent and acreage of the HMA overlapped by the grazing allotment, and the horse and livestock AUMs[2].

Table 1: Lahontan Grazing Allotment, Percent of HMA, and Animal Unit Months (AUMs)

Grazing Allotment	Percent of HMA in the Lahontan Grazing Allotment	Acres in HMA	Allocated Wild Horse AUMs in HMA	Allocated Livestock AUMs in HMA	Year last grazed by livestock
Lahontan	100%	9,687	120	120	2024

[2] The 2010 BLM Wild Horses and Burros Management handbook (BLM 2010a; H-4700-1) includes the guideline that wild horses, one year of age or older, count as one (1) Animal Unit. As such, the 120 AUMs for wild horses in the HMA equate to no more than 10 wild horses, for one year.

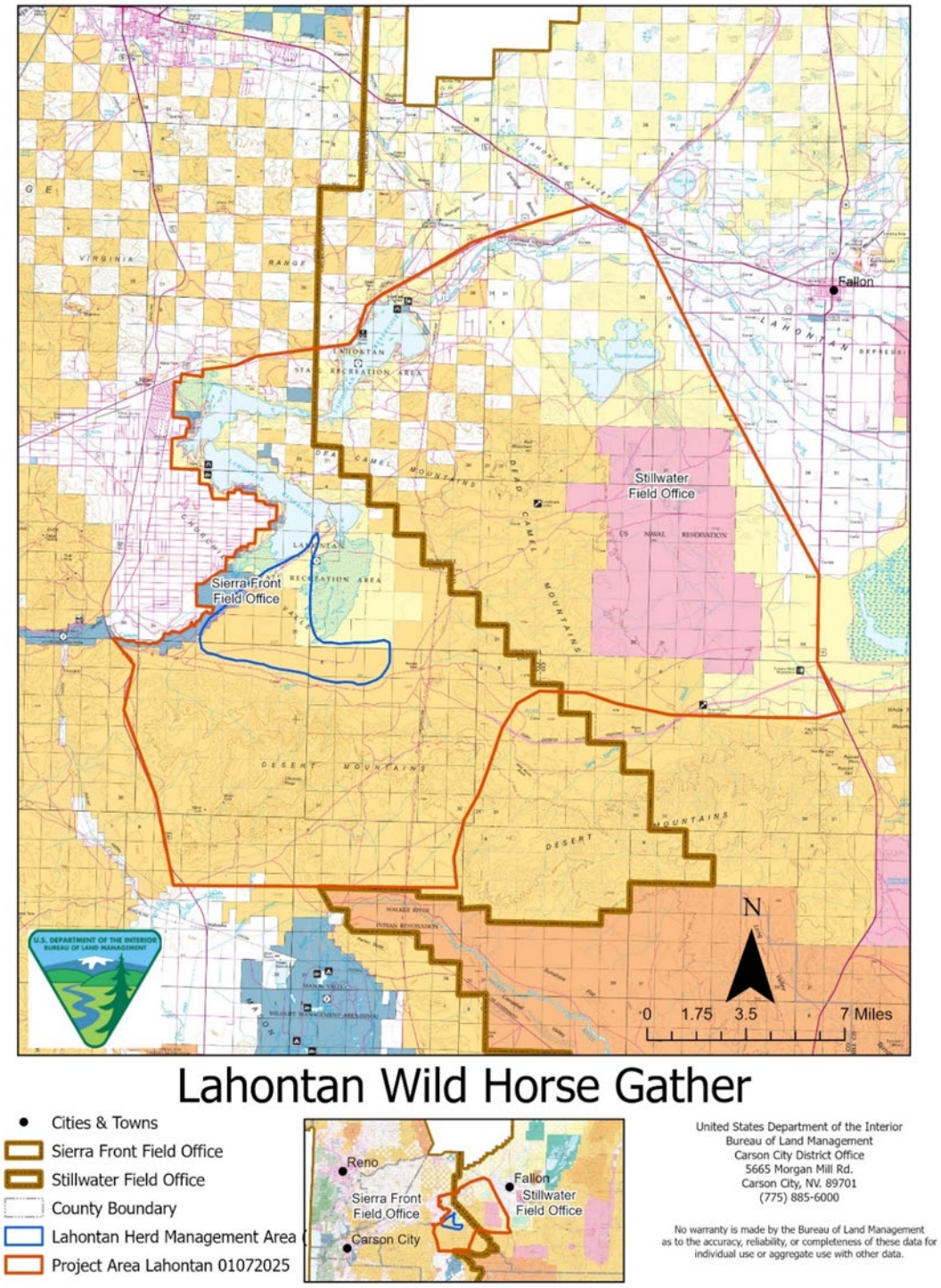

Figure 1: Map of Lahontan Wild Horse HMA and Proposed Gather Area

The HMA contains unique and important biological, geological, scenic, and cultural resources. Besides providing forage and habitat for wild horses, the HMA provides important habitat for wildlife species, including mule deer, and pronghorn. The other predominant land use within the HMA is general recreation (both motorized and non-motorized), including hunting, hiking, and exploring. Domestic livestock grazing is authorized on the Lahontan grazing allotment within a regulated season of use. The full gather area beyond the HMA also overlaps with lands managed by the Bureau of Reclamation (BOR), Nevada State Parks (NSP) and withdrawn Department of Defense (DOD) lands, used by the Navy.

The AML range for the HMA is 7 to 10 wild horses. The AML upper limit is the maximum number of wild horses that BLM has determined the HMA can support while maintaining a thriving natural ecological balance (TNEB) and multiple use relationship on the BLM-administered public lands in the area.[3] Establishing AML as a population range allows for the periodic removal of excess animals (to the low end of the AML range) and subsequent population growth (to the high end of the AML range) between removals. The HMA was established in the Lahontan Resource Management Plan approved in 1985 and the AML was set in 1991 (HMAP; BLM 1991). The AML decision was reaffirmed in 1993 in a MUD (BLM 1993) and later reaffirmed in the 2004 Lahontan Herd Management Area Plan / Capture Plan Update and Environmental Assessment (EA-NV-030-03-030) (HMAP; BLM 2004). The AML was determined based on an in-depth analysis of habitat suitability, resource monitoring, and population inventory data following opportunities for public involvement.

The Carson City District (CCD) published a herd management area plan (HMAP) in 2004 for the HMA that is incorporated by reference into this EA. The HMAP provides background information and continues to serve as a reference because the objectives have remained the same: maintain the population at AML, achieve a TNEB that would promote the potential natural plant community, and proactively manage the horse population.

The most recent gather took place in 2010 and removed 104 wild horses. The 2010 gather removed wild horses from within and outside the HMA (DOI-BLM-NV-C020-2020-0018-EA) (BLM 2010b).

The most recent aerial survey within and outside the HMA occurred March 28, 2024. There were 494 wild horses visually seen and counted at that time, but this number does not include wild horses that were present but not detected during the survey. The simultaneous double observer analyses estimated that there were 518 horses (510 adults, 8 foals) associated with the HMA, though even that number may be an underestimate (Crabb 2024). The adult wild

[3] The Interior Board of Land Appeals (IBLA) defined the goal for managing wild horses (or burro) population in a thriving natural ecological balance as follows: "[T]he 'benchmark test' for determining the suitable number of wild horses on the public range is 'thriving natural ecological balance.' In the words of the conference committee which adopted this standard: 'The goal of WH&B management should be to maintain a thriving ecological balance (TNEB) between WH&B populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.'" *Animal Protection Institute of America*, 109 IBLA 112, 115 (1989) (*citing Dahl v. Clark*, 600 F.Supp.585 (D. Nev. 1984)).

horse population has grown exponentially during the past nine years from 78 in the spring of 2016 to 510 in the spring of 2024 (Lubow 2016, Ekernas 2018, Lubow 2020, Crabb 2022, Crabb 2024) no removals took place during this time span. The average annual growth rate in this herd over that time period has been 10 percent per year. That value is based on the standard method of fitting a linear regression line through the log-transformed time series of adult population size estimates (SOP 7 *in* Griffin et al 2020). Starting with 510 adults in March 2024 and applying a 10 percent annual growth rate for horses, the March 2025 estimate is 561 horses. By fall of 2025 it is likely that approximately 617 horses or more will be present in and near the HMA.

Aerial survey observations are made using the simultaneous double-observer method, in which observers in an aircraft independently observe and record groups of wild horses (Lubow and Ransom 2016). Sighting probabilities for the observers are estimated from the information collected and those are used to estimate the total herd size (Ekernas 2019, Griffin et al. 2020). Direct counts of wild horse and burro populations have been proven to consistently underestimate the true populations (National Research Council (NRC) 2013).

Based on all information available at this time, the BLM has determined that excess wild horses exist within and outside the HMA and need to be removed. This assessment is based on the following factors that include but are not limited to:

1. This area is in poor condition due to overgrazing by wild horses. Perhaps because of the degraded rangelands, the annual growth rate for this wild horse herd is approximately 10 percent, which is low compared to published values for average growth rates (NRC 2013, Ransom et al. 2016). Due to scarce water and forage resources and a wild horse population over AML, wild horses primarily reside outside the HMA. It is not uncommon to see thin horses (Body Condition Score (BCS) 3); poor body condition can result in increased mortality and decreased foal survival.
2. The most recent aerial survey within and outside the HMA occurred March 28, 2024. There were 494 wild horses visually seen and counted at that time, but this number does not include wild horses that were present but not detected during the survey. The simultaneous double observer analyses estimated that there were at least 518 horses (510 adults, 8 foals) associated with the HMA. Given the impacts of overgrazing on vegetative and riparian resources caused by the overpopulation of wild horses, BLM has determined animals above low AML are excess animals that need to be removed, and that the population needs to be maintained at AML over a multiple year gather plan period, to allow sufficient opportunity for degraded resources to recover. Considering that the low end of AML is 7 animals, the BLM has determined that as of March 2024, there are approximately 511 or more excess wild horses within and outside of the HMA that need to be removed. If a gather to bring the population to low AML took place in the fall of 2025, the number of excess horses at that time would be approximately 610. Even statistically corrected estimates for herd size in aerial surveys can lead to underestimates of the true number of animals present (Lubow and Ransom 2016, Crabb 2024). Thus, it is quite possible that the actual number of adult horses present in March 2024 was greater than 510. If that was the case, then when a gather takes place, a greater number of excess wild horses would likely need to be removed to reach the low AML.

3. If the rate of population increase continues to be 10 percent per year, it is estimated 617 or more horses will be present in and near the HMA by fall of 2025.

1.2 Purpose and Need for Action

The purpose of the BLM's action is to remove excess wild horses from within and around the HMA, and to achieve and maintain the wild horse population within the established AML range over a period of time that is long enough for range resources to have an opportunity to recover.

The need for the action is to prevent undue or unnecessary degradation of the public lands associated with excess wild horses, and to restore a TNEB and multiple-use relationship on the public lands, consistent with the provisions of Section 1333 (b) of the WFRHBA.

1.3 Land Use Plan Conformance

This EA is in conformance with the Carson City Field Office Consolidated Resource Management Plan (CRMP) (BLM 2001):

- WHB-1,2. "Remove excess wild horses and burros from public land to preserve and maintain a thriving ecological balance and multiple-use relationship."
- WHB-2, Desired Outcomes #2 – "Maintain sound thriving populations of wild horses and burros within herd management areas."
- WHB-2, Desired Outcomes #3 – "Maintain or improve the condition of public rangelands to enhance productivity for wild horses and burros within herd management areas."
- WLD-2, Desired Outcomes #4 – "Maintain and improve wildlife habitat, including riparian/stream habitats, and reduce habitat conflicts while providing for other appropriate resource uses."

The CRMP called for an updated HMAP to be completed for the HMA, and BLM completed a HMAP in 2004. An updated HMAP is not required before issuing a gather decision to address excess animals. The Interior Board of Land Appeals (IBLA) has held that an HMAP is not a prerequisite to BLM conducting a gather operation (Animal Protection Institute of America, 109 IBLA 112, 127 (1989)), so long as the record otherwise substantiates compliance with the WFRHBA. Based on all available information, BLM has (see section 1.2, above) determined under the WFRHBA that excess wild horses are present and that a gather for removal of excess animals is necessary. While BLM has not updated the existing 2004 HMAP, it is not necessary to do so as the major components of the HMAP have been addressed by BLM, including the establishment of the HMA, AML and objectives for management, monitoring and evaluating whether management objectives are being met (as summarized in this NEPA document), and establishing a multi-year management plan (through the Proposed Action and Alternative being analyzed). The BLM is also providing an opportunity for public participation through the comment period for this EA.

1.4 Relationship to Laws, Regulations, and Other Plans

The Proposed Action complies with the following federal, state, and local plans:

- Executive Order 13175 of Nov 6, 2000, Consultation and Coordination with Indian Tribal Governments;
- Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.);
- Fundamentals of Rangeland Health (43 CFR [Code of Federal Regulations] 4180);
- Migratory Bird Treaty Act, 1918, as amended, and Executive Order 13186;
- National Environmental Policy Act of 1969, as amended;
- National Historic Preservation Act of 1966, as amended;
- Public Rangelands Improvement Act of 1978;
- State Protocol Agreement between the BLM, Nevada and the Nevada Historic Preservation Officer (2014);
- Special Status Species Manual and Direction for State Directors to Review and Revise Existing Bureau Sensitive Species Lists (Instruction Memorandum (IM) Number (No.). NV-IM-2024-003);
- Taylor Grazing Act of 1934, as amended;
- Wild Free-Roaming Horses and Burros Act of 1971, as amended;
- Protection, Management, and Control of Wild Free-Roaming Horses and Burros (43 CFR 4700);
- Wild Horses and Burros Management Handbook (H-4700-1).
- NEPA statute at 42 USC 4321 and the 2023 FRA (Title III: Sec 321, Sec 106, Sec 107, Sec 108, Sec 109, Sec 110, and Sec 111)
- DOI NEPA regs at 43 CFR 46, and
- Part 516 of the Department Manual, which includes:
    - 516 DM 1: Protection and Enhancement of Environmental Quality,
    - 516 DM 2: Relationship to Decision Making,
    - 516 DM 3: Managing the NEPA Process,
    - 516 DM 4: Review of EISs and Project Proposals by Other Federal Agencies
    - 516 DM 11: Bureau of Land Management

Refer to Appendix A for 'Additional Federal Laws and Regulations, Plans, Programs, and Policies'.

The Proposed Action is consistent with the applicable regulations at 43 CFR 4700 and is also consistent with the WFRHBA, which mandates that BLM "*manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands*," "*prevent the range from deterioration associated with overpopulation*," and "*remove excess wild horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area."* Additionally, federal regulations at 43 CFR 4700.0-6 (a) state that, "*Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat*."

- 43 CFR 4710.4: Constraints on management. "Management of wild horses and burros shall be undertaken with the objective of 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: "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."
- WFRHBA 1333 (b)(1) states: "The purpose of such inventory shall be to: make determinations as to whether and where an overpopulation exists and whether action should be taken to remove excess animals; determine appropriate management levels or wild free-roaming horses and burros on these areas of public land; and determine whether appropriate managements should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural control on population levels)."
- WFRHBA 1333 (b) (2) (iv) states that once the Secretary determines "…that an overpopulation exists on a given area of the public lands and that action is necessary to remove excess animals, he shall immediately remove excess animals from the range so as to achieve appropriate management levels."

The Animal Protection Institute, 118 IBLA 75 (1991), the IBLA found that under the Wild Free-Roaming Horses and Burros Act of 1971 (Public Law 92-195) "excess animals" must be removed from an area in order to preserve and maintain a TNEB and multiple-use relationship in that area. Regulations at 43 CFR 4700.0-6(a) also direct that wild horses be managed in balance with other uses and the productive capacity of their habitat. The Proposed Action is in conformance with federal statute, regulations, and case law.

1.5 Monitoring

Key forage utilization data was collected eight times since 2017 (Table 7). The Lahontan HMAP states Allow no more than 55 percent utilization on key grass species (Indian ricegrass, Idaho fescue, needlegrass) and 40 percent on interim grass species (bottlebrush squirreltail and bluegrass) yearlong. These resource objectives are not being met. Utilization on Indian ricegrass in most years has been measured as Heavy (61%-80%), Severe (81%-94%) and Extreme (95%-100%) over large parts of the HMA. The most recent data collected during the fall of 2024 indicated utilization levels ranged from 94 percent to 97 percent on Indian ricegrass. Wild horses are currently using more than their forage allocation within HMA and are also utilizing forage from a large area outside of the HMA. Utilization levels above moderate do not allow plant species to complete their annual growth cycle. This type of excessive grazing, weakens roots, reduces plant vigor and prevents the completion of reproductive cycles. Heavy to extreme utilization of vegetation in some areas is contributing to the reduction of perennial forage grasses. Overutilization of key perennial grass species is also a contributing to unhealthy rangeland conditions, reduced vegetative cover leads to increased bare ground, soil instability and erosion. Increased bare ground provides areas for invasive species to establish. Reduction in perennial plant species and shifts in functional structural groups also lead to changes in water and nutrient cycling. The heavy to extreme utilization of vegetative resources by a wild horse population over AML within the HMA indicates that some of the HMAP objectives are not being met due to the current wild horse population.

1.6 Decision to Be Made

The Authorized Officer would determine whether to implement all, part, or none of the Proposed Action as described in Section 2.3 to manage wild horses within the HMA. The Authorized Officer's decision may select gather methods, numbers of horses gathered and removed. The gather plan decision would not set or adjust AML, nor would it adjust livestock use, as these were set through previous land use planning and multiple use or grazing decisions, both requiring adherence to regulatory processes in 43 CFR Part 4100 and 4700.

1.7 External Involvement

The 30-day public scoping period was from December 11, 2024 to January 10, 2025. Mailings included the BLM Media, Nevada State Clearinghouse distribution, Sierra Front Field Office NEPA, and the CCD Office Wild Horse and Burro email lists. Individuals on these lists included local and state governments, media, and members of the public. Twenty-six comments were received during this comment period from members of the public and organizations. All comments were received through the BLM National NEPA Register. The BLM considered all scoping comments during the development of this EA.

Public hearings are held annually regarding the use of motorized vehicles, including helicopters and fixed-wing aircraft, in the management of wild horses and burros. During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of the motorized vehicles. The BLM hosted its annual public hearing on the use of motorized vehicles in the management of wild horses and burros on May 23, 2024, via Zoom. The stream was also hosted live on BLM.gov/live. Twenty-three public comments were provided via audio, with more than 60 written comments sent via email. Most were not in support of the use of helicopters and the gathering of excess wild horses. Their comments were entered into the record for this hearing. Standard Operating Procedures were reviewed in response to these concerns and no changes to the SOPs were indicated based on this review.

The use of the helicopters and motorized vehicles has proven to be a safe, effective, and practical means for gather and removal of excess wild horses and burros from the range. Since 2006, Nevada has gathered over 40,000 animals with the total mortality of approximately 1.1% (of which approximately 0.5% was gather related), which is very low when handling wild animals. BLM also avoids gathering wild horses prior to or during the peak of foaling and does not conduct helicopter removals of wild horses during March 1 through June 30.

In addition to the scoping letters, Executive Order 13175 stipulates that during the NEPA process, federal agencies must consult tribes identified as being directly and substantially affected; to provide tribal entities the opportunity to identify ethnographic resources and the potential effects the project may have on Native American interests. The BLM has identified the Fallon Paiute-Shoshone Tribe, and the Walker River Paiute Tribe as having traditional territory that overlaps with the project area, as well as being users of natural and cultural resources within the project area. The BLM sent scoping letters on December 10, 2024 and notification letters on February 26, 2025 to both the Fallon Paiute-Shoshone Tribe and the Walker River Paiute Tribe. The notification letters included a description of proposed gather and an invitation for tribal

consultation. The BLM has not received responses from the Tribes; however, coordination with the Tribes is ongoing and will continue through the decision and implementation.

