United States Department of Agriculture

United States Department of Interior

Spring Mountains Wild Horse & Burro Complex Herd Management Area Plan

Final Environmental Assessment

Forest Service
Humboldt-Toiyabe National Forest

Bureau of Land Management
Southern Nevada District

May 2022

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ENVIRONMENTAL ASSESSMENT

PROJECT INFORMATION

Project Name: Spring Mountains Wild Horse and Burro Complex Herd Management Area Plan

Project Initiation Date: 3/10/2013

Interdisciplinary Team Leader: Rixey Jenkins/Tabitha Romero

Deciding Official: Deborah Macneill/Angelita Bulletts

Districts: Spring Mountains National Recreation Area

Counties: Clark and Nye

Anticipated Implementation: 2022

Signing Authority: Spring Mountains NRA Manager/BLM Southern NV District Manager

PALS Tracking #: 40960

Project File: https://www.fs.usda.gov/project/?project=40960

General Location: Located within Clark and Nye Counties, Nevada the complex includes approximately 784,325 acres of NFS lands and BLM public lands.

Applicable Management Areas: The Complex is comprised of three Joint Management Areas (JMA), each of which has a paired USFS Wild Horse and Burro Territory (WHBT) and BLM Herd Management Area (HMA), as shown on Map 1 (Appendix A). Wild horses and wild burros (WHB) occur on all three JMAs.

CURRENT & DESIRED CONDITION

CURRENT CONDITION

The National Forest and Public Lands Enhancement Act of 1988 (P.L. 100-550) transferred public lands into the National Forest System. With that land transfer, portions of five Herd Management Areas (Lucky Strike, Mount Stirling, Last Chance, Potosi Mountain, and Red Rock HMAs) became Forest Service administered WHBTs. In 1993, Congress designated the Spring Mountains National Recreation Area (SMNRA) and in that same year USFS and BLM developed an Interagency Agreement (1993) that assigned BLM lead agency responsibility for the Red Rock WHBT (Red Rock and Potosi Mountain HMAs) and Johnnie WHBT (includes Mount Stirling, Last Chance HMAs). The agreement assigned the USFS lead agency responsibility for the Spring Mountain WHBT/Wheeler Pass HMA. Under that 1993 interagency agreement, each agency is responsible for setting and reporting the Appropriate Management Levels (AMLs) for the entire Complex, leading to inconsistencies between the two agencies.

CURRENT APPROPRIATE MANAGEMENT LEVELS

Red Rock Joint Management Area:

The 1996 SMNRA GMP and 1998 Las Vegas RMP listed tentative AMLs for Red Rock WHBT/Red Rock HMA at 50 horses and 50 burros.

In 2004, BLM completed the Decision Record (DR) and EA NV-050-04-346 Establishment of Appropriate Management Levels for the Red Rock Wild Horse and Burro Herd Management Area, which established a low and high AML of 16-27 for horses (South of State Route 160) and 29-49 for burros (North of State Route 160). That BLM AML determination did not account for allocation of forage from NFS lands within the Red Rock WHBT (aka Potosi Mountain WHBT). However, due to lack of public water sources on those NFS lands, the WHB use was incidental. For 12-month occupancy, this BLM AML determination is equivalent to a forage allocation of 324 Animal Unit Months (AUMS) for horses (Animal Unit (AU) factor of 1.0) and 294 AUMS for burros (AU factor of 0.5) for a total of 618 AUMS.

Spring Mountain/Wheeler Pass Joint Management Area:

In 1996, the SMNRA GMP established Spring Mountain WHBT/Wheeler Pass HMA AML at 47 horses, 20 burros (Cold Creek 26 horses and 0 burros; Wheeler Pass 11 horses and 0 burros; Wheeler Wash/Wallace Canyon 10 horses and 20 burros).

In 2005, the BLM completed the Decision Record and EA NV-052-05-399 Johnnie, Muddy Mountains, and Wheeler Pass Herd Management Areas, Establishment of Appropriate Management Levels – which established a low and high AML of 47-66 horses and 20-35 burros on Wheeler Pass HMA to be managed by the Forest Service. For 12-month occupancy, this BLM AML determination is equivalent to a forage allocation of 792 AUMS for horses (AU factor of 1.0) and 210 AUMS for burros (AU factor of 0.5) for a total of 1,002 AUM.

Johnnie Joint Management Area:

The 1996 SMNRA GMP and 1998 Las Vegas RMP listed tentative BLM AMLs for Johnnie WHBT/Johnnie HMA of 50 horses and 75 burros. In 2005, BLM Decision Record and Environmental Assessment NV-052-05-399 Johnnie, Muddy Mountains, and Wheeler Pass Herd Management Areas, Establishment of Appropriate Management Levels, established an upper and lower AML