2.0 DESCRIPTION OF THE ALTERNATIVES

2.1 Introduction

This section describes the Proposed Action and Alternative, including alternatives that were considered but eliminated from detailed analysis. For this EA, two Alternatives are analyzed in detail including the preferred Alternative (Table 2).

The action Alternative was developed in response to the identified resource issues and the purpose and need, as described in Section 1.2. A summary description of alternatives analyzed in detail is as follows:

Table 2: Summary of Alternatives

Alternatives	Title	Description
Alternative 1	Proposed Action: Remove excess wild horses to Low-AML	Initial gather(s) to remove all excess wild horses to reach low AML as expeditiously as possible through the initial gather, and if necessary, a follow-up gather or gathers over the life of the plan to achieve and maintain the population within AML range. Follow-up gathers to remove excess wild horses to achieve low AML shall be conducted as promptly as appropriate to allow sufficient time for the animals to settle after a helicopter gather and to provide for a safe, efficient, and effective follow-up gather operations[4]. Alternative 1 would not implement population control measures nor adjust sex ratios within the gather area.
Alternative 2	No Action	Would not achieve the identified purpose and need. However, it is analyzed in this EA to provide a basis for comparison with the Proposed Action and to assess the effects of not conducting a gather. The No Action Alternative would be in violation of the WFRHBA, which requires the BLM to immediately remove excess wild horses or burros when a determination is made that excess animals are present, and that action is necessary to remove excess animals and maintain a TNEB.

[4] While the BLM's plan would be to immediately remove all excess wild horses above low AML, it is possible that a single gather would not achieve this because of limitations such as on gather efficiency, logistics, space capacity for holding removed animals, or contractor availability. The result would be a need to conduct a follow-up gather or gathers to achieve low AML.

2.3 Alternative 1 (Proposed Action)

The BLM would immediately gather and remove excess wild horses both within and outside the HMA to achieve and maintain AML. This would allow BLM to achieve management goals and objectives of attaining a herd size that is at the low range of AML and achieve a thriving natural ecological balance on the range as identified within the WFRHBA. The estimated population would be 610 or more wild horses by the Fall of 2025 and the low end of AML is set at 7 wild horses.

It is expected that gather efficiencies and holding space during the initial gather may not allow for the removal of sufficient excess animals during the initial gather to reach low AML. Based on BLM's experience over the past decades, there are a number of logistical and operational factors that can affect BLM's ability to achieve low AML with a single gather, including (But not limited to) that: gather efficiency is typically less than 80%, which reduces the likelihood that all excess animals can be removed in a single operation when the population significantly exceeds AML; the likely population undercount (Crabb 2024) can result in additional excess wild horses being identified in a follow-up inventory even if the targeted numbers of estimated excess wild horses have been removed; the wild horses become more challenging to catch as the helicopter gather operation progresses and they learn to evade the helicopter, weather conditions may impeded achieving the targeted removal numbers, limited availability of contractors with the expertise needed to gather animals safely can impact the ability to continue with a gather until all excess animal have been removed. For this reason, if low AML cannot be achieved through a single initial gather, a follow-up gathers may be necessary to achieve low AML. The BLM would return to the HMA to remove the remaining excess horses in follow-up gathers as necessary. Follow-up gathers would be scheduled as expeditiously as feasible, considering all factors including logistics, contractor availability, space capacity at holding facilities and funding. In both initial and follow-up gathers, BLM would aim to remove excess wild horses necessary to achieve and maintain the low range of AML.

The management objectives for the Lahontan HMA would be to manage the wild horse population within the AML range to achieve and maintain TNEB. BLM would achieve this through gathering and removing excess wild horses from within and outside the HMA to the low AML. Removal of excess wild horses would be prioritized as follows: from areas where public health and safety issue have been identified; private land and non-HMA (which also includes Nevada State Park, Bureau of Reclamation and withdrawn Department of Defense Lands managed by the Navy) (Figure 1) areas where resource degradation/deficiency has been identified; within HMA from areas where resource degradation or habitat issues are most pressing; and where needed to reach and maintain low AML. Due to lack of water and forage resources within the HMA wild horses have strayed and primarily reside outside the HMA in the surrounding area. Selective removal procedures would be prioritized once low AML is achieved and would remove younger excess wild horses within the HMA to keep the population from exceeding the high range of AML so that degraded range resources have sufficient opportunity for recovery, and allow older, less adoptable wild horses, to be released back to the HMA. All of

the animals gathered from outside the HMA boundary would be removed and transported to BLM off-range corrals where they would be prepared for adoption and/or sale to qualified individuals, or for off-range pastures.

Population inventories and routine resource/habitat monitoring would continue to be completed every two to three years to document current population levels, growth rates, and areas of continued resource concerns (horse concentrations, riparian impacts, over utilization etc). Funding limitations and competing national priorities may impact the timing and ability of gather operations.

While in the temporary holding corral, wild horses would be identified for removal or release based on age, sex, and/or other characteristics. As part of periodic sampling to monitor wild horses' genetic diversity in the HMA, hair follicle samples would be collected from a minimum of 25 horses from the HMA. Samples would be collected for analysis to assess the levels of observed heterozygosity, which is a measure of genetic diversity (BLM 2010), within the HMA and may be analyzed to determine relatedness to established breeds and other wild horse herds.

Management Action
The primary gather techniques would be the helicopter-drive and water/bait trapping. The use of roping from horseback could also be used when necessary. Multiple, temporary gather sites (traps) would be used to gather wild horses both from within and outside the HMA. In addition to public lands, private property or other state/federal agency lands may be utilized for gather sites and temporary holding facilities (With the landowner's permission) if necessary, to ensure accessibility and/or based on prior disturbances. Use of private land would be subject to Standard Operating Procedures (SOPs) (Appendix B) and to the written approval/authorization of the landowner.

Any trapping activites would be scheduled in locations and during time periods that would be most effective to gather sufficient numbers of animals to achieve management goals for the areas being gathered. The most efficient gather technique would be chosen as determined by the gather needs of the specific area.

Temporary trap and holding sites would be no larger than 0.5 acres. Temporary holding sites could be in place for up to 60 days or more depending on length of the gather operation. Bait or water trapping sites could remain in place up to one year. The exact location of the trap sites and holding sites are determined by the contractor in coordination with the BLM, based on site-specific factors, and may not be determined until immediately prior to the gather because the location of the animals on the landscape is variable and unpredictable.

Trap and holding sites are often located in previously disturbed areas, but if a new site needs to be used, the BLM would conduct a cultural inventory prior to using such a site. If cultural resources are encountered, the location of the gather/holding site would be adjusted to avoid all cultural resources. All gather sites, holding facilities, and camping areas on public lands would be recorded with Global Positioning System equipment, given to the Carson City District Office Invasive, Non-native Weed Coordinators, and then assigned for monitoring and any necessary

treatment during the next several years for invasive, non-native weeds. All gather and handling activities (including gather site selections) would be conducted in accordance with SOPs in Appendix B.

Helicopter Drive Trapping

The BLM would utilize a contractor to perform the gather activities in cooperation with the BLM. The contractor would be required to conduct all helicopter operations in a safe manner and in compliance with Federal Aviation Administration regulations found in 14 CFR § 91.119. For safety purposes, any public observers must be located a minimum of 1,000 feet from the areas where the helicopter may be herding animals or flying over.

Helicopter drive trapping may be needed to meet management objectives to capture the highest percentage of wild horses possible. The appropriate gather method would be determined by the Wild Horse and Burro Specialist based on the location, accessibility of the animals, local terrain, vegetative cover, and available sources of water and forage. Roping from horseback could also be used when necessary. Based on wild horse locations in this area, it is estimated that multiple trap sites may be used during trapping activities.

Helicopter drive trapping involves use of a helicopter to herd wild horses into a temporary trap. The SOPs outlined in Appendix B would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts or injury to the wild horses. Utilizing the topography, traps would be set in areas with high probability of horse access. This would assist with capturing excess wild horses residing nearby. Traps consist of a large catch pen with several connected holding corrals, jute-covered wings, and a loading chute. The jute covered wings are made of fibrous material, not wire, to avoid injury to the horses. The wings form an alleyway used to guide the horses into the trap. Trap locations are changed during the gather to reduce the distance that the animals must travel. A helicopter is used to locate and herd wild horses to the trap location. The pilot uses a pressure and release system while guiding them to the trap site, allowing them to travel at their own pace. As the wild horse herd approaches the trap the pilot applies pressure and a “pilot” horse is released, guiding the wild horses into the trap. Once horses are gathered, they are removed from the trap and transported to a temporary holding facility where they are sorted by sex and age

The BLM may find it necessary to issue a temporary closure and restriction order, in order to ensure that gather operations will be effective and to protect the safety of the contractors, employees, public and the wild horses during gather operations. Any such closures will comply with the public notification process outlined in the BLM’s regulations at 43 CFR 43 C.F.R. § 8364.1. The BLM will limit any such closures to the appropriate area needed to conduct gather operations and may move the closed/restricted area from capture site to capture site to ensure access to public lands when operations are not occurring near the capture site or temporary holding corrals. Where possible, closed areas may be open to traffic when directed by a pilot car.

During helicopter drive trapping operations, BLM would ensure that an Animal and Plant Health Inspection Service (APHIS) veterinarian or contracted licensed veterinarian is onsite or on call to examine animals and make recommendations to BLM for care and treatment of wild horses. BLM staff would be present on the gather to observe animal condition, ensure humane treatment of wild horses, and ensure contract requirements are met.

Bait/Water Trapping

Bait and/or water trapping would be used as appropriate to gather wild horses efficiently and effectively. Bait and water trapping may be utilized when wild horses are in an area where there are limited resources (food or water). The use of bait and water trapping, though effective in specific areas and circumstances, would not be timely, cost-effective, or practical as the primary or sole gather method for the HMA. However, water or bait trapping could be used as a supplementary approach to achieve the desired goals of Alternatives 1 throughout portions of the HMA and gather area. Bait and/or water trapping generally requires a longer window of time for success than helicopter drive trapping. Although the trap would be set in a high probability area for capturing excess wild horses residing within the area and at the most effective time periods, time is required for the horses to acclimate to the trap and/or decide to access the water/bait.

Trapping involves setting up portable panels around an existing water source or in an active wild horse area, or around a pre-set water or bait source. The portable panels would be set up to allow wild horses to go freely in and out of the corral until they have adjusted to it. When the wild horses fully adapt to the corral, it is fitted with a weighted gate system that closes when the horses enter the corral. The period of adaptation for the animals creates a low stress trapping method. During this acclimation period, the wild horses would experience some stress due to perceived access restriction to the water/bait source by the panels (see Water and Bait Trapping Standard Operation Procedures (SOPs), Appendix B).

Gathering excess horses using bait/water trapping could occur at any time of the year and traps would remain in place until the target numbers of animals are removed. As the proposed bait and/or water trapping in this area is a lower stress approach to gathering wild horses, such trapping can continue into the foaling season without harming the mares or foals. Due to the nature of the bait and water trap method, wild horses are reluctant to approach the trap site when there is too much activity. Therefore, only essential gather operations personnel are able to be at the trap site during gather operations and there is generally no public observation allowed. The BLM may issue a closure and restriction order in accordance with 43 C.F.R. § 8364.1 in order to ensure that the gather is effective and to protect wild horse and public safety.

Gather-related Temporary Holding Facilities (Corrals)

Wild horses that are gathered would be transported from the gather sites to a temporary holding corral. At the temporary holding corral wild horses would be sorted into different pens. The horses would be provided good quality hay and water. At the temporary holding facility, a veterinarian, when present, would provide recommendations to the BLM regarding care and treatment of recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness, or serious physical defect (such as severe tooth loss or wear, club foot, and other severe congenital abnormalities) would be humanely euthanized using methods

acceptable to the American Veterinary Medical Association (AVMA) (i.e., BLM Permanent IM 2021-007 or the most current policy; BLM 2021b).
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Herd health and characteristics data would be collected as part of continued monitoring of the wild horse herds. Genetic diversity baseline data would be collected to monitor the genetic diversity of the wild horses within the combined project area. Additional samples may be collected to analyze ancestry.

Gathered wild horses would be transported to BLM off-range corrals where they would be prepared for adoption and/or sale to qualified individuals or transfer to off-range pastures or other disposition authorized by the WFRHBA.

Transport, Off-range Corrals, and Adoption Preparation
All gathered wild horses would be removed and transported to BLM off range corrals (ORCs) where they would be inspected by facility staff (and if needed by a contract veterinarian) to observe health conditions and ensure that the animals are being humanely cared for.

Those wild horses removed from the range would be transported to the receiving off-range corrals (ORCs, formerly short-term holding facilities) in a gooseneck stock trailer or straight-deck semi-tractor trailers. Trucks and trailers used to haul the wild horses would be inspected prior to use to ensure wild horses can be safely transported. Wild horses would be segregated by age and sex when possible and loaded into separate compartments. Females and their unweaned foals may be shipped together. Conditions for transportation of recently captured wild horses are subject to standards of the BLM Comprehensive Animal Welfare Program (CAWP) (BLM IM 2021-002; BLM 2021a).

Upon arrival, recently captured wild horses are offloaded by compartment and placed in holding pens where they are provided good quality hay and water. Most wild horses begin to eat and drink immediately and adjust rapidly to their new situation. At the ORC, a veterinarian provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness, or serious physical defect (such as severe tooth loss or wear, club foot, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the AVMA. Wild horses in very thin condition, or animals with injuries, are sorted and placed in hospital pens, fed separately, and/or treated for their injuries. Recently captured animals in very thin condition may have difficulty transitioning to feed. some of these animals may be in such poor conditions that it is unlikely they would have survived if left on the range. Similarly, some females may lose their pregnancies. Certain management techniques would be taken to help females make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.

After recently captured wild horses have transitioned to their new environment, they are prepared for adoption, sale, or transport to ORPs. Preparation involves freeze marking the animals with a unique identification number, vaccination against common diseases, , microchipping, and

deworming. At ORC facilities, a minimum of 700 square feet of space is provided per animal. Mortality at ORCs averages approximately 5% per year (GAO, 2008), and includes animals euthanized due to pre-existing conditions; animals in extremely poor condition; animals that are injured and would not recover; animals which are unable to transition to fee; and animals which are seriously injured or accidentally die during sorting, handling, or preparation. ORCs may be BLM-owned or contracted private facilities.

Adoption
Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall for horses. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horses for one year and inspects the horses and facilities during this period. After one year, the applicant may take title to the horses, at which point the horses become the property of the applicant. Adoptions are conducted in accordance with 43 CFR Subpart 4750.

Sale with Limitations
Buyers must fill out an application and be pre-approved before they may purchase a wild horse or burro. A sale-eligible wild horse is any animal that is more than 10 years old or has been offered unsuccessfully for adoption at least three times. The application also specifies that buyers cannot sell the horse to anyone who would sell the animals to a commercial processing plant. Sales of wild horses are conducted in accordance with the 1971 WFRHBA and congressional limitations.

Off-Range Pastures
When shipping wild horses for adoption, sale, or Off-Range Pastures (ORPs), the animals may be transported for up to a maximum of 24 hours. Immediately prior to transportation, and after every 24 hours of transportation, animals are off-loaded and provided a minimum of 8 hours on the-ground rest. During the rest period, each animal is provided access to unlimited amounts of clean water and two pounds of good quality hay per 100 pounds of body weight with adequate space to allow all animals to eat at one time. Mares and sterilized stallions (geldings) are segregated into separate pastures. Although the animals are placed in ORP, they remain available for adoption or sale to qualified individuals; and foals born to pregnant mares in ORP are gathered and weaned when they reach about 8-12 months of age and are also made available for adoption. The ORP contracts specify the care that wild horses must receive to ensure they remain healthy and well-cared for. Handling by humans is minimized to the extent possible although regular on-the-ground observation by the ORP contractor and periodic counts of the wild horses to ascertain their well-being and safety are conducted by BLM personnel and/or veterinarians.

Euthanasia or Sale without Limitations
Under the WFRHBA, healthy excess wild horses can be euthanized or sold without limitation if there is no adoption demand for the animals. However, while euthanasia and sale without limitation are allowed under the statute, for several decades Congress has prohibited the use of appropriated funds for this purpose. If Congress were to lift the current appropriations restrictions, then it is possible that excess horses removed from the HMA over multiple years

could potentially be euthanized or sold without limitation consistent with the provisions of the WFRHBA.

Any old, sick, or lame horses unable to maintain an acceptable body condition (greater than or equal to a BCS of 3) or with serious physical defects would be humanely euthanized either before gather activities begin or during the gather operations as well as within ORCs. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy (Permanent Instruction Memorandum 2021-007 or the most current edition; BLM 2021b).

Public Viewing Opportunities
Opportunities for public observation of the gather activities on public lands would be provided, when and where feasible, consistent with current policy and the Visitation Protocol and Ground Rules for Helicopter WH&B Gathers within Nevada (Appendix E). As part of public viewing of the gather operations, BLM will establish observation locations that reduce safety risks to the public during helicopter gathers (e.g., from helicopter-related debris or from the rare helicopter crash landing, or from the potential path of gathered wild horses), to the wild horses (e.g., by ensuring observers would not be in the line of vision of wild horses being moved to the gather site), and to contractors and BLM employees who must remain focused on the gather operations and the health and well-being of the wild horses. As feasible, observation locations would be located near gather or holding sites, although safety, gather efficiency, terrain, and land status factor into how close observation locations will be. All observation locations would be subject to the same cultural resource requirements as gather and holding sites.

During water/bait trapping operations, spectators and viewers would be prohibited as it would impact the contractor's ability to capture wild horses. Only essential gather operation personnel would be allowed at the trap site during operations.

2.4 Alternative 2 (No Action)

Under Alternative 2, no wild horses would be gathered or removed from within and around the HMA and no population control methods would be used to control the size of the wild horse population within the HMA. Wild horses are not a 'self-regulating species,' so in the absence of management actions to limit the herd size, the wild horse population would increase to a point where the resources are depleted resulting in the irreversible loss of native vegetation, a loss of wildlife habitat (including riparian habitat), and eventually the potential for periodic large-scale die-offs of the wild horses themselves (NRC 2013). During 2024, ~98 percent of the animals appeared to be "3 Thin" to "4 Moderate Thin" on the Henneke Body Condition Scoring System (Henneke et al. 1983). Most of these horses are expected to recover in the spring but the low body scores are an indication of over grazing and lack of forage.

2.5 Alternatives Considered but Dismissed from Detailed Analysis

1. **Exclusive Use of Bait and/or Water Trapping**

This Alternative involves the use of bait (feed) and/or water to lure horses into traps as the primary gather method. It would not be timely, cost-effective, or practical to use bait and/or

water trapping as the primary gather method due to the size of the HMA and because the number of water sources on lands outside the HMA would make it almost impossible to restrict wild horse access to the selected water trap sites to capture enough excess horses to reach low AML. Bait and/or water trapping may be used in strategic locations to assist in removals. As a result, this Alternative was dismissed from detailed analysis as the primary or exclusive capture method.

2. Remove or Reduce Livestock within the Lahontan HMA

This Alternative would involve no removal of excess wild horses and would instead remove or reduce authorized livestock grazing instead of gathering and removing wild horses within the HMA. This Alternative was not considered in detail because it is contrary to previous decisions which allocated forage for livestock use and would not be in conformance with the existing land use plan, nor does it achieve the purpose and need for this EA. Livestock grazing can only be reduced or eliminated through provisions identified within regulations (43 CFR 4100) and must be consistent with multiple use allocation set forth in the CRMP. This Alternative would exchange use by livestock for use by wild horses and would eliminate or reduce grazing to shift forage use to wild horses, which would not be in conformance with the CRMP and is contrary to the BLM's multiple-use mission as outlined in FLPMA. The BLM is required to manage wild horses and burros in a manner designed to achieve a TNEB between wild horse and burro populations, wildlife, livestock, and other uses.

Information about Congress' intent is found in the Senate Conference Report (92-242) which accompanies the 1971 WFRHBA (Senate Bill 1116): "The principal goal of this legislation is to provide for the protection of the animals from man and not the single use management of areas for the benefit of wild free-roaming horses and burros. It is the intent of the committee that the wild free-roaming horses and burros be specifically incorporated as a component of the multiple-use plans governing the use of the public lands."

Furthermore, simply re-allocating livestock AUMs would not achieve a TNEB. Wild horses over grazing which occurs year-round within and outside the HMA, cannot be controlled by adjusting livestock numbers. Wild horses are unlike livestock which can be confined to specific pastures, limited to specific periods of use, and specific seasons-of-use to minimize impacts to vegetation during the critical growing season and to riparian zones during the summer months. Horses are present year-round and their impacts to rangeland resources differ from livestock, as livestock can be controlled through an established grazing system (confinement to specific pastures and limited period or season of use to minimize impacts to vegetation and riparian areas). This Alternative would also be inconsistent with the WFRHBA, which directs the immediate removal of excess wild horses and burros. This would only be a short-term solution as the horse population would soon increase to a point at which resources would degrade. Because there would now be more horses within the HMA producing a greater number of foals, future gathers would be needed to remove a greater number of excess wild horses.

3. Gather the Lahontan HMA to the AML Upper Limit

Gathering wild horses to achieve a post-gather population size at the upper level of AML range would result in AML already being exceeded with the next foaling season.

The upper levels of the AML range established for the HMA represents the maximum population for which a TNEB can be maintained. The lower range represents the number of animals that should remain in the HMA following a wild horse gather to allow for a periodic gather cycle of approximately every four years and to prevent the population from exceeding the established AML between gathers. The need to gather below the upper range of AML has been recognized by the IBLA, which has held that:

> "…the term AML within the context of the statute to mean[s] that "optimum number" of wild horses which results in a TNEB and avoids a deterioration of the range." *(Animal Protection Institute of America, 109 IBLA 112, 119 (1989)).*

Proper rangeland management dictates removal of horses before the herd size causes damage to rangelands. The optimum number of horses is fewer than the number that would cause damage. Removal of horses before range conditions deteriorate ensures that they enjoy adequate forage, and an ecological balance is maintained. *(Animal Protection Institute of America, 118 IBLA 63 (1991)).*

Additionally, gathering to the upper level of AML would result in the need to follow up with another gather within one year, and could result in overutilization of vegetation resources, damage to rangelands, and increased stress to wild horses. For these reasons, this alternative did not receive further consideration in this document.

4. Control of Wild Horse Numbers by Fertility Control Treatment Only

This alternative would require repeated gathers, so that a significant portion of the existing population (95 percent) is effectively contracepted in every year. Even under those unlikely circumstances, a long time period would be needed before the herd declines down to AML, due to wild horses' high adult survival rates (Ransom et al. 2016). Implementing fertility control treatments (Appendix C) only, without removal of excess horses, would require multiple years of nearly every mare being made infertile (i.e., Schulman et al. 2024).

This alternative would not bring the horse population to AML and the wild horse populations would continue to grow even further in excess of AML. Resource degradation would escalate, and implementation of this alternative would result in significantly increased gather and fertility control costs without achieving a TNEB. Existing studies also indicate that management plans that rely exclusively on fertility control methods will not lead to the achievement of AML (i.e., Fonner and Bohara 2017). This alternative would not meet the purpose and need for the Proposed Action and therefore was eliminated from further consideration.

While the average population growth rate would be reduced, the actual size of the herd would not foreseeably reach AML through fertility control alone, and damage to the range associated with wild horse overpopulation would continue. Moreover, this Alternative would not meet the Purpose and Need for the Action and would be contrary to the WFRHBA. This alternative would not result in attainment of the AML range for the HMA and the wild horse population would continue to increase, albeit at a slower rate.

5. Raising the Appropriate Management Level for Wild Horses

The BLM has established current AML ranges based on many years of data collection, resource monitoring, and multi-agency planning efforts. The current AMLs are based on established biological resource monitoring protocols and multiple use decisions and were reaffirmed in the 2004 Herd Management Area Plan (HMAP 2004). Delaying a gather until the AML can be reevaluated is not consistent with the WFRHBA, Public Rangelands Improvement Act, FLPMA, or the land use plan. Monitoring data collected within the HMA does not indicate that an increase in AML is warranted at this time. On the contrary, such monitoring data confirms the need to remove excess wild horses to reverse downward resource trends and promote improvement of rangeland conditions. Severe resource degradation would continue to occur if excess animals are not removed, and even larger numbers of excess animals would ultimately need to be removed from the HMA to achieve AML or to prevent the death of individual animals under emergency conditions. This Alternative was eliminated from further consideration because it is contrary to the WFRHBA, which requires the BLM to manage rangelands to prevent resources from deterioration associated with an overpopulation of wild horses and burros. In addition, raising the AML where there are known resource degradation issues associated with an overpopulation of wild horses does not meet the purpose and need of this EA to restore and maintain a thriving ecological balance. Once the AML has been achieved and the wild horse population has been managed at AML for sufficient time to monitor impacts, then changes to AML if appropriate (either upward or downward) would be based on an analysis of monitoring data, including a review of wild horse habitat suitability in the HMA. For the reasons stated above, this Alternative was eliminated from further consideration.

6. Wild Horse Numbers Controlled by Natural Means

This Alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to prevent range deterioration associated with an overpopulation of wild horses or burros. The Alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. As indicated by the consistent population growth in recent years (Table 2), wild horse populations in the HMA are not effectively controlled by predators or other natural factors. Even in places in the western United States where predators such as mountain lions do eat horses and burros (i.e., Andreasen et al. 2021, Lundgren et al. 2022), they have not generally caused populations to decline (Andreasen et al. 2021). In addition, wild horses are long-lived species with documented survival rates that can exceed 95 percent (Ransom et al. 2016) and they do not self-regulate their population (NRC 2013).

This Alternative would result in a steady increase in the wild horse populations which would continue to exceed the carrying capacity of the range, eventually resulting in multiple years with catastrophic mortality of wild horses in the HMA (NRC 2013). Some of the vegetative and water resources have already degraded because of the wild horse overpopulation, and wild horses are starting to show signs of malnutrition and starvation. The weaker animals, generally the older animals, and the females and foals, are the first to be impacted. It is likely that more of these animals would die from starvation and dehydration which could lead to a catastrophic die-off. Allowing horses to die of dehydration and starvation would be inhumane treatment and would be contrary to the WFRHBA, which mandates removal of excess wild horses.

This Alternative would also lead to increased irreparable damage to rangeland resources from excess wild horses, which is contrary to the WFRHBA, which mandates the BLM to *"protect the range from the deterioration associated with overpopulation", "remove excess animals from the range so as to achieve appropriate management levels",* and *"to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area".* Wild burros and horses can be aggressive around water sources, and some wildlife may not be able to compete, which could lead to the death of individual animals. Wildlife habitat conditions are deteriorating as wild horse numbers above AML reduce herbaceous vegetative cover, damage springs, and increase erosion, and has resulted in irreversible damage to rangelands. For these reasons, this Alternative was eliminated from further consideration. This Alternative would not meet the purpose and need for this EA, which is to remove excess wild horses from within and outside the HMA and to reduce the wild horse population growth rates to manage wild horses within established AML range.

7. Chemical Immobilization

The BLM identified chemical immobilization, net gunning, and wrangler/horseback drive trapping as potential alternative methods for gather wild horses and burros. Net gunning techniques normally used to capture big game animals also rely on helicopters and may be associated with high injury rates. Chemical immobilization is very specialized technique and strictly regulated. Currently the BLM does not have sufficient expertise to implement either of these methods and it would be impractical to use given the size of the project area, access limitations, and difficulties in approachability of the wild horses.

8. Use of Wrangler on Horseback Drive-Trapping.

Use of wranglers on horseback drive trapping to remove excess wild horses can be somewhat effective on a small scale but due to the number of horses to be gathered, the large geographic size of the HMA, and lack of approachability of the animals, this technique would be ineffective and impractical as a substitute for helicopter trapping. Wild horses often outrun and outlast domestic horses carrying riders. Helicopter assisted roping is typically only used if necessary and when the wild horses are in close proximity to the gather site. For these reasons, this method for gathering the HMA horses was eliminated from further consideration.

9. Field Darting PZP Treatment as Exclusive Method of Population Control

Under this scenario, BLM would administer PZP in the one-year liquid dose inoculations by field darting the females as the sole method of population management. This method is currently approved for use and is being utilized by BLM in a small number of HMAs. This alternative was dismissed from detailed study for the following reasons, all of which are expected to limit the fraction of females in the herd that would be treatable via darting and, thus, would be insufficient to substantially control population growth: (1) Due to lack of water resources on BLM managed lands within the HMA most wild horses reside outside the HMA boundary. The area occupied by wild horses is too large for exclusive use of this delivery method; (2) the presence of water sources on both private, State, Other Federal lands, and public lands outside the HMA would make it almost impossible to restrict wild horse access to be able to dart animals over water consistently; (3) animal behavior limits their approachability/accessibility; and (4) BLM would

have difficulties keeping records of unmarked animals that have been treated due to common and similar colors and patterns in this herd. For these reasons, this alternative was determined to not be an effective or feasible method for managing wild horses within the gather area.

10. Re-Wilding Wild Horses

This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to manage wild horses were found at the time of passage of the statute. As well as preventing range deterioration associated with an overpopulation of wild horses. If BLM considered a re-evaluation on an existing HA this would require those areas to meet all the requirements necessary to maintain a wild horse population for long term management. Current evaluations and data do not support a re-evaluation of existing an HA since one or more the critical components such as forage, water, space, and cover are missing. The BLM's regulation at 43 CFR § 4700.0-6 (a) states "Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat".

Designate the HMA to be Managed Principally for Wild Horses Under 43 C.F.R. 4710.3-2

The HMA are designated in the Land Use Planning process for the long-term management of wild horses in conjunction with other multiple uses. The (BLM) Carson City District only has the Marrietta Wild Burro Range, which under 43 C.F.R. 4710.3-2 are "to be managed principally, but not necessarily exclusively, for wild horse or burro herds." There are currently only four designated Wild Horse or Burro Ranges on public lands and authority to designate such ranges resides with the Secretary of Interior or Nevada State Director. This alternative would involve no removal of wild horses and would instead address excess wild horse numbers through removal or reduction of livestock within the HMAs. In essence, this alternative would exchange use by livestock for use by wild horses. Because this alternative would mean converting the HMAs to wild horse Ranges and modifying the existing multiple use relationships established through the land-use planning process, it would first require an amendment to the RMP, which is outside the scope of this analysis. Further, this alternative was not brought forward for analysis because it is inconsistent with the 2001 Carson City Field Office Consolidated Resource Management Plan (CRMP) and the WFRHBA which directs the Secretary to immediately remove excess wild horses where necessary to ensure a thriving natural ecological balance and multiple use relationship. This alternative is also inconsistent with the BLM's multiple use management mission under FLPMA. Changes to or the elimination of livestock grazing cannot be made through a wild horse gather decision. Furthermore, even with significantly reduced levels of livestock grazing within the gather area relative to the permitted levels authorized in the, 2001 CRMP there is insufficient habitat for the current population of wild horses, as confirmed by monitoring data. As a result, this alternative was not analyzed in detail.

3.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, & ENVIRONMENTALEFFECTS

Environmental effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Environmental effects can result from individually minor but collectively significant actions taking place over a period of time. Effects include those that are ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial.

3.1 General Description of the Affected Environment

The HMA is located approximately 35 miles east of Carson City, NV and borders the south side of the Lahontan Reservoir in Lyon County, Nevada (Figure 1). The HMA consists of 9,687 acres within the SFFO of which 6,937 acres are managed by the BLM. The HMA boundary is unfenced, and wild horses are present on lands outside of the HMA. Therefore, the gather area extends beyond the HMA and overlaps the following grazing allotments: Adriance Valley, Cleaver Peak, Desert Mountain, Horse Mountain, Lahontan and Truckee-Virginia.

The gather area consists of a total of 239,431 acres. Topography varies from playas in the valley bottoms (4,000 feet) to low hills (5,500 feet). Average annual precipitation is less than 8 inches. Salt desert shrub and low sagebrush plant communities are associated with this arid cold desert location. Naturally occurring surface water is scarce. Surface water in this region is typically provided by groundwater wells and the Lahontan Reservoir.

A more detailed description of the HMA is contained in the 2004 HMAP (Appendix F) which is incorporated by reference. The wild horse population needs to be managed to mitigate rangeland resource degradation and to ensure wild horse health.

3.2 Internal Scoping and Issue Identification

In accordance with the BLM Handbook H-1790-1, initial internal scoping was conducted by a BLM Interdisciplinary (ID) team from October 16, 2024 to February 18, 2025 to identify potential resources which may be impacted by implementation of the Proposed Action and alternative. Relative to the BLM's management of wild horses in the HMA, the BLM interdisciplinary team identified issues through internal scoping. For external involvement, refer to Section 1.7 External Involvement.

1. Impacts to individual wild horses and the population. Indicators for this issue include the following:
    - Projected population size and annual growth rate
    - Impacts to animal health and condition

2. Impacts to vegetation/soils, riparian/wetland, and cultural resources. Indicators for this issue include the following:
    - Forage utilization and alteration

- Impacts to vegetation/soils and riparian/wetland resources

3. Impacts to wildlife, migratory birds, and threatened, endangered, and special status species and their habitat. Indicators for this issue include the following:
    - Displacement, trampling, or disturbance
    - Competition for forage and water

Table 3 summarizes which of the supplemental authorities of the human environment and other resources of concern within the project area are present, not present, or not affected by the Proposed Action.

3.3 Resources Table

Table 3: Resources Table

NI, PI, NP*	Resource	Rationale for Determination
NI	Air Quality *(The Clean Air Act of 1955, as amended)*	The project area is not within an area of non-attainment or areas where particulate matter or other criteria pollutants exceed Nevada air quality standards. BLM estimates that total criteria pollutant emissions related to gathering 500 horses per year by the methods proposed in this EA would be 7.6 tons per year, of which 6.5 tons per year would be PM_{10}, and that no regulated pollutant would exceed the NDEP 25 tons per year environmental evaluation threshold. Therefore, no significant air quality impacts related to the project are expected.
NP	Areas of Critical Environmental Concern (ACEC) *(Federal Land Policy and Management Act of 1976)*	Not Present.
NI	Cultural Resources *(National Historic Preservation Act of 1966, as amended)*	Historic properties would be avoided. Proposed trap sites and corrals at locations not previously inventoried for cultural resources would require a Class III inventory.
NI	Farmlands (Prime & Unique) *(Surface Mining Control and Reclamation Act of 1977)*	Present but not impacted by the Proposed Action.
NI	Floodplains *(Executive Order 11988)*	Floodplains as defined in EO 11988 may exist in the area but would not be affected by the Proposed Action.

NI, PI, NP*	Resource	Rationale for Determination
PI	General Wildlife	Analysis in EA.
NP	Native American Religious Concerns *(Executive Order 13007)*	***Need to discuss with Tribes*** Notification of the Proposed Action has been made to the Fallon Paiute-Shoshone Tribe. No religious concerns have been identified. Coordination with the tribes would continue through Project implementation.
PI	Weeds (i.e. Noxious, Invasive, Non-native, and Nuisance weed species) (Federal Noxious Weed Act of 1974, as amended)	Analysis in EA.
PI	Riparian Areas/Wetlands (Executive Order 11990)	Present in the gather area; nearly all of the riparian areas are located on lands not managed by the BLM. Reduction in the number of wild horses might result in improved riparian functionality in the project area in the long term. Analysis in EA.
NP	Threatened, Endangered, or Candidate Plant Species (Endangered Species Act of 1973, as amended)	After consulting with the BLM wildlife biologist and the USFWS website for Nevada, there are no known federally listed threatened or endangered species within the project area.
NI	Threatened, Endangered, or Candidate Animal Species (Endangered Species Act of 1973, as amended)	After consulting with the BLM wildlife biologist and the USFWS website for Nevada, there are no known federally listed threatened or endangered species within the project area.
NI	Water Quality, surface/ground	Gather activities would not impact water quality. Reduction in the number of WH&B might result in an improvement in water quality in the long term.
NP	Wastes (hazardous or solid) *(Resource Conservation and Recovery Act of 1976, and Comprehensive Environmental Response, Compensation, and Liability Act of 1980)*	There are no known hazardous or solid wastes which exist within the proposed project area, nor would any be introduced.
NP	Wild and Scenic Rivers *(Wild and Scenic Rivers Act of 1968, as amended)*	Not Present.
NP	Wilderness/Wilderness Study Areas *(Federal Land Policy and Management Act of 1976*	Not Present.

NI, PI, NP*	Resource	Rationale for Determination
	and Wilderness Act of 1964)	
Other Relevant Resources/Concerns		
NI, PI, NP*	**Resource**	**Rationale for Determination**
PI	Fuels / Fire Management	Analysis in EA.
NI	Forestry	Not impacted.
NI	Geology / Mineral Resources	Minerals present not impacted
NI	Lands / Access / Rights-of-Way (ROW)	Present but not impacted. The Federal Land Policy and Management Act of 1976 (FLPMA) provides authorities for managing public lands for multiple uses, including Range Management (Title IV) and Rights-of-way (Title V). Utilization of BLM-administered land for the purposes of The Proposed Action or Alternative are not anticipated to preclude access to public lands, enabling our mission of multiple use and sustained yield to be carried out.
NP	Lands with Wilderness Characteristics (LWC)	Not Present.
PI	Livestock Grazing (Taylor Grazing Act of 1934, National Environmental Policy Act of 1969 Endangered Species Act of 1973, Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978)	Analysis in EA.
PI	Migratory Birds e.g. Migratory birds (E.O. 13186)	Analysis in EA.
NP	Paleontology *(Paleontological Resources Protection Act P.L. 111-011, HR 146)*	Not Present.
NI	Recreation	Present but not impacted by the Proposed Action.
PI	Sensitive Species Plants BLM Manual 6840	Analysis in EA.

NI, PI, NP*	Resource	Rationale for Determination
PI	Sensitive Species Animals BLM Manual 6840	Analysis in EA.
NI	Socioeconomics	Present but not impacted by the Proposed Action
PI	Soils	Analysis in EA.
NP	Trails and Travel Management	Not Present.
PI	Vegetation	Analysis in EA.
NI	Visual Resource Management (VRM) *(FLPMA 1976, NEPA 1969)*	Visual resources are present but would not be impacted by the Proposed Action.
PI	Water Resources (quantity)	Analysis in EA.
PI	Wild Horses and Burros (WH&B) (Wild and Free Roaming Horses and Burros Act of 1971, as amended)	Analysis in EA.

*: **Not Present (NP).** The resource was not present in the area impacted by the Proposed Action; or **No Impact (NI).** The resource is present but not affected to the degree that detailed analysis is required; or **Potentially Impacted (PI).** The resource is present in the area and may be affected by the Proposed Action.

Executive Order 14154, *Unleashing American Energy* (Jan. 20, 2025), and a Presidential Memorandum, *Ending Illegal Discrimination and Restoring Merit-Based Opportunity* (Jan. 21, 2025), require the Department to strictly adhere to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq.* Further, such Order and Memorandum repeal Executive Orders 12898 (Feb. 11, 1994) and 14096 (Apr. 21, 2023). Because Executive Orders 12898 and 14096 have been repealed, complying with such Orders is a legal impossibility. The [bureau] verifies that it has complied with the requirements of NEPA, including the Department's regulations and procedures implementing NEPA at 43 C.F.R. Part 46 and Part 516 of the Departmental Manual, consistent with the President's January 2025 Order and Memorandum.

3.4 Past, Present, and Reasonably Foreseeable Future Actions

Past actions considered are those whose impacts to one or more of the affected resources have persisted to present day. For all resources, the past actions considered were analyzed back for 10 years. Present actions are those occurring at the time of this evaluation and during implementation of the Proposed Action. Past, Present, and Reasonably Foreseeable Future Actions (RFFAs) constitute those actions that are known or could reasonably be anticipated to occur within the analysis area for each resource, within a time frame appropriate to the expected impacts from the Proposed Action. The past, present, and RFFAs applicable to the assessment area are identified in the following Table 4.

Table 4: Past, Present, and Reasonably Foreseeable Future Actions

Project Name or Description	Status (X) Past	Present	Future
Issuance of multiple use decisions and grazing permits for ranching operations through the allotment evaluation process and the reassessment of the associated allotments.	X		X
Livestock grazing.	X		X
Wild horse gathers.		X	
Recreation.	X	X	X
Invasive weed inventory and treatments.	X	X	X
Wild horse issues, issuance of multiple use decisions AML adjustments and planning.	X		X
Energy development.		X	X
Lands and realty actions.	X	X	X
Mineral development.	X	X	X

Any future proposed projects within the HMA would be analyzed in a separate environmental document following site specific planning. Future project planning would also include public involvement.

3.4.1 Past Actions

In 1971 Congress passed the Wild Free- Roaming Horses and Burros Act which placed wild and free-roaming horses and burros, that were not claimed for individual ownership, under the protection of the Secretaries of Interior and Agriculture. In 1976 the Federal Land Policy and Management Act (FLPMA) gave the Secretary the authority to use motorized equipment in the capture of wild free-roaming horses as well as continued authority to inventory the public lands. In 1978, the Public Range Improvement Act (PRIA) was passed which amended the WFRHBA to provide additional directives for the BLM's management of wild free-roaming horses on public lands.

Past actions included the establishment of wild horse HMAs, establishment of AML for wild horses, wild horse gathers, livestock grazing and recreational activities throughout the area. Through disturbance and transport some of these activities have increased invasive plants and noxious weeds.

The Lahontan (1984) RMP designated the Lahontan HMA for the long-term Management of wild horses. Currently, management of the HMA and wild horse population is guided by the 2001Carson City Field Office Consolidated Resource management plan and the Lahontan Herd Management Area Plan signed in 2004. The AML range for the HMA is 7 – 10 wild horses.

The Sierra Front Northwestern Great Basin Area Standards and Guidelines developed standards and guidelines for rangeland health that have been the basis for assessing rangeland health in relation to management of livestock grazing within the Carson City District. Adjustments in numbers, season of use, grazing season, and allowable use have been based on the evaluation of progress made toward achieving the standards.

3.4.2 Present Actions

The HMA and surrounding area has an estimated population of at least 510 wild horses. Resource damage is occurring in the HMA. Wild horses in this area have established home ranges that include areas outside the HMA, including other portions of the livestock grazing area and adjacent Lahontan State Recreation Area. Horse movement outside the HMA is occurring because no continuous fencing exists to prevent such movement, vegetation within the HMA has been heavily to extremely utilized by wild horses so they must move outside of the HMA in search of additional forage and water resources. Over the past decades, program goals under the WFRWHBA have expanded beyond establishing a "TNEB: (by setting AML) for individual herds based on long-term monitoring, to achieving and maintaining healthy, viable, vigorous, and stable populations by managing horses within AML.

Public interest in the welfare and management of wild horses is as high as it has ever been. Many different values pertaining to wild horse management form current wild horse perceptions. Wild horses are viewed as nuisances, as well as living symbols of the pioneer spirit.

Monitoring of vegetation resources, vegetative treatments, rangeland health, and watershed health continues. Within the HMA wild horse grazing occurs on a yearly basis, whereas livestock grazing is normally permitted between November 1 and March 31.

The BLM is continuing to administer grazing permits and authorize grazing within the HMA. Within the proposed gather area cattle grazing occurs on a yearly basis. Wildlife use by large ungulates such as deer, and antelope is also currently common in the HMA.

The focus of wild horse management has also expanded to place more emphasis on achieving resource management objectives.

3.4.3 Reasonably Foreseeable Future Actions

In the future, the BLM would manage wild horses within HMAs that have suitable habitat for a population range, while maintaining genetic diversity, age structure, and sex ratios. The BLM would continue to conduct monitoring to assess progress toward meeting rangeland health standards. Wild horses would continue to be a component of the public lands, managed within a multiple use concept.

While there is no anticipation for amendments to the WFRHBA that would change the way wild horses could be managed on the public lands, the Act has been amended three times since 1971. Therefore, there is potential for amendment as a reasonably foreseeable future action.

The gather area contains a variety of resources and supports a variety of uses. Any alternative course of wild horse management could affect and be affected by other authorized activities ongoing in and adjacent to the area. Future activities which would be expected to contribute to the cumulative or environmental effects of implementing the Proposed Action include: future wild horse gathers, continuing livestock grazing within the area, development of range improvements, new or continuing lands and realty actions, energy development and infestations of invasive plants, and noxious weeds and their associated treatments, and continued native wildlife populations and recreational activities historically associated with them.

3.5 Environmental Effects

Environmental, or cumulative effects, can result from individually minor but collectively significant actions taking place over a period of time. The areas of analysis for each resource analyzed in the EA are provided below under each specific resource section (Sections 3.6.1 through 3.6.11). Each area of analysis was chosen to include the extent of direct and indirect effects from the Proposed Action and No Action Alternative. The temporal scope for effects includes definitions for the intensity, duration, and context. These definitions are further defined below.

3.6 Description of Affected Resources/Issues

Table 3 lists the elements of the human environment subject to requirements in statute, regulation, or executive order which were considered for detailed analysis. The BLM has discussed all the resources mentioned below and has either incorporated and analyzed them within this EA or provided an explanation of why they were not analyzed in detail. Resources that may be affected by the Proposed Action and Alternative were identified to be analyzed in detail. Resources that are not present or not affected by the Proposed Action and Alternative were considered but eliminated from further analysis.

3.6.1 Livestock Grazing

3.6.1.1 Affected Environment – Livestock Grazing

The proposed wild horse gathers would occur both outside and inside the Lahontan HMA. The gather area outside of the Lahontan HMA overlaps with the Adriance Valley, Cleaver Peak, Desert Mountain, Horse Mountain, Lahontan and Truckee-Virginia grazing allotments. The area inside the Lahontan HMA overlaps with a portion of the Lahontan grazing allotment. Livestock grazing seasons vary by allotment but cattle grazing primarily occurs during the fall and winter. Forage and available water are being utilized by both wild horses and livestock within and outside of the HMA. The Adriance Valley, Cleaver Peak, Desert Mountain, and Truckee-Virginia grazing allotments are not designated for wild horse management, but wild horses are utilizing resources in these areas. The portion of the Lahontan allotment within the HMA and the portion of the Horse Mountain allotment within the Horse Mountain HMA are designated for managed wild horse use that is defined in Herd Management Area Plans (HMAPs). The Lahontan Wild Horse HMA (9,687) is located within the Lahontan grazing allotment (Figure 2).

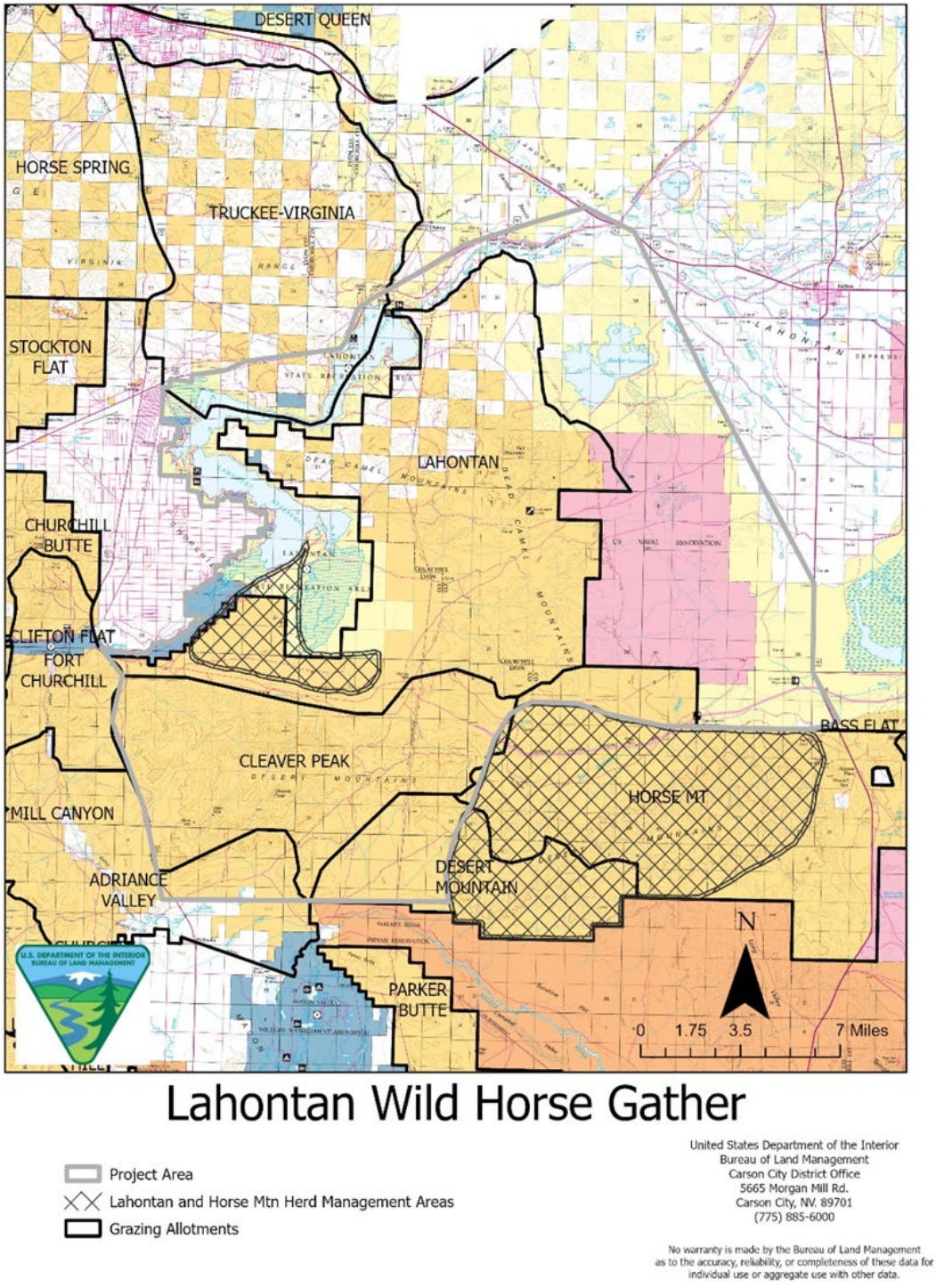

Figure 2: Lahontan Wild Horse Project and Gather Area with Grazing Allotments

Allotments are evaluated for achievement of the rangeland health standards as required by 43 C.F.R. Subpart 4180. Adjustments to livestock grazing are implemented as appropriate, as grazing term permits are renewed or through annual coordination between BLM and grazing permit holders. Adjustments can include livestock stocking levels, seasons of use, grazing rotations, utilization standards, and other management practices to better control livestock distribution. Allotment monitoring occurs to ensure compliance with permit terms and conditions as well as the standards and guidelines for rangeland health. Today's permitted livestock grazing use is generally less than historic grazing levels. Future permitted livestock grazing is also expected to be adjusted downward. It is anticipated fewer acres would be available to livestock grazing due to land disposals and proposed renewable energy projects (see cumulative effects section).

Table 5 below lists the allocation on Animal Unit Month (AUMs) within the Lahontan HMA between wild horses and livestock.

Table 5: Grazing Allotment and Wild Horse and Livestock AUMs within the HMA

Livestock Grazing Allotment Name	Livestock Grazing Season of Use	Wild Horse AML	Allocated Wild Horse AUMs within AML	Actual Wild Horse AUMs with 617 Wild Horses	% of HMA in the Lahontan Allotment	Permitted Livestock Use Within the Lahontan HMA
Lahontan	11/1 to 3/31	7-10 Wild Horses	84-120 AUMs/Year	7,404 AUMs/Year	100%	120 AUMs/Year

Over the past ten years, average actual livestock use within the entire Lahontan allotment was 1,004 AUMs which is close to the annual permitted use of 1,151 AUMs. Within the Lahontan HMA 120 AUMs are allocated to livestock and 120 AUMs are allocated to wild horses.

3.6.1.2 Environmental Consequences - Livestock Grazing

3.6.1.2.1 Alternative 1 (Proposed Action)

Past experience has shown that wild horse gather operations have few direct impacts to cattle and sheep grazing. Livestock located near gather activities would be temporarily disturbed or displaced by the helicopter and the increased vehicle traffic during the gather operation. Typically, livestock would move back into the area once gather operations cease. Under the Proposed Action, competition between livestock and wild horses for water and forage resources would be reduced over time. Forage availability and quality would improve over time as the wild horse population is incrementally brought to low or mid AML. These effects would be extended by population growth control measures

3.6.1.2.2 Alternative 2 (No Action)

Under the no action alternative, utilization by authorized livestock would continue to be impacted by the wild horses located within and outside the HMA. The impacts of the no action alternative would consist of continued resource deterioration because of year-round grazing by

wild horses, including reduced quantity and quality of forage. Forage was allocated to livestock under land-use plans and prior multiple use decisions. Competition from wild horses for limited water and forage may result in the inability of livestock operators to use their allotments.

3.6.1.3 Environmental Effects- Livestock Grazing

3.6.1.3.1 Alternative 1 (Proposed Action)

Considered in the context of other existing and foreseeable livestock management activities, the short-term action of the Proposed Action of gathering horses, using trap sites and temporary holding facilities are not anticipated to meaningfully contribute to cumulative impacts. This is because the intensity, magnitude and duration of these effects are minor and not expected to interact with any reasonably foreseeable actions.

The proposed action is expected to have long-term benefits to natural resources. The proposed action with the removal of wild horses from areas within and outside of the HMA would reduce competition and excess pressure on shared resources of forage and water. Permitted livestock grazing would continue following restrictions on when, where, and how long livestock can graze to minimize potential impacts to rangeland health. Livestock operations and grazing systems would function properly without year-round grazing by wild horses that have moved outside the HMA, and forage plants would receive rest from grazing during scheduled rest periods. Impacts to vegetation in the uplands and riparian areas would be reduced, allowing them to recover with time.

3.6.1.3.2 Alternative 2 (No Action)

In locations where wild horse and permitted livestock grazing overlap, there would likely be cumulative negative effects to rangeland health. Management of livestock grazing would continue to follow restrictions on when, where, and how long livestock can graze within an allotment to minimize potential impacts to rangeland health. However, wild horses would be over AML and continue to gaze lands all year-long within and outside of the HMA. Where wild horses overlap with grazing allotments, overall impacts to forage are potentially higher, as more forage would be consumed. The year-long presence of wild horses does not allow managed livestock grazing systems to function as they have been designed. While livestock graze within allotments at designated times and are removed for scheduled rest periods, wild horses remain on the range year-round, continuously grazing forage through these rest periods. If wild horse numbers increase within allotments that are not managed for wild horse use and compete for forage, it is possible that livestock operators would need to make changes to grazing management, including reducing the size of livestock herds. Impacts to vegetation from wild horses are additive to existing plant stressors, including permitted livestock grazing, motorized recreation, lands and realty actions, energy and mineral development and invasive weeds. These are likely to occur on a scale that may meaningfully interact with these other stressors. The increased movement and utilization by wild horses outside of the HMA would increase the risk of introduction and spread of invasive plants and loss of native cover which may, in turn, exacerbate negative affects to vegetation associated with current and future livestock grazing and recreation. As a result, there could be a cumulative decrease in plant vigor, reproduction, and cover. Impacts are expected to be greater in plant communities that are more vulnerable to invasive plants as well as loss of native plant cover and/or soil stability. Overall, native

vegetation is expected to continue to degrade under the no action alternative, resulting in decreased ecosystem resistance to additional disturbances.

3.6.2 General Vegetation

3.6.2.1 Affected Environment – General Vegetation

Salt Desert Shrub (75%) is the dominant vegetation community across the gather project area, according to the 2022 Southwest Regional Gap Analysis Project (SWReGAP) (Table 6)

Table 6: Acres of SWReGAP Land Cover Types in the Gather Area

Land Cover Type	**Acres**
Salt Desert Shrub	179,584
Barren Lands	32,501
Lakes and Reservoirs	13,337
Riparian and Wetland	7,267
Low Elevation Sagebrush Dominated Shrubland	4,864
Pinyon-Juniper Woodland	215
Other	151

Current impacts to vegetation from wild horses include grazing, trampling and degradation due to trailing and bedding as well as the spread of invasive plants. In areas of highly concentrated wild horse use, where use trails have established from wild horses trailing or congregating, vegetation loss and degradation is highest. These areas exhibit an increasing rate of native plant cover loss as well as a decreasing ability for native plants to reproduce and sustain dominance. Currently, high horse use areas occur inside and outside of the HMA.

The Lahontan HMAP states “Allow no more than 55 percent utilization on key grass species (Indian ricegrass, Idaho fescue, needlegrass) and 40 percent on interim grass species (bottlebrush squirreltail and bluegrass) yearlong”. These resource objectives are not being met. Key forage utilization data was collected eight times since 2017, and utilization data is summarized in Table 7 below. Utilization on Indian ricegrass in most years has been measured as Heavy (61%-80%), Severe (81%-94%) and Extreme (95%-100%) over large parts of the HMA. The most recent data collected during the fall of 2024 indicated utilization levels ranged from 94 percent to 97 percent on Indian ricegrass. Wild horses are currently using more than their forage allocation within HMA and are also utilizing forage from a large area outside of the HMA. Utilization levels above moderate do not allow plant species to complete their annual growth cycle. This type of excessive grazing, weakens roots, reduces plant vigor and prevents the completion of reproductive cycles. Heavy to extreme utilization of vegetation in some areas is contributing to the reduction of perennial forage grasses. Overutilization of key perennial grass species is also contributing to unhealthy rangeland conditions. Reduced vegetative cover leads to increased bare ground soil instability and erosion. Increased bare ground provides areas for invasive species to establish. Reduction in perennial plant species and shifts in functional structural groups also leads to changes in water and nutrient cycling.

Table 7 – Forage Utilization

Utilization Sample Date	Number of Samples	Range of Utilization Levels on Indian ricegrass (ACHY)	Estimated Number of Wild Horses 12 months of use	Estimated Use Number of Animal Unit Months (AUMs)	Utilization Objective of ≤55% Met
August 3, 2017	4	3% - 52%	91	1,092	Yes
May 8, 2018	4	70% - 88%	172	2,064	No
March 18, 2020	5	56% - 88%	204	2,448	No
February 11, 2021	5	84% - 88%	204	2,448	No
November 20, 2022	7	72% - 92%	307	3,684	No
July 11, 2023	6	88% - 91%	307	3,684	No
May 22, 2024	6	6% - 86%	494	5,928	No
September 17, 2024	7	94%-97%	494	5,928	No

Utilization measurements were taken using the key species method (BLM, 1999). Some sites had their expected perennial grass species absent or significantly reduced. The utilization transects had to be extended to capture enough sample points. Lower densities of preferred perennial grasses can be attributed to grazing pressure.

The current overpopulation of wild horses is continuing to contribute to areas of moderate to extreme vegetation use, trailing, and trampling damage in upland areas. The current wild horse overpopulation is preventing the BLM from managing for rangeland health at a TNEB, as well as making it difficult to develop a multiple use relationship on BLM-administered lands in the area. This overpopulation has resulted in observed past and present degradation of vegetation.

The relative quantity of vegetative cover removed by grazing and trampling also affects soil properties. In general, vegetative cover provides shading for soils, which increases their ability to retain moisture, reduces soil erosion by intercepting precipitation and reducing surface wind velocities, and provides organic input into the soil (Beever and Herrick 2006).

3.6.2.2 Environmental Consequences – General Vegetation

3.6.2.2.1 Alternative 1 (Proposed Action)

The proposed action is expected to have an effect on vegetative resources including trampling of vegetation by wild horses at gather sites and holding locations; and crushing of vegetation by vehicles, temporary corrals and holding facilities. Gather corrals and holding facility locations are usually placed in previously disturbed sites (e.g. gravel pits) which are easily accessible to livestock trailers and standard equipment and that use existing roads. These disturbed areas would be less than one acre in size. No new roads would be created. These impacts are temporary, and vegetation is expected to recover within the next growing season.

At a much broader spatial scale, gathering and removing excess wild horses to the low end of AML would reduce the ongoing degradation of rangelands due to overgrazing by wild horses within and around the HMA. Additional gathers may be needed to achieve the low end of AML and to maintain the wild horse population at the low end of AML. Removing excess wild horses as described in Alternative 1, would reduce grazing pressure on forage plants, allowing them to complete their annual growth cycle, strengthening root structure, and maintaining or increasing vigor and reproductive abilities.

3.6.2.2.2 Alternative 2 (No Action)

Under the No Action alternative, wild horses would not be gathered and removed from within and around the HMA. Therefore, there would be no impacts to vegetation associated with gather activities.

However, not removing excess horses would result in a continued increase in the number of wild horses above AML, and negative impacts associated with wild horse use on vegetation would continue and increase (see affected environment). Overutilization of vegetation and trampling impacts would increase as the wild horse herd grows. This would have compounding impacts on vegetation. Initial impacts would be seen in sites that are already close to crossing an ecological threshold, or on sites where animals congregate such as near water sources. The increased grazing pressure from horse numbers in excess of the high AML range would result in a decrease in native perennial species, and an increase in bare ground, erosion, or shrubs tolerant of disturbance (e.g., rabbitbrush) that have lower forage value and provide fewer ecosystem goods and services (Chambers et al. 2014). These changes would decrease the stability, biodiversity, vigor, and production of native plant communities within and around the HMA.

Depending on the availability of food and water throughout the area, the number of wild horses may gradually increase and or spread to new areas. Increased wild horse numbers and/or movement of wild horses into new areas would result in additional negative impacts to vegetation. Continued wild horse overutilization within and outside the HMA may result in increased loss of native perennial bunchgrasses, forbs and shrubs exposing, larger areas to

potential loss of native plant dominance, increased invasive plant infestations, type conversion to non-native species and soil loss (due to lack to deep-rooted native bunchgrasses and shrubs) throughout the area.

When wild horse numbers exceed the established AML, overall impacts to forage are higher, as more forage is consumed. This does not allow the livestock grazing systems to function as they have been designed, livestock are removed for the scheduled rest periods, but wild horses remain on the range year-round, continuously grazing forage through these rest periods, and the horses are present in higher numbers than the range can sustain.

Wild horse utilization and trailing due to increasing numbers is occurring within and surrounding the HMA and is reducing vegetative cover and vigor, particularly in those areas near water sources and areas in low elevations with gradual sloped topography. The reduction of vegetative cover and increased trampling resulting from higher wild horse numbers has led to increased soil disturbance, which negatively impacts the establishment of plants and the root abilities of native vegetation. Changes to vegetation can also potentially accelerate runoff and subsequent soil erosion.

Wild horses generally prefer perennial grass species as forage when available. Shrubs are important wildlife forage, but wild horses can also eat a high volume of shrubs, when more palatable foods are not extensively available (Nordquist 2011). The mosaic of plant communities found throughout the analysis area also support a wide variety of wildlife species that use the various habitats for food and water, thermal protection, escape cover, and reproduction.

3.6.2.3 Environmental Effects – General Vegetation

3.6.2.3.1 Alternative 1 (Proposed Action)

Under Alternative 1, wild horse numbers would be reduced, and maintained within the AML range, which would result in decreased impacts to vegetation both inside and outside the HMA. While removal of excess wild horses may not be able to restore plant communities that have lost functional/structural groups and seed banks, maintaining the number of horses in the HMA within AML would help prevent areas with low perennial bunchgrasses from declining further. Generally, the removal of grazing pressure from excessive numbers of wild horses would lessen the impacts to perennial grasses and shrubs, allowing them to better recover from natural disturbances such as fire and drought, and to compete with non-native annual grasses and forbs such as cheatgrass (*Bromus tectorum*) and Halogeton (*Halogeton glomeratus*).

3.6.2.3.2 Alternative 2 (No Action)

Alternative 2, the no action alternative, would result in an increase in wild horse numbers and increased disturbance to native vegetation and soils, which could lead to increased damage to vegetation. Plant communities that have been and may be impacted by wildfires, drought, and annual invasive weeds would be more vulnerable to losing native perennial grasses and shrubs, due to the high amount utilization and trampling from excessive wild horses. The constant overuse of rangeland vegetation would decrease the ability of plants to complete their growth cycle and recover from grazing. As a result, many sites that have been previously disturbed may irreversibly transition from native perennial plant communities to invasive annuals plant (e.g.,

cheatgrass) communities making these communities more vulnerable to fire. This change in functional/structural groups would have a negative impact on the vegetation resources within and outside the HMA, further affecting other aspects of these salt-desert ecosystems such as soils and wildlife.

Maintaining a balance of grazing animals and controlling the timing and amount of forage that is consumed each year by all grazing animals is crucial to maintaining healthy plant communities within the analysis area. Year-round grazing on the vegetation from excess wild horses does not allow sites to recover from past disturbances and those areas are in danger of trending downward in ecological health.

3.6.3 Fuels and Fire

3.6.3.1 Affected Environment – Fuels and Fire

Vegetation within and outside the Lahontan HMA is typical of the great basin, the dominant vegetation types are Salt Desert Scrub and Greasewood communities (see Vegetation 3.6.2 for a detailed description). Maintaining a balance of grazing animals and controlling the timing and amount of forage that is consumed each year by wildlife, livestock, and wild horses is crucial to maintaining healthy upland plant communities within the HMAs. Appropriate grazing levels by large ungulates has been associated with the known effect of reducing the cover, density, and volume of fuels, particularly fine fuels, on the landscape (Schmelzer et al., 2014). In turn, this reduces the probability and severity of catastrophic wildfires. Within the shrub and grasslands of the HMA and surrounding areas, the fuel reducing benefits are known. Recent research has identified that grazing by many global herbivore species, including but not limited to horses, aids in the reduction of fuel loading and the impact of grazing by herbivores, including livestock, have long been recognized (Rouet-Leduc, 2021; Davies et al., 2010). Year-round heavy grazing on upland vegetation from all ungulates reduces the overall fuel amounts available for wildfires but heavy grazing does not allow upland sites to recover from past disturbances and those areas are in danger of trending downward in ecological health and increasing in annual invasive grasses (Davies et al., 2024). Additionally, plant communities and sagebrush ecosystems that have been impacted in the past by wildfires and historic livestock grazing are vulnerable to losing more of their native perennial grass component when grazed at higher than moderate utilization levels (less than 60%). Excess grazing pressure shifts plant communities toward annuals vs perennials. This shift can result in increased fuels in the wet growing season years and that fuel load can persist to cause big fires in subsequent years. In the big growth years, the number of animals needed to control fuels is not sustainable in the normal or especially dry years. In the abundant fine-fuels years, the dispersal of animals causes minimal impact to fuels. To use animals to control fuels and reduce fire size, animals must be controlled to create fuel breaks. This is not possible with free-roaming horses. Past and present fire history data within the Lahontan HMA is characterized by relatively low occurrence with a few small fires. This is characteristic of its rural location and sparse vegetation types.

Known past wildfire activity has been relatively low within and outside the HMA. Within the last 30 years, there have been 12 known wildfires totaling 4,367 acres within the project analysis

area. The smallest fire was one acre, largest was 3,864 acres, and the median is 19 acres which denotes primarily small fires. Most of the fires were human caused. Low fire activity in the project area is likely a result of the ecosystem type, which is primarily consists of salt desert shrub and a small percentage of perennial grass/sagebrush vegetation types. Salt desert shrub plant communities tend to have less vegetation density but are not fire adapted and have lower ecosystem resiliency when impacted by disturbances such as fire. Due to their low fire potential, the low elevation salt desert plant communities are not a priority for fuels reduction and restoration projects and in the project area no treatments have been implemented.

The occurrence of wildland fire varies from year-to-year depending on weather, climatic, and other conditions. Fire occurrence and size can depend on a range of factors, including elevation, vegetative community, fuel moisture, precipitation or lack of precipitation, the ability of fire to carry in specific types of vegetation, and other climatic dynamics such as dry summer weather following a wet spring or extended periods of drought.

Sagebrush ecosystems and many others, including salt desert shrub, across the Great Basin are facing invasion by the non-native annual cheatgrass (*Bromus tectorum*). Cheatgrass competes with native plants and can exacerbate fuel loading and fire behavior. The presence of a healthy native plant community helps to prevent the establishment and dominance of cheatgrass. It is much more difficult to suppress wildfires in cheatgrass invaded ecosystems than in ecosystems containing minimal cheatgrass. Since cured cheatgrass is a highly flammable fuel, the presence and extent of cheatgrass can assist in allowing fires to spread rapidly and uncontrollably. Additionally, perennial grasses are generally spatially arranged in bunches separated by non-vegetated interspaces, whereas cheatgrass is often distributed more continuously across portions of the landscape, with minimal non-vegetated interspace between individual stems. This continuity allows for rapid fire spread.

Within burn areas, native vegetation recovery in shrub dominated ecosites is highly variable. Differences in native vegetation recovery appear to be associated with elevation, pre-fire vegetation composition, invasive plant pressure, burn severity, fire size and years since the fire occurred. The overall cover of invasive annuals is variable in wildfire areas, with portions of some wildfires exhibiting moderate to high invasive annual cover. Moderate to high invasive plant cover can hinder recovery of native plants as well as natural recovery. Moderate to high invasive cover also increases invasive plant spread in adjacent unburned vegetation. After a fire occurs in a cheatgrass invaded area with low ecological resiliency, the post-fire conditions tend to enhance the establishment and growth of additional cheatgrass, to the detriment of perennial grasses, forbs, and shrubs, leading to the creation a positive feedback loop of increasing cheatgrass dominance and more subsequent fires.

3.6.3.2 Environmental Consequences – Fuels and Fire

3.6.3.2.1 Alternative 1 (Proposed Action)

A potential adverse direct effect of the proposed action is the possibility of starting a fire if the gather operations occur during fire season. If vehicles are operated on roads with dry vegetation

during gathers, fire starts may occur. However, potential fire starts would be mitigated by ensuring that all wild horse gather operations will follow agency standard fire prevention terms (i.e. require all trucks and equipment be equipped with fire extinguishing equipment, etc.) based on the project activity level. Changes to gather operations may occur at the discretion of the agency's Authorized Officer based on fire and fuels conditions.

The Proposed Action may have a minor beneficial indirect effect on fire management and fuels in the project area. Removing the unmanaged grazing by wild horses in areas not designated for their use may reduce the spread and density of invasive species and remove the grazing pressure on native perennial grasses that allow native vegetation communities to be more resilient to wildfire. These passive efforts to reduce the amount and/or continuity of cheatgrass would lessen likelihood of large fire growth, a positive effect on fuels and fire management in the area. The overall effect of the Proposed Action would result in reducing the risks of catastrophic wildfire and its potential adverse impacts to life, property, and natural resources, a net beneficial effect.

3.6.3.2.2 Alternative 2 (No Action)

Under the No Action alternative, wild horses would continue to graze outside the HMA in areas not designated for their use. No fire starts would occur based on gather operations. Wild horse populations would be expected to continue to increase possibly affecting fuels. Wild horse grazing may reduce the amount of fine fuels that can carry wildfires. However, when grazing is not managed, it can increase invasive species which may lead to a change in fire regime increasing fire size and frequency.

3.6.3.3 Environmental Effects – Fuels and Fire

3.6.3.3.1 Alternative 1 (Proposed Action)

Under Alternative 1, wild horse numbers would be reduced, and maintained within the AML range, which would result in decreased impacts to vegetation throughout the HMA. Generally, the removal of grazing pressure from excessive numbers of wild horses would lessen the impacts to perennial grasses and shrubs, allowing them to better recover from natural disturbances such as fire and drought, and to compete with non-native annual grasses and forbs such as cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*).

The growing scientific literature has continued to affirm that even though grazing reduces fuel loading, proper grazing management is critical for the advancement of land health characteristics (et al., 2023). Soil health, hydrologic function, and biotic integrity are all impacted differently depending on the location, timing, duration, and intensity of grazing management (Hennig et al., 2021). Properly managed grazing is critical to achieve reductions in fuel loads while curbing the expansion of invasive annual grasses, promoting native perennial species, and protecting sensitive riparian habitats. Research continues to indicate that a variable season of use contributes to site resiliency while repeated early-season, high intensity use, contributes to the degradation of rangelands and the expansion of annual grasses (Copeland et al., 2023; Davies et al., 2015; Davies et al., 2024). Moderate fall grazing of uplands has also been identified with the reduction of invasive annual grasses and the promotion of native perennial species (Copeland et al., 2023; Davies et al., 2010). While the BLM is granted the duty of managing wild horses, the day-to-day movement of wild horses on the range is inherently unmanaged from a livestock

management perspective (Davies & Boyd, 2019). With the exception of fencing, wild horses graze whatever location they want to, for whatever timing and duration they want to, and whatever intensity (amount) they want to. In more natural systems, predation may augment the location, timing, and duration. However, wild horses face very limited predation and subsequently impressive reproduction rates as a result (Garrott, 2018). Under Alternative 1 the numbers of wild horses would be reduced, and maintained at AML, which would result in a short-term increase in the volume of fine fuels throughout the HMAs. This would be due to a reduction in total amount of forage consumed year-round by the wild horses on the HMAs and surrounding areas. The increase of fuels available, especially during the late summer months, could result in a theoretical increase in wildfires. Conversely, the removal of excess wild horses may reduce the long term increase in areas dominated by annual invasive grasses (cheatgrass). Reducing the amount of future area potentially dominated by annual invasive grasses and would theoretically reduce the amount and frequency of future fires.

3.6.3.3.2 Alternative 2 (No Action)

Alternative 2, the no action alternative, would result in an increase in wild horse numbers and increased disturbance to native vegetation and soils, which could lead to increased damage to vegetation. Plant communities that have been and may be impacted by wildfires, drought, and annual invasive weeds would be more vulnerable to losing native perennial grasses and shrubs, due to the high amount utilization and trampling from excessive wild horses. The constant overuse of rangeland vegetation would decrease the ability of plants to complete their growth cycle and recover from grazing. As a result, many sites that have been previously disturbed may irreversibly transition from native perennial plant communities to invasive annuals plant (e.g., cheatgrass) communities making these communities more vulnerable to fire. This change in functional/structural groups would have a negative impact on the vegetation resources within and outside the HMA, further increasing fine fuels and fire probability.

3.6.4 Soils

3.6.4.1 Affected Environment - Soils

The range of soils within the project area is typical of the Great Basin. The dominant soil orders present in the project area are aridisols and entisols (Figure 3). Aridisols are common desert soils, too dry for mesophytic plant growth. Entisols are commonly sandy or very shallow; they show little evidence of development of pedagogic horizons. Less than four percent of the soils mapped in the project area are highly susceptible to erosion (K factor greater than 0.4). Detailed information for these soils can be found in applicable U.S. Department of Agriculture soil survey publications and are available at https://websoilsurvey.nrcs.usda.gov/app/.

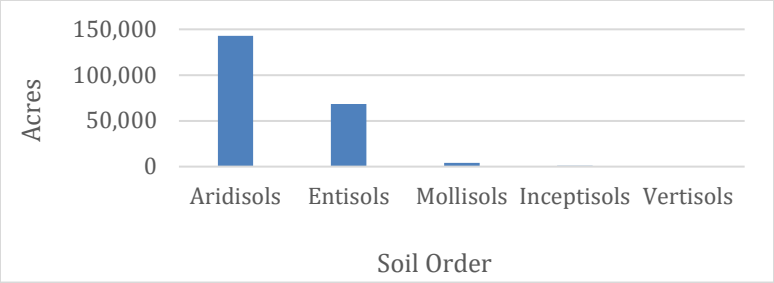

Figure 3: Soil orders present in the gather area

Prior to the Taylor Grazing Act of 1934, livestock grazing practices resulted in significant deterioration of soil and vegetation resources in the West. While present grazing management efforts have helped reduce past historic soil impacts and improved current soil resource conditions, the current overpopulation of wild horses continues to negatively impact soils.

Aerial assessment of the gather area indicates trailing by horses between water sources and foraging areas. Soil compaction due to trailing reduces infiltration, increases runoff, and hinders plant growth. Heavy vegetation utilization and trailing by horses can decrease vegetative cover and alter vegetative composition. Changes in vegetative composition can reduce soil infiltration rates, which increases runoff and consequently soil erosion, as well as decrease soil productivity. These impacts hinder BLM from managing public lands within and around the HMA for land health standards and for a TNEB.

3.6.4.2 Environmental Consequences - Soils

3.6.4.2.1 Alternative 1 (Proposed Action)

Alternative 1 could result in short-term impacts to soils at gather site locations and temporary holding facilities. These sites would likely occur in previously disturbed areas and are typically less than 0.5 acres. Some soils within these sites could become compacted, devoid of vegetation, and susceptible to soil erosion, however, these areas are of limited size and are expected to recover within a short period of time. The long-term beneficial impacts to soil resources that would occur because removing excess horses to within the established AML range would outweigh any short-term effects to soils at trap sites and holding areas.

3.6.4.2.2 Alternative 2 (No Action)

The no action alternative would result in the continuation and worsening of erosion due to the trailing and hoof action by an increasing overpopulation of wild horses. Compaction, soil loss, and loss of biological crusts are likely to accelerate as wild horse populations continue to grow.

Soil as a land health indicator could be at risk of moderate to extreme departure from desired condition.

3.6.4.3 Environmental Effects - Soils

3.6.4.3.1 Alternative 1 (Proposed Action)

Cumulative effects to soils under Alternative 1 would be minimal and temporary. Some areas such as trap sites and holding facilities would experience some compaction and trampling, however, these areas are generally small and are typically located in previously disturbed areas. Once animals are removed from these sites, soils are expected to recover. Reducing the population of wild horses to within the established AML range under Alternative 1 would significantly reduce the long-term damage to soils resulting from trampling and overgrazing.

3.6.4.3.2 Alternative 2 (No Action)

Under Alternative 2, wild horse populations would continue to increase and overgrazing would result in the loss of vegetative cover and litter to protect the soil surface. There would also be a decrease in biological soil crusts and an increase in soil erosion, bare ground, and soil compaction.

3.6.5 Wildlife and Migratory Birds

3.6.5.1 Affected Environment – Wildlife and Migratory Birds

Nevada Department of Wildlife's Wildlife Action Plan (WAPT 2022) identifies 20 key habitat types within Nevada. The predominant key habitat types found within the gather area include salt desert shrub, low elevation sagebrush, lakes and reservoirs, riparian wetlands and barren landscapes

Wildlife species in the general area include mammals, birds, reptiles, amphibians, and invertebrates. Biological diversity varies according to topography, plant community, proximity to water, soil type, and season. Because intensive plant and animal surveys have not been completed, abundance and distribution of most wildlife species can only be inferred from available habitat.

Big Game

The gather area contains 12,050 acres of agricultural mule deer (*Odocoileus hemionus*) habitat, 19,236 acres of movement corridors. Mule deer generally browse on forbs, grasses, and shrubs depending on the time of year. For instance, forbs and grasses are most important in spring and summer while shrubs are most utilized during winter and the dry summer months. Factors affecting mule deer across Nevada's range include loss of plant vigor, pinyon-juniper encroachment, overgrazing, invasive species, fire, drought, mining and other anthropogenic developments, and migration corridor impediments (Wasley 2004).

The gather area contains 7,544 acres of year-round pronghorn antelope (*Antilocapra Americana*) habitat. Pronghorn primarily eat forbs and shrubs with grasses being the least preferred forage. Vegetation height, cover, and community type, as well as elevation, topography, and distance to water all influence pronghorn antelope habitat selection.

Migratory Birds

Management for these species is based on IM 2008-050 dated December 18, 2007 (BLM 2007).

Numerous species of migratory and non-migratory birds, including raptors, utilize habitat such as trees, shrubs, cliffs, and other upland vegetation within the project area for shelter, nesting, and

foraging. Desert shrub habitats provide nesting structure, protection from predators, and thermal cover for passerines, as well as foraging habitat for raptors. Rock outcroppings/crevices provide nesting, roosting, and protection from predators for some bird species, and rocky ledges provide a nesting substrate and protection from predators for several raptor species. Generally, migratory bird species occur in higher concentrations in riparian areas. Typically, the nesting season is when these species are most sensitive to disturbance, which occurs from March 1-July 31.

In general, monitoring data within the allotments show declining occurrence or absence of perennial grass species and a transition to shrub dominated states in the uplands. Riparian areas are scarce throughout the analysis area but are essential habitat for bird species of the arid and semiarid west and provide important stopping points for neotropical migratory birds passing through the desert. The current overpopulation of wild horses is also contributing to areas of heavy vegetation use and trailing and trampling damage in uplands and riparian-wetland areas.

3.6.5.2 Environmental Consequences - Wildlife and Migratory Birds

3.6.5.2.1 Alternative 1 (Proposed Action)

Because of physiology, wild horses primarily eat native bunchgrasses when available; consequently, dietary overlap between horses and mule deer, as well as pronghorn, has been documented as minimal (1 percent). However, shrubs, can represent a large part of wild horses' diet throughout the year. However, native plant communities can only sustain a certain level of grazing utilization. The upper limit of the AML range is the maximum number of wild horses that can be maintained to achieve a TNEB and not adversely impact the plant community in combination with other multiple uses such as wildlife and livestock grazing. These Action Alternatives would also help in achieving and maintaining the wild horse populations within AML and remove all excess wild horses, thus vegetative health within key habitats would be promoted.

When AML is exceeded and maintained over time, overutilization of vegetation and water sources by wild horses occurs, decreasing plant diversity and in turn changing habitat structure (Beever and Brussard 2000; and references therein). Habitat structure is expected to be changing in parts of the project area. Beever et al. (2008) conducted a study of vegetation response to removal of horses in 1997 and 1998. The paper concluded that horse-removed sites exhibited 1.1–1.9 times greater shrub cover, 1.2–1.5 times greater total plant cover, 2–12 species greater plant species richness, and 1.9–2.9 times greater cover and 1.1–2.4 times greater frequency of native grasses than in horse-occupied sites.

Effects of wild horses are not uniform across the landscape. For instance, wild horses would most utilize areas of the Lahontan Herd Management Area that have more grasses because they are primarily grazers. However, when wild horses are substantially over AML, they would also overgraze shrub species such as winterfat, budsage, and four-wing saltbush, which takes away available forage for browsers such as mule deer. While impacts to water from wild horses are different than cattle due to behavior (wild horses tend to not linger at a source), decreased cover and diversity of grasses and shrubs as well as decreased mammal burrow density have been documented from wild horses at water sources (Beever and Brussard 2000; Ganskopp and Vavra

1986). Small mammals are a prey base for many species. Thus, less prey can negatively affect raptors and carnivores that may inhabit the area. Additional information related to the potential effects of wild horses on ecosystems is reviewed in Appendix H. Overall, under the Proposed Action, it is expected that increased understory plant species and cover and maintaining less competition for forage would benefit species dependent on these key habitats for food, water, and cover. Additionally, species that prey on wildlife that inhabit these plant communities, such as golden eagles, and other raptors may benefit from an increased prey base over time.

Direct short-term impacts from gather activities include transient, localized disturbance to wildlife and birds from the presence of people, vehicles, helicopters and wild horses at the trap locations and temporary holding facilities during gather operations.

Implementation of Alternative 1, would provide the greatest benefit to wildlife. The habitat would be able to recover and improve, and there would be less competition for resources between wild horses and wildlife populations. Specifically, shrub, native grass, total plant cover and species richness would increase, and invasive species would decrease (Beever et al. 2003, 2008). Riparian areas and meadow function would also improve as well as their associated perennial grasses and forbs and other species, increase hiding cover, and result in the overall improvement of habitat quality for wildlife species.

3.6.5.2.2 Alternative 2 (No Action)

Over-utilization of forage by free-roaming wild horses would continue to occur if population numbers stay above or continue to increase above the high AML. Key Habitats could become further degraded and this would decrease forage and cover for wildlife species. Over time it is expected that the diversity and abundance of species that inhabit the project area would further decrease, which may in turn decrease the prey base for wildlife species that forage in the area.

The direct impacts of Alternative 2 would be to eliminate the short-term impacts from gather activities, including disturbance to wildlife from the presence of people, vehicles, helicopters, and wild horses at the trap locations and temporary holding facilities during gather operations.

Indirect impacts from this Alternative would be the continued degradation of wildlife habitats, including reduced quantity and quality of vegetation and degradation of riparian areas, meadows, and water resources necessary for wildlife. In the long term, this Alternative would lower the occurrence of native grasses, increase the presence of invasive species, and decrease vegetative cover (Beever & Aldridge 2011).

3.6.5.3 Environmental Effects to General Wildlife and Migratory Birds

3.6.5.3.1 Alternative 1 (Proposed Action)

When combined with the effects from past, present, and RFFAs, cumulative effects from the Proposed Action to key habitats and wildlife, are expected to be negligible or positive. This is because the Action Alternative would help accomplish the objectives of enhancing and/or maintaining resilient plant communities and watersheds by decreasing over-utilization of vegetative resources by removing excess wild horses. Managing wild horses at AML within the

HMA would generally promote plant health and maintain or improve the health of wet meadows, springs, and riparian areas that are so crucial to wildlife in the project area.

Maintaining a balance of grazing animals and controlling the timing and amount of forage that is consumed each year by wild horses is crucial to maintaining healthy upland plant communities that provide important wildlife forage and cover. By removing excess wild horses, as described in Alternatives 1, cumulative impacts to wildlife habitat are expected to be beneficial.

3.6.5.3.2 Alternative 2 (No Action)

Under Alternative 2 wild horse numbers would continue to grow and disturbance to plant communities and watersheds from over utilization of vegetative resources would ultimately cause a shift in the functional/structural groups. Potentially resulting in a transition from perennial plant communities to invasive annual plant communities. These changes would negatively affect wildlife habitat. Ecological degradation would continue to occur and increase as the wild horse population increases and other land uses would compound these negative effects.

3.6.6 Sensitive Species: Animals

3.6.6.1 Affected Environment – Sensitive Species (Animal)

Per the BLM Special Status Species manual 6840, BLM special status species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. Bureau sensitive species lists are reviewed and updated every five years by each State Director (BLM 2008). Additionally, all federal candidate, proposed, and delisted species in the five years following delisting are designated as Bureau sensitive species (BLM 2008). Many of these species as well as other wildlife species of concern are also discussed in the Nevada Department of Wildlife WAPT (WAPT 2022). Within the CCD, 121 species were designated as BLM sensitive by the Nevada BLM State Director in 2023. These sensitive species include birds, reptiles, amphibians, mammals, fish, invertebrates, and plants. A few of the important special status animal species that occur or have the potential to occur in the gather area include multiple bat and lizard species, and pale kangaroo mouse (*Microdipodops pallidus*).

Bats

Eight sensitive species of bats are known to inhabit Key Habitats within the project area. These include long-eared myotis (*Myotis evotis*), western small-footed myotis (*Myotis ciliolabrum*), fringed myotis (*Myotis thysanodes*), little brown bat (*Myotis lucifugus*), Townsends's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), silver-haired bat (*Lasionyteris noctivagans*), and western red bat (*Lasiurus blossevillii*). Bats have specific needs for roosting, nesting, and foraging. Roosting habitats include crevices in rock cliffs and rimrock, abandoned mines, abandoned structures, and in trees with loose bark such as junipers. There are known abandoned mine lands located within the gather area. Foraging habitats include open grasslands, shrub-steppe, riparian areas, open water sources including water troughs, and in and around

trees. In general, the long-term persistence of North American bat species is threatened by the loss of clean, open water, modification of destruction of roosting and foraging habitat, and disturbance or destruction of hibernacula for hibernating species. Chemicals in the environment that affect bats, or their prey are also threats. Bats may be minimally affected by wild horses, but the decline in plant community health, especially riparian areas, could negatively affect foraging conditions.

3.6.6.2 Environmental Consequences – Sensitive Species (Animals)

3.6.6.2.1 Alternative 1 (Proposed Action)

Impacts would generally be the same to BLM designated sensitive species as described in the environmental consequences section under Section 3.6.5 General Wildlife and Migratory Birds. Maintaining proper AML should also help maintain habitat conditions that, over time, may benefit sensitive species that utilize these key habitats by providing a diverse vegetation structure that provides for multiple life cycle requirements that any given species may need to successfully reproduce. If the Proposed Action is successful, decreasing competition for forage by wild horses from current levels would benefit sensitive species dependent on these key habitats for food, water, and cover. Additionally, other sensitive species such as golden eagle or burrowing owl that prey on wildlife that inhabit the analysis area should benefit from a robust prey base and proper functioning water sources.

3.6.6.2.2 Alternative 2 (No Action)

Overutilization by wild horses would continue to occur as the wild horse population numbers would continue to increase. Special status species habitat would continue to degrade and competition for forage and habitat would continue to increase and potentially cause a decline in sensitive species populations.

3.6.6.3 Environmental Effects – Sensitive Species (Animals)

3.6.6.3.1 Alternative 1 (Proposed Action)

When combined with the effects from past, present, and RFFAs, cumulative effects from the Proposed Action to key habitats, and in turn sensitive species, are expected to be negligible or positive. This is because the Proposed Action would help accomplish the objectives of enhancing and/or maintaining resilient plant communities and watersheds by decreasing over-utilization of vegetative resources by excess wild horses; generally increasing plant diversity; and improving and maintaining wet meadows, springs, and riparian areas that are so crucial to multiple species in the project area.

3.6.6.3.2 Alternative 2 (No Action)

Cumulative impacts of the No Action alternative, would result in an increase in excess wild horses, decreasing the quality of sensitive species habitat by further degrading the existing vegetation and possibly resulting in a reduction of perennial plant communities to a more dominant invasive annual state. This would be compounded with drought and other activities in the area.

3.6.7 Sensitive Species: Plants

3.6.7.1 Affected Environment – Sensitive Species (Plants)

Within the CCD, 55 plant species were designated as BLM sensitive by the Nevada BLM State Director in 2023. Of these special status species, there are two BLM sensitive plant species that have been found within the proposed Lahontan gather area. These species include Lemmon Buckwheat (*Eriogonum lemmonii*), and Nevada suncup (*Eremothera nevadensis*).

Lemmon Buckwheat

Habitat for this annual plant includes Rare to infrequent on clayey or tuffaceous outcrops, flats and slopes in saltbush and greasewood communities usually found at an elevation of 4,265 feet to 5,413 feet Known locations of this plant are found throughout Churchill, Lyon, Pershing, Story, and Washoe counties in Nevada.

Nevada Suncup

Habitat for this small annual plant includes open, sandy, gravelly, or clay slopes and flats in the salt-desert, shadscale, and lower sagebrush zones. As well, dry, open valleys and foothills, variously in sandy, gravelly, or clay soil, somewhat tolerant of alkali usually found at an elevation of 3,937 feet to 5,413 feet. Known location of this plant are found throughout northwestern Nevada.

Wild horse utilization and trailing due to increasing numbers is occurring within and surrounding the HMA and is reducing vegetative cover and vigor, particularly, in those areas near water sources and areas in low elevations with gradual sloped topography. The reduction of vegetative cover and increased trampling resulting from higher wild horse numbers has led to increased soil disturbance, which negatively impacts the establishment of plants and root abilities of native vegetation. Changes to vegetation can also potentially accelerate run off and subsequent soil erosion into lake Lahontan reservoir. Utilization data illustrates wild horse grazing impacts. While special status species are often found in highly specific types of soils and vegetation communities, these general assessments echo the conditions of the area as a whole and most likely also impacting areas that special status plant species are found. In many cases, trampling and grazing of these special status species by horses are likely to occur further impacting these species.

3.6.7.2 Environmental Consequences – Sensitive Species (Plants)

3.6.7.2.1 Alternative 1 (Proposed Action)

Under Alternatives 1, wild horse numbers would be reduced, and maintained within the AML range and all excess wild horses would be removed, which would result in a decrease in over utilization of resources by horses, thus decreasing the overall negative ecological impacts on special status plant species throughout the HMA. The potential direct impacts associated for this alternative would be localized, short term impacts from placement of traps and herding wild horses with a helicopter on or across the habitat of a special status plant species during the gather

activities. However, design features in the Proposed Action would mitigate these impacts. Specifically, the BLM would not construct trap locations or temporary holding facilities within known occupied habitat for sensitive plant species.

Additional indirect impacts to special status plants from the action alternative could include the reduced risk of habitat degradation and increased plant vigor and growth. Maintaining the wild horse populations within AML would decrease competition for available cover, space, forage, and water between horses and special status species. Reduced trampling and consumption of general vegetation and special status plant species would result in increased plant vigor, production, seedling establishment, diversity, and ecological health of special status species habitat, particularly near wet meadow/riparian areas.

3.6.7.2.2 Alternative 2 (No Action)

While no direct or indirect effects of gather operations would occur. Direct impacts to sensitive plant species would likely include grazing and trampling of special status species under the no action alternative. Indirect impacts of Alternative 2 would result in an increase in wild horse numbers and therefore increased utilization and disturbance to native vegetation and soils. Over time this degradation would further impact ecological health within and outside the HMA as seen in the current monitoring data for the analysis area. This would likely lead to increased damage to upland and riparian vegetation, which includes sensitive plant species and their habitat that occur in the analysis area.

3.6.7.3 Environmental Effects – Sensitive Species (Plants)

3.6.7.3.1 Alternative (Proposed Action)

Past and present impacts to special status plants in the gather area are generally related to recreation, mining, energy development, road development, grazing, dispersed recreation, and wild horses. All activities and events would be expected to continue into the foreseeable future. Cumulative impacts associated with the Proposed Action from gather operations would be expected to be negligible based on the incorporated design features. Long-term impacts from removing excess wild horses within and outside of the HMA would be expected to decrease the amount of grazing, trailing and trampling damage to special status plants.

3.6.7.3.2 Alternative 2 (No Action)

Past and present impacts to special status plants in the action area would be the same as those analyzed for the Action Alternatives. Cumulative impacts from the no action alternative would be the continued trailing and trampling of special status plants by wild horses. As the wild horse population continues to grow into the future, trailing use would continue to increase as populations increase if no gathers/removals occur in the future. Ecological degradation would continue to occur and increase as other land uses compound these effects.

3.6.8 Wild Horses

3.6.8.1 Affected Environment – Wild Horses

The Appropriate Management Level (AML) for the HMA was set at 7-10 wild horses in the 2004 HMAP based on monitoring data, multiple use objectives and public input. The most recent survey from 2024 estimated the wild horse population to be 510 adults which was 5,100 percent over the high end of AML. It is expected that horse populations have grown since then. A large wild horse population, wild horses residing outside of the HMA (census data), high utilization levels (see vegetation section) and the "3. Thin" to "4. Moderate thin" body conditions (Henneke) of some wild horses all indicate a forage shortage within the HMA.

The wild horse population is above the designated AML for the HMA. The wild horse population has exceeded the carrying capacity within the HMA and wild horses are utilizing areas within and outside of the HMA. Overgrazing by wild horses is negatively impacting the wild horses and the ecosystem. BLM personnel assessed wild horse body condition in 2024, utilizing the Henneke scoring system, which has nine categories that range from "1. Poor" to "9. Extremely Fat" (Henneke et al. 1983). The body condition scores from 2024, for the Lahontan wild horses ranged from "3. Thin" to "4. Moderate thin". The 2024 body condition scores indicate a portion of the wild horse population is not obtaining adequate amounts of forage to maintain their physical condition even though horses are residing outside the HMA. Approximately 98 percent of the animals appeared to be "3. Thin" to "4. Moderate thin" on the Henneke body condition scoring system. Most of these horses are expected to recover but the presence of horses outside of the HMA and low body scores are an indication of over grazing and lack of forage affecting both land health and wild horse health.

Although most of the horses are in reasonable health, there are individual animals that rated a "3. Thin" (Henneke) on the body condition scale during the fall season, which indicates that they were not able to find sufficient forage to maintain a "5. Moderate" score during the vegetative growing season when crude protein is high in palatable forage. As the wild horse population continues to increase, competition for resources, especially forage and water in drought years, would likely lead to even more animals in poorer body conditions.

The lack of forage in the HMA has resulted in wild horses leaving the HMA in search of forage and water resources. Most of the wild horse population is currently residing outside the HMA boundary. Monitoring data as described in section 3.6.2 show that the wild horse population is negatively impacting forage resources. As resources continue to be depleted, animals will continue to leave the HMA. For years, horses have been observed damaging fencing along the Carson River to access forage and water. The management objective to maintain wild horses within the HMA boundary has not been met.

The Proposed Action is necessary because an overpopulation of wild horses is resulting in overuse of upland and riparian vegetation and the degradation of both horse and wildlife habitat. As well as excess wild horses residing outside the HMA boundary, in areas not designated for wild horse use. Native bunchgrasses, the primary forage for wild horses and many wildlife species, are being overgrazed to the point they are declining. Many rodents require these grasses

and these rodents in turn provide a prey base for many raptors and small carnivores. Pronghorn, and deer require native vegetation and they in turn support carnivores. Riparian areas, which are critical for many species of native wildlife, are also being degraded by wild horse overgrazing due to an overpopulation of wild horses.

PopEquus Population Modeling

Population modeling was completed for the proposed action and alternative to analyze how the alternatives would affect the wild horse populations, using PopEquus (Folt et al. 2023). Analysis included removal of excess wild horses with sex ratio adjustments and no fertility control, as compared to the no action alternative (Appendix G). The primary objective of the modeling was to identify if any of the alternatives "crash" the population or cause extremely low population numbers or growth rates. Stating population size was set to 510 which reflects the wild horses estimate for the Lahontan HMA, with expected 10% herd growth projected. The results of the population modeling show that due to the low end of AML (7 animals), predicts that there's a relatively high chance of the herd dipping below the 7 animals at some point in the 10-years time period modeled. If monitoring through aerial surveys indicates that the herd size has decreased below low AML, then the BLM will introduce the appropriate number of additional wild horses to the HMA in order to maintain low AML.

Genetic Diversity

Because of history, context, periodic natural movements, and human-caused introductions, wild horses in the Lahontan herd are not a truly isolated population. The National Academies of Sciences report to the BLM (NRC 2013) recommended that a given wild horse range or HMA should not be considered an isolated genetic population. 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. Analysis of twenty-eight genetic samples from horses in the HMA was completed in 2004.

The 2013 National Research Council of the National Academies of Sciences report included evidence that shows that wild horses from this HMA are not particularly unusual genetically, with respect to other BLM-managed wild horse herds. Appendix F of the 2013 NRC report, which is a table showing the estimated 'fixation index' (Fst) values between 183 pairs of samples from wild horse herds. Fst is a measure of genetic differentiation, in this case as estimated by the pattern of microsatellite allelic diversity analyzed by Dr. Cothran's laboratory. Low values of Fst indicate that a given pair of sampled herds has a shared genetic background. 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, and only if values are above about 0.15 are any two sampled subpopulations considered to have evidence of elevated differentiation (Frankham et al., 2010). Fst values for wild horses sampled from Lahontan HMA had pairwise Fst values that were less than 0.075 (suggesting a level of differentiation somewhere between 'virtually none' and 'very little') with 122 other sample sets.

Based on the 2004 results, no action is necessary at this time. However, it is prudent to continue monitoring genetic diversity in the herd due to small herd size when at AML. The AML is

extremely small, and during long periods of time if the herd is kept within AML it is likely that some negative effects of inbreeding could emerge, unless there is an ability for exchange of individuals with other herds either by natural migration or managed introductions.

As is commonly done during modern gathers, more comprehensive baseline genetic information would be obtained through analysis of hair follicle samples during the first gather after a decision authorizing any action alternative, and then periodically in subsequent gathers (as per BLM 2010a). In contrast to blood-based genetic analyses, the modern methodology amplifies DNA from hair follicles to characterize genetic diversity in herds, based on a suite of microsatellite loci.

Diet

Numerous studies identify dietary overlap of preferred forage species and habitat preference between horses/burros, cattle, and wildlife species in the Great Basin ecosystems for all seasons (Ganskopp 1983; Ganskopp and Vavra 1986, 1987; McInnis 1984; McInnis and Vavra 1987; Smith et al. 1982; Vavra and Sneva 1978). A strong potential exists for exploitative competition between horses and cattle under conditions of limited forage (water and space) availability (McInnis and Vavra 1987).

Although horses and cattle are often compared as grazers, horses can be more destructive to the range than cattle due to their differing digestive systems and grazing habits. The dietary overlap between wild horses and cattle is much higher than with wildlife, and averages between 60 and 80 percent (Hanley 1982; Hansen et al. 1977; Hubbard and Hansen 1976; Krysl et al. 1984; McInnis and Vavra 1987). Horses are cecal digesters while most other ungulates including cattle, pronghorn, and others are ruminants (Beever 2003; Hanley and Hanley 1982). Ruminants, especially cattle, must graze selectively, searching out digestible tissue (Olsen and Hansen 1977). Horses, however, are one of the least selective grazers in the West because they can consume high fiber foods and digest larger food fragments (Beever 2003; Bauer et al. 2017; Hanley and Hanley 1982).

Wild horses can exploit the high cellulose of graminoids (grasses and grass-like plants), which have been observed to make up over 88 percent of their diet (Hanley 1982; McInnis and Vavra 1987). However, this lower quality diet requires that horses consume 20-65 percent more forage than a cow of equal body mass (Hanley 1982, Menard et al. 2002). With more flexible lips and upper front incisors, both features that cattle do not have, wild horses trim vegetation more closely to the ground (Beever 2003; Menard et al. 2002; Symanski 1994). As a result, areas grazed by horses may retain fewer plant species and may be subject to higher utilization levels than areas grazed by cattle or other ungulates.

Wild horses compete with wildlife species for various habitat components, especially when populations exceed AML and/or habitat resources become limited (i.e., reduced water flows, low forage production, dry conditions, etc.). Hanley and Hanley (1982) compared the diets of wild horses, domestic cattle and sheep, pronghorn antelope, and mule deer and found that horse and cattle diets consisted mostly of grasses, pronghorn and mule deer diets consisted mostly of shrubs (>90 percent), and sheep diets were intermediate. Due to different food preferences, diet

overlap between wild horses, deer, and pronghorn rarely exceeds 20 percent (Hanley and Hanley 1982; Hansen et al. 1977; Hubbard and Hansen 1976; Meeker 1979).

There is growing concern about limited water and forage available to wild horses, livestock, and wildlife in the desert climate of the Great Basin. Heavy use of forage near available water and competition between wild horses, livestock, and wildlife for limited forage and water has increased. In addition, wild horses can have an impact on native wildlife around water sources (Gooch et al. 2017, Hall et al. 2016, Crist et al. 2019). On multiple occasions, game camera photographs taken within this district have shown mule deer leaving a water source as wild horses approach.

As reviewed in Appendix H, wild horses have been observed digging 'wells' in intermittent stream beds where subsurface water is available within 5.56 feet of the sandy substrate surface (Lundgren et al. 2021). This is discussed further in the literature review in Appendix H. The BLM is not aware of published studies that document wild horses or burros in the western United States causing similar or widespread habitat amelioration on drier upland habitats such as sagebrush, grasslands, or pinyon-juniper woodlands. Increasing competition at the water source can increase animal stress and lead to emergency conditions where a failure to act may result in the suffering or death of individuals.

3.6.8.2 Environmental Consequences - Wild Horses

Alternative 1 (Proposed Action)

Under Alternative 1, all excess wild horses residing outside the HMA boundary would be removed, while removing excess wild horses from the HMA to achieve low-AML. This would decrease the existing overpopulation of wild horses in the course of successive helicopter drive trap and bait and water trapping operation over a course of multiple years. Wild horses within the Lahontan HMA would be managed within the AML range of 7 – 10 wild horses. If AML is achieved, then wild horses would be released back to the range to achieve a post-gather sex ratio of 60 percent males to 40 percent females at low AML for the potential breeding population; this would be approximately 4 males and 3 females. This Alternative would help reduce all the associated impacts to the wild horses and rangeland resources. Over the short-term, individuals in the herd would still be subject to increased, stress and possible death as a result of continued competition for water and forage until the project area's population can be reduced to the AML range. The areas experiencing Heavy and severe utilization levels by wild horses would likely still be subject to some excessive use and impacts to rangeland resources, those being concentrated trailing, riparian trampling, increased bare ground, etc. These impacts would be expected to continue until the project area's population can be reduced to AML range and concentration of horses can be reduced. Competition, among males, for females would be expected to increase while recruitment age for reproduction among males would be expected to decrease. These effects would be slight, as the proposed sex ratio is not an extreme departure from normal sex ratio ranges (refer to review of potential effects of gathers in Appendix H). Modification of sex ratios for a post-gather population favoring males would further reduce growth rates, because there would be a lower number of females present in the herd than if the sex ratio was closer to 50:50.

Available information about genetic diversity and relatedness to other herds gives no indication for concern about maintenance of self-sustaining population in the HMA, particularly as fertile animals can be introduced into the herd if the results of hair follicle-based genetic diversity monitoring indicate that would be warranted.

Various impacts to wild horses as a result of gather activities have been observed for over forty years. Under Alternative 1, impacts to wild horses would be both direct and indirect, affecting both individual animals and the population.

Removal of excess wild horses would improve herd health. Decreased competition for forage and water resources would reduce stress and promote healthier animals. This removal of excess animals should result in improved health and condition of mares and foals as the actual populaiton comes into line with the population level that can be sustained with available forage and water resources and would allow for healthy range conditions (and healthy animals) over the longer-term.

Bringing the wild horse population size back to low AML and implementing sex ratio adjustments would reduce damage to the range from the current overpopulation of wild horses and allow vegetation resources to start recovering, without the need for additional gathers in the interim. As a result, there would be fewer disturbances to individual animals and the herd, and a more stable wild horse social structure would be provided.

Impacts to individual animals may occur as a result of handling stress associated with the gathering, processing, and transportation of animals. The intensity of these impacts varies by individual animal and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individual animals from these impacts is infrequent but does occur in 0.5% to 1% of wild horses gathered in a give gather (Scasta 2019, along with new analysis in Cothran et al. (2024),). Other impacts to individual wild horses include separation of members of individual bands of wild horses and removal of animals from the population.

Helicopter Drive Trapping

The BLM has been conducting wild horse gathers since the mid-1970s and has been using helicopters for such gathers since late 1970's. During this time, methods and procedures have been identified and refined to minimize stress and impacts to wild horses during gather implementation. Published reviews of agency practice during gathers and subsequent holding operations confirm that BLM follows guidelines to minimize those impacts and ensure humane animal care and high standards of welfare (GAO 2008, AAEP 2011, Greene et al. 2011, Scasta 2019). Refer to Appendix B, for information on the methods that are utilized to reduce injury or stress to wild horses and burros during gathers. The Comprehensive Animal Welfare Policy (CAWP) would be implemented to ensure a safe and humane gather occurs and would minimize potential stress and injury to wild horses.

In any given BLM wild horse gather, gather-related mortality averages only about one half of one percent (0.5 percent), which is very low compared to the mortality rates typical in wild animal capture efforts (Scasta 2020). Approximately another six-tenths of 1 percent (0.6 percent) of the captured animals could be humanely euthanized due to pre-existing conditions and in accordance with BLM policy (GAO 2008, Scasta 2020). These data affirm that the use of helicopters and motorized vehicles has proven to be a safe, humane, effective, and practical means for the gather and removal of excess wild horses from the public lands. The BLM also avoids gathering wild horses by helicopter during the six weeks prior to and following the peak foaling season (March 1 through June 30).

Individual, direct impacts to animals include the handling stress associated with the roundup, capture, sorting, handling, and transportation of the animals. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. When being herded to trap site corrals by the helicopter, injuries sustained by animals may include bruises, scrapes, or cuts to feet, legs, face, or body from rocks, brush, or tree limbs. Rarely, animals would encounter barbed wire fences and would receive wire cuts. These injuries are very rarely fatal and are treated onsite until a veterinarian can examine the animal and determine if additional treatment is indicated.

Other injuries may occur after an animal has been captured and is either within the trap site corral or the temporary holding corral, during transport between facilities, or during sorting and handling. Occasionally, animals may sustain spinal injuries or fractured limbs but based on prior gather statistics, serious injuries requiring humane euthanasia occur in less than one animal per every 100 captured. Similar injuries could be sustained if animals were captured through bait and/or water trapping, as the animals still need to be sorted, aged, transported, and otherwise handled following their capture. These injuries result from kicks and bites, or from collisions with corral panels or gates.

To minimize the potential for injuries from fighting, the animals are transported from the trap site to the temporary holding facility where they are sorted as quickly and safely as possible, then moved into large holding pens where they are provided with hay and water. On many gathers, no wild horses are injured or die. On some gathers, due to the temperament of the horses, they are not as calm and injuries are more frequent. Overall, direct gather-related mortality averages less than 1 percent (GAO 2008, Scasta 2020).

Indirect individual impacts are those which occur to individual animals after the initial event. These may include miscarriages in females, increased social displacement, and conflict between males. These impacts, as with direct individual impacts, are known to occur intermittently during wild horse and burro gather operations. An example of an indirect individual impact would be the brief one-to-two-minute skirmish between older males which ends when one male retreats. Injuries typically involve a bite or kick with bruises which do not break the skin. Like direct individual impacts, the frequency of these impacts varies with the population and the individual. Observations following capture indicate the rate of miscarriage varies but can occur in about 1-5 percent of the captured females, particularly if the females are in very thin body condition or in poor health.

A few foals may be orphaned during a gather if a dam (mother) rejects a foal, a foal becomes separated from its dam and cannot be matched up following sorting, the mother dies or must be humanely euthanized during the gather, the foal is ill or weak and needs immediate care that requires removal from the mother, or the mother does not produce enough milk to support the foal. On occasion, foals are gathered that were previously orphaned on the range (prior to the gather) because the mother rejected them or died. These foals may be in poor, unthrifty condition. Every effort is made to provide appropriate care to orphan foals. Veterinarians may administer electrolyte solutions or orphan foals may be fed milk replacer as needed to support their nutritional needs. Orphan foals would be taken to the Northern Nevada Correctional Center to receive additional care. Despite these efforts, some orphan foals may die or be humanely euthanized if the prognosis for survival is very poor.

In some areas, gathering animals during the winter may avoid the heat stress that could be associated with a summer gather. By fall and winter, foals are of sufficient body size and age to be weaned. Winter gathers are often preferred when terrain and lower elevations make it difficult to gather wild animals during the summer months. Under winter conditions, horses are often located in lower elevations due to snow cover at higher elevations. This typically reduces the distance between animal concentrations and trap sites, reducing the potential for fatigue and stress. Deep snow can tire animals as they are moved to the trap but helicopter pilots allow the animals to travel slowly at their own pace. Trails in the snow are often followed, reducing the stress to the trap site. On occasion, trails can be plowed in the snow to facilitate the safe and humane movement of animals to a trap. Wild horses may be able to travel farther and over terrain that is more difficult during the winter, even if snow does not cover the ground. Water requirements are lower during the winter months, making distress from heat exhaustion extremely rare. By comparison, during summer gathers, animals may travel long distances between water and forage and become more easily dehydrated.

Through the capture and sorting process, animals are examined for health, injury, and other defects. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy. The BLM Policy for Animal Health, Maintenance, Evaluation and Response Permanent Instruction Manual 2021-007 (BLM 2021b) is used as a guide to determine if animals meet the criteria and should be euthanized. Animals that are euthanized for non-gather related reasons include those with old injuries (broken or deformed limbs) that cause lameness or prevent the animal from being able to maintain an acceptable body condition (greater than or equal to BCS 3); old animals that have serious dental abnormalities or severely worn teeth and are not expected to maintain an acceptable body condition; and animals that have serious physical defects such as club feet, severe limb deformities, or sway back. Some of these conditions have a causal genetic component and the animals should not be returned to the range to prevent suffering, as well as to avoid amplifying the incidence of the problem in the population.

Wild horses not captured may be temporarily disturbed and move into another area during the gather operation. Except for changes to herd demographics from removals, direct population impacts have proven to be temporary in nature with most, if not all, impacts disappearing within

hours to several days of release. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

It is not expected that genetic diversity would be unduly impacted by the action Alternative. Baseline genetic diversity sampling would be completed during gather operations. Furthermore, periodic, ongoing genetic monitoring is included in Alternative 1. That genetic monitoring would inform the BLM as to whether genetic diversity, as measured by observed heterozygosity, is acceptable, or whether any mitigating actions would be needed (BLM 2010a). If monitoring of observed heterozygosity levels, as measured from genetic monitoring samples, indicates that genetic diversity should be increased, the BLM may consider introducing outside animals to the herd. Under Alternative 1, management of the Lahontan herd could continue to use wild horse introductions from other HMAs to augment observed heterozygosity, the result of which would 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 2010a).

By maintaining the wild horse population within the AML range, there would be a lower density of wild horses across the HMA, reducing competition for resources and allowing wild horses to utilize their preferred habitat. Maintaining population size within the established AML would be expected to improve forage quantity and quality and promote healthy, self-sustaining populations of wild horses in a TNEB and multiple use relationship on the public lands in the area. Deterioration of the range associated with wild horse overpopulation would be avoided. Managing wild horse populations in balance with the available habitat and other multiple uses would lessen the potential for individual animals or the herd to be affected by drought and would avoid or minimize the need for emergency gathers, which would reduce stress to the animals and increase the success of these herds over the long term.

Water/Bait Trapping

Bait and/or water trapping generally requires a long window of time for success. Although the trap would be set in a high probability area for capturing excess animals residing within the area and at the most effective time periods, time is required for the animals to acclimate to the trap and/or decide to access the water/bait.

Trapping involves setting up portable panels around an existing water source or in an animal use area, or around a pre-set water or bait source. The portable panels would be set up to allow animals to go freely in and out of the corral until they have adjusted to it. When the animals fully adapt to the corral, it is fitted with a gate system. Allowing the animals time to acclimate creates a low-stress trap. During this acclimation period, the animals would experience some stress from perceived restricted access to the water/bait source by the surrounding panels.

When actively trapping animals, the trap would be checked daily. Wild horses would be either removed immediately or fed and watered for up to several days prior to transport to a holding facility. Existing roads would be used to access the trap sites.

Gathering excess animals using bait/water trapping could occur at any time of the year and would extend until the target number of animals is removed to relieve concentrated use by animals in the area, reach AML, to implement population control measures, or to remove animals residing outside HMA boundaries. Generally, bait/water trapping is most effective when a specific resource is limited, such as water during the summer months. For example, in some areas, a group of animals may congregate at a given watering site during the summer because few perennial water resources are available nearby. Under those circumstances, water trapping could be a useful means of reducing the number of animals at a given location, which can also relieve the resource pressure caused by too many animals. As the proposed bait and/or water trapping in this area is a low-stress approach to gathering of animals, such trapping can continue into the foaling season without harming the females or foals.

Impacts to individual animals would be similar to those for helicopter gathers and could occur as a result of stress associated with the gather, capture, processing, and transportation of animals. The intensity of these impacts would vary by individual and would be indicated by behaviors ranging from nervous agitation to physical distress. Mortality of individual animals from these activities is rare but can occur. Mortality rates from water / bait trapping wild horses are comparable or even slightly above those observed for helicopter drive trapping (Scasta 2020). Other impacts to individual animals include separation of members of individual bands and removal of animals from the population.

Indirect impacts can occur to animals after the initial stress event and could include increased social displacement or increased conflict between males. These impacts are known to occur intermittently during gather operations. Traumatic injuries could occur and typically involve bruises caused by biting and/or kicking. Animals may potentially strike or kick gates, panels, or the working chute while in corrals or traps, which may cause injuries. These impacts, like direct individual impacts, are known to occur intermittently during gather operations. Since handling, sorting, and transportation of animals would be similar to those activities under helicopter drive trapping, the direct and indirect impacts would be expected to be similar as well. Past gather data shows that euthanasia, injuries, and death rates for both types of gathers are similar.

Transport, ORCs, ORPs, and Adoption Preparation

During transport, potential impacts to individual animals can include stress, as well as slipping, falling, kicking, biting, or being stepped on by another animal. Unless animals are in extremely poor condition, it is rare for an animal to die during transport.

Recently captured animals, generally females, in very thin condition may have difficulty transitioning to feed. A small percentage of animals can die during this transition; however, some of these animals are in such poor condition that it is unlikely they would survive if left on the range.

During the preparation process, potential impacts to animals are similar to those that can occur during transport. The chance of injury or mortality during the preparation process is low but possible.

Mortality at ORCs averages approximately 5 percent (GAO-09-77, Page 51), which includes animals euthanized due to a pre-existing condition, animals in extremely poor condition, animals that are injured and would not recover, animals that are unable to transition to feed, and animals that die accidentally during sorting, handling, or preparation.

ORPs, known formerly as long-term holding pastures, are designed to provide excess horses with humane, and in some cases lifelong, care in a natural setting off public rangelands. Animals are maintained in grassland pastures large enough to allow free-roaming behavior and with the forage, water, and shelter necessary to sustain them in good condition. Females and sterilized males (geldings) (Appendix D) are segregated into separate pastures. About 37,000 animals in excess of the current adoption or sale demand (because of age or other factors such as economic recession) are currently located on private land pastures in Oklahoma, Kansas, Iowa, Missouri, Montana, Nebraska, Utah, Wyoming, and South Dakota. The establishment of ORPs is subject to a separate NEPA and decision-making process. Located mainly in mid- or tallgrass prairie regions of the United States, these ORPs are highly productive grasslands compared to more arid western rangelands. These pastures comprise about 400,000 acres (an average of about 10-11 acres per animal). Of the animals currently located in ORPs, less than 1 percent are age 0-4 years, 49 percent are age 5-10 years, and about 51 percent are age 11+ years.

Potential impacts to animals from transport to adoption, sale, or ORPs are similar to those previously described. One difference is when shipping animals for adoption, sale, or ORPs, animals may be transported for up to a maximum of 24 hours. Immediately prior to transportation, and after every 24 hours of transportation, animals are offloaded and provided a minimum of 8 hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of water and two pounds of good quality hay per 100 pounds of body weight with adequate space to allow all animals to eat at one time.

A small percentage of the animals may be humanely euthanized if they are in very poor condition due to age or other factors. Animals residing on ORP facilities live longer on the average, than animals residing on public rangelands, and the natural mortality of animals in ORP averages approximately 8 percent per year but can be higher or lower depending on the average age of the animals pastured there (GAO 2008).

Horses remaining or Released Back into the Lahontan HMA following Gather

The wild horses that are not captured during the gathers may be temporarily disturbed and may move into another area during the gather operations. Except for changes to herd demographics, the direct population-wide impacts from a gather have proven, over the last 20 years, to be temporary in nature with most if not all impacts disappearing within hours to several days of when animals are released back into the HMA.

No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence, and possible changes in specific band composition. There is the potential for the animals that have been desensitized to vehicles

and human activities to return to areas where they were gathered if released back into the HMA. The horses that remain in the HMA following the gather would maintain their social structure and herd demographics (age and sex ratios) as the proposed gathers would mainly be targeting specific individuals or bands. No observable effects to the remaining population from the gather would be expected.

There may be some animals with certain characteristics that may be desirable to maintain in the population these animals may also be released. Inbreeding is not thought to be an issue within the HMA, however if monitoring shows that levels of genetic diversity are determined to be an issue, a few horses from other HMAs may be released into the HMA.

Alternative 2 (No Action)

Under Alternative 2, there would be no active management to control the population size within the established AML at this time. If there is no gather, animal populations would continue to grow. Without a gather and removal now, the horse population could reach 1,454 adult horses in 10 years (Fall 2034) at an average rate of increase of 10 percent per year. However, limited forage and/or water resources would likely cause a mass die-off of wild horses and native wildlife through starvation and/or dehydration before the population reached this level.

Grazing use by wild horses would continue to exceed the amount of available forage. Competition between wildlife, livestock, and wild horses for limited forage and water resources would continue (NRC 2013). Damage to rangeland resources would continue or increase, potentially to the point of irreversible loss of native perennial vegetation that provides forage and wildlife habitat. Over time, the potential risks to the health of individual animals would increase, and the need for emergency removals to prevent their death from starvation or thirst would also increase. Over the long term, the health and sustainability of the wild horse population is dependent upon achieving a TNEB and sustaining healthy rangelands. Allowing wild horses to die of dehydration or starvation would be inhumane and would be contrary to the WFRHBA which requires that excess animals be immediately removed when necessary to achieve a thriving natural ecological balance. Allowing rangeland damage to continue to result from wild horse overpopulation would also be contrary to the WFRHBA which requires the BLM to "protect the range from the deterioration associated with overpopulation", "remove excess animals from the range so as to achieve appropriate management levels", and "to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area."

3.6.8.3 Environmental Effects - Wild Horses

3.6.8.3.1 Alternative 1 (Proposed Action)

The cumulative effects associated with the capture and removal of excess animals includes gather-related mortality of less than 1 percent of the captured animals (GAO 2008, Scasta 2020), about 5 percent per year associated with transportation, short-term holding in off-range corrals, adoption, or sale with limitations, and about eight (8) percent per year associated with ORPs (GAO 2008). In general, animals have higher annual survival rates on ORPs when effects of age are controlled for, because adequate forage and water are available. The higher apparent mortality rate is due to the tendency for younger animals to be adopted, so the animals on the

ORPs are older than the average animal on the range; older adult wild horses have lower survival rates in general (Ransom et al. 2016). This compares with natural mortality on the range ranging from about 5-8 percent per year for foals (animals under age 1), about 5 percent per year for horses ages 1 to 15, and 5-100 percent for animals ages 16 and older (Garrott and Taylor 1990; Jenkins 2000, Ransom et al. 2016). By comparison, in situations on the range where forage and/or water are limited, mortality rates increase, with the greatest impact to young foals, nursing females, and older animals. Animals can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their dam, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. If these conditions arise, BLM would need to conduct emergency gathers to prevent the wild horses from suffering from dehydration or starvation.

While humane euthanasia and sale without limitation of healthy animals for which there is no adoption demand are authorized under the WFRHBA, the BLM does not include those methods in management. Congress prohibited the use of appropriated funds for this purpose between 1987 and 2004 and again since 2010.

The other cumulative effects which would be expected under the Proposed Action would include continued improvement of upland vegetation conditions, which would in turn benefit native wildlife and wild horse populations as forage (habitat) quality and quantity are improved over the current level. Benefits from a reduced horse population would include fewer animals competing for limited forage and water resources. Cumulatively, there should be more stable horse populations, healthier rangelands, healthier horses, and fewer multiple use conflicts in the area over the short and long-term. Over the next 15 to 20 years, continuing to manage wild horses within the established AML range would achieve a thriving natural ecological balance and multiple use relationship on public lands in the area.

Adjustment of sex ratios to favor males should slow population growth and result in fewer gathers and less frequent disturbance to individual wild horses and the herd's social structure. However, return of wild horses back into the HMA could lead to decreased ability to effectively gather horses in the future as released horses learn to evade the helicopter.

3.6.8.3.2 Alternative 2 (No Action)

Under the No Action Alternative, the wild horse population could reach over 822 wild horses in four years (Fall 2028). Movement outside the HMA and onto adjacent lands would be expected as greater numbers of wild horses search for food and water for survival and impact larger areas of public and private lands. Heavy to excessive utilization of the available forage would continue and the water available for use could become increasingly limited. Ecological plant communities would be further damaged to the extent that they are no longer sustainable, and the wild and horse population would be expected to crash periodically (NRC 2013).

Emergency removals could be needed to prevent individual animals from suffering or death caused by insufficient forage and water. These emergency removals could occur as early as a few years from now. During emergency conditions, competition for the available forage and water increases. This competition generally impacts the oldest and youngest animals as well as

lactating females first. These groups would experience substantial weight loss and diminished health, which could lead to their prolonged suffering and eventual death. If funding and off-range facility space are not available, it is possible that the BLM would not be in a position to help starving animals via emergency gathers. If emergency actions are not taken, widespread wild horse death by starvation is possible and the remaining population could become severely skewed toward a higher frequency of males, as they are generally the strongest and healthiest portion of the population. An altered age structure would also be expected.

Cumulative impacts of increasing wild horse herd sizes would result in irreversible loss of native vegetation, forgoing the opportunity to improve rangeland health, and forgoing the opportunity to properly manage wild horses in balance with the available forage and water and other multiple uses. Attainment of site-specific vegetation management objectives and Standards for Rangeland Health would not be achieved. AML would not be achieved and the opportunity to collect the scientific data necessary to re-evaluate AML levels in relationship to rangeland health standards would be lost.

3.6.9 Weeds (i.e., Noxious, Invasive, Non-native, and Nuisance weed species)

3.6.9.1 Affected Environment - Weeds

Noxious weeds are defined by the Nevada Department of Agriculture (NDA) as any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate. Control of these species is regulated by state and federal law. An invasive species is any non-native plant that easily multiplies and causes multiple negative impacts on the natural ecosystem or landscape. A nuisance weed, as defined by the NDA, is any plant which is seen as bothersome and is ordinarily found throughout the state. These nuisance weeds have varying levels of negative impact and are not regulated by the state. Any of these categories of weeds may be a non-native species, meaning it originated in an area outside the local geography. Non-native species frequently lack the ecological control mechanisms from where they originated and can become invasive in new landscapes. All of these species can be analyzed together with regard to the alternatives in this environmental assessment.

Several noxious weeds have been found in both the project area and the cumulative impact area, including but not limited to hoary cress (*Cardaria draba)* and Russian knapweed (*Acroptilon repens)*. Some non-native and invasive species include but are not limited to hologeton (*Halogeton glomeratus)* and cheatgrass (*Bromus tectorum)*. Because a comprehensive weed inventory has not been completed for the entire area, we would expect the cumulative and project area of analysis to be typical of the CCD and it may have undetected weed populations.

Grazing, especially at heavy and severe intensities, can alter plant community dynamics in many ways. One of these changes includes an increase in noxious, invasive, non-native, and nuisance weed species compared to more desirable species. When horses exceed the upper AML, we would expect to see an increase in these weedy species. At the most severe levels of grazing, even noxious weed species may be consumed by malnourished animals in search of forage. Many of these species are toxic to wild horses, and this toxicity can be even more dangerous when animals are in a weakened condition.

3.6.9.2 Environmental Consequences - Weeds

3.6.9.2.1 Alternative 1 (Proposed Action)

Reduction of the size of weed populations and the spread of weed populations is expected under the Proposed Action which aims to reduce the wild horse population to the AML. Bringing the wild horse population to the AML would also reduce the risk of wild horse poisoning from eating weed species. At AML more palatable forage species would be available and wild horses would be less likely to select less palatable weed species. Removal of excessive grazing pressure may create a short-term increase in weedy annual species but would allow for a long-term plant community change towards perennial species through the process of succession. This would be a favorable change in land health.

Gather operations could create a potential to introduce new weed species into the specific trap, viewing, and holding areas through equipment, hay for domestic work horses, and vehicles. However, stipulations under the Proposed Action, Weed Management Required Design Features, which include surveying for noxious weed species at gather sites and limiting feed to certified weed free feed would minimize these impacts.

3.6.9.2.2 Alternative 2 (No Action)

Under the No Action Alternative, heavy grazing by wild horses would continue to alter the plant community in a way that spreads weed species. As the grazing becomes severe, these weed species may be consumed by wild horses that have no other available forage. Under stressful conditions, such as drought and lack of forage, these species, some of which are toxic, could harm horses. Over the long term, this spread in weedy species would deteriorate the total forage production of rangeland within the HMA and limit the carrying capacity. These annual species are also more susceptible to changes in forage production and would be severely limited in times of drought endangering the wild horses.

3.6.9.3 Environmental Effects - Weeds

3.6.9.3.1 Alternative 1 (Proposed Action)

Under the proposed action the wild horse population would be gathered to the low end of AML. Grazing at appropriate levels would reduce disturbance and have a positive influence on reducing the size and spread of weed populations. At AML more palatable forage species would be available and wild horses would be less likely to select less palatable weed species that could be toxic to horses.

3.6.9.3.2 Alternative 2 (No Action)

Under the No Action Alternative, larger weed populations and an accelerated rate of a spread would be expected. Overgrazing is damaging native perennial vegetative resources, as perennial species are reduced in the plant community bare ground is exposed and weed species can establish. The cumulative effect of no action would enlarge this trend to a broader area and impact additional areas beyond the HMA and immediate vicinity. The problem would continue to spread within and outside the HMA until the population was brought under control.

3.6.10 Riparian and Water Resources

3.6.10.1 Affected Environment – Riparian and Water Resources

There are few natural surface water sources within the gather project area. Wild horses primarily use water and riparian resources from the Carson River and Lahontan Reservoir. Flows in the river and water levels in the reservoir can vary greatly from year to year depending on annual runoff volumes from the upper watershed and reservoir management operations. Water is temporarily available in areas that flood seasonally and at livestock water troughs fed by groundwater wells.

Overall, riparian/wetland ecosystems make up a small fraction of the project area but are disproportionately important habitat for wildlife. They often provide the only available source of water for many miles, provide habitat needs for many species and support greater numbers and diversity of wildlife.

Riparian areas tend to stay healthy when they remain in a vegetated state and are relatively undisturbed (Belsky et al. 1999). Well-vegetated banks help to dissipate energy and reduce discharge velocities, allowing water to percolate into the soil, where it is stored for late season discharge and used by plants. Where vegetative cover is greatly reduced, bank stability is negatively impacted from the loss of vegetation and the associated root masses of those plants. In systems with excessive pressure, vegetation is often absent, bare ground is higher, and the soil compacted. These factors enable water to flow more quickly, resulting in erosion and decreased system functionality.

Wildlife, livestock, and wild horses can impact riparian/wetland areas through trampling and grazing of riparian vegetation. Currently, where wild horse use overlaps with grazing allotments, most of those allotments are permitted for domestic cattle where generally, operators pump groundwater wells and haul water rather than use natural water sources. Cattle grazing use generally occurs in the fall and winter when livestock are least likely to congregate near natural water sources.

Wild horses are grazing all year inside and outside the HMA and do congregate on natural water sources, especially during the summer. When plants are overgrazed and trampled, desirable native species can be replaced by less desirable species that produce little or no forage value. Early spring grazing can also adversely affect vegetation resources as a result of trampling of wet soils, uprooting of seedlings, and damaging mature plants. A decline in soil condition, plant cover, and plant species composition from trampling and overgrazing can result in bare soil and/or encourage the invasion and growth of invasive plants in riparian/wetland sites. The presence of large numbers of horses along the Carson River and Lahontan Reservoir is likely to cause impacts including trampling, trailing, and high utilization of some plant species. These impacts, in turn, can lead to a decline in the quantity and diversity of stabilizing riparian vegetation and subsequent increased risk of bank erosion and sedimentation. Water quality may also be impacted by fecal matter from the horses.

3.6.10.2 Environmental Consequences – Riparian and Water Resources

3.6.10.2.1 Alternative 1 (Proposed Action)

To avoid the direct impacts potentially associated with the gather activities, temporary gather sites and holding/processing facilities would not be located within riparian/wetland areas. Impacts from gather operations would likely be negligible relative to variations in the affected environment or would be of such short duration that they would not be measurable and would not remain any longer than the gather activities themselves. These effects include trampling of vegetation and alteration of sediments during the gather when animals cross riparian/wetland areas as they are herded to temporary gather sites.

Removal of wild horses to the low end of AML, would reduce utilization pressure and trampling/trailing at riparian/wetland zones. Reduced pressure is anticipated to allow regeneration of riparian vegetation which would lead to improved system functionality over time. Hoof action on the soil around banks and floodplains would be lessened which should lead to increased soil stability and decreased compaction and erosion. Improved vegetation around riparian areas would dissipate stream energy associated with high flows and filter sediment that would result in some associated improvements in water quality. There would also be reduced competition between wild horses and wildlife for the available water.

3.6.10.2.2 Alternative 2 (No Action)

Under this alternative, wild horses would not be removed. The wild horse population would continue to increase and therefore would continue to adversely impact riparian/wetland resources and their associated surface waters. Since wild horses have the potential to graze year-round (unlike livestock, where areas within allotments can be rested or deferred from grazing) and are also present in areas outside the HMA in areas that are not managed for wild horse grazing, wild horses can damage riparian areas in late summer and fall when little green forage is available in the uplands. Increased use at currently utilized wetland/riparian zones would lead to continued loss of vegetative, soil, and hydrologic functionality. Increasing horse numbers would likely result in even more horses traveling further in search of available water sources leading to an increased magnitude of wetland/riparian zones being impacted by wild horse use.

3.6.10.3 Environmental Effects - Riparian and Water Resources

3.6.10.3.1 Alternative 1 (Proposed Action)

Considered in the context of other existing and foreseeable management activities, the short-term impacts of the Proposed Action of gathering horses using trap sites and temporary holding facilities is not anticipated to meaningfully contribute to cumulative impacts. The intensity, magnitude and duration of the proposed action would have minor effects and are not expected to interact with any reasonably foreseeable actions.

The proposed action is expected to have long-term benefits to riparian and water resources. Removal of wild horses from areas within and outside of the HMA to the low end of AML would eliminate competition and reduce pressure on riparian vegetation and water.

3.6.10.3.2 Alternative 2 (No Action)

Under the no action alternative, wild horses would not be removed. The population would continue to increase and would continue to adversely impact riparian/wetland resources and their associated surface waters. Impacts to vegetation from wild horses are additive to existing plant stressors, including permitted livestock grazing and motorized recreation. Impacts to riparian/wetland areas are expected to be greater in plant communities that are more vulnerable to invasive plants as well as loss of native plant cover and/or soil stability. Overall, native riparian vegetation is expected to continue to degrade, resulting in decreased ecosystem resistance to additional disturbances.

3.6.11 Socioeconomics

3.6.11.1 Affected Environment - Socioeconomics

Socioeconomics are considered to be the value placed on the Lahontan wild horses that may contribute to local economies. At this time, there are no registered guided tours or known sales of commercial pictures being sold to increase the value to the communities from the wild horses that reside within or outside the HMA. It is acknowledged that some people who drive through the general area may stop and view or photograph the horses and BLM may not be fully aware of the magnitude of socioeconomic impacts from those activities.

3.6.11.2 Environmental Consequences - Socioeconomics

The overpopulation of wild horses can negatively affect wildlife enthusiasts who hunt, photograph, and guide big game animals. Some big game animals may have left the area or be in poor condition due to the overpopulation of wild horses. Although grazing permits have not been recently reduced as a direct result of the overpopulation, the resource degradation caused by excess horses on the land, as well as impacts from recent drought, have cumulatively placed a strain on many agriculture-related businesses in the area.

3.6.11.3 Environmental Effects - Socioeconomics

Based on available information, it is not possible to quantify the revenue or losses attributable to the Lahontan wild horses. It is recognized that for local industries, the excess horses negatively impact resources and many businesses that rely on healthy range conditions and healthy wildlife. It is also recognized that any revenue brought by tourism and photography of wild horses in the HMA is unknown.

4.0 LIST OF PREPARERS

The following list identifies the interdisciplinary team members' areas of responsibility.

Table 8: BLM Preparers/Reviewers

Name	Title	Project Expertise
Katrina Leavitt	Project Lead, Rangeland Management Specialist	Wild Horses & Burros, Vegetation, Livestock Grazing, Wild Horses & Burros
Holley Kline	Project Co-lead; Assistant Field Manager	Migratory Birds, Threatened or Endangered Species, Sensitive Species Animals, General Wildlife
Jonathan Gordon	Wildlife Biologist	Migratory Birds, Threatened or Endangered Species, Sensitive Species Animals, General Wildlife
Jason Wright	Archaeologist	Cultural Resources, Native American Religious Concerns, Paleontology
Cassandra Rivas	Natural Resource Specialist	Fuels and Fire
Lawrence Rose	Rangeland Management Specialist	Livestock Grazing, Weeds
Matt Fockler, PhD.	Great Basin Socioeconomic Specialist (ID, NV, UT)	Socioeconomics
Taylor Burnham	Geologist	Geology, Mineral Materials
Brian McMillan	Natural Resource Specialist	Forester
Melanie Hornsby	Planning and Environmental Coordinator / Military Liaison	NEPA Compliance
Nicole Goehring	Hydrologist	Farmlands (Prime & Unique), Floodplains, Water Quality (Surface/Ground), Wetlands/Riparian Zones, Water Quantity (Surface/Ground), Soils
Paul Amar	Outdoor Recreation Planner	Recreation, Travel Management, Wilderness/WSA, Lands with Wilderness Characteristics, Visual Resources
Jonathan Kalb	Realty Specialist	Land Use Authorization, Access
Frank Giles	State Air Resource Specialist	Air Quality
Thomas Mendoza	Botany	Botany, Special Status Plant Species

WH&B: Wild Horse and Burros; NEPA: National Environmental Policy Act; WSA: Wilderness Study Area;

5.0 PERSONS, GROUPS, OR AGENCIES CONSULTED

- Churchill County
- Lyon County
- Fallon Naval Air Station
- Fallon Paiute-Shoshone Tribe
- Walker River Paiute Tribe
- Nevada Department of Wildlife
- United States Fish and Wildlife Service

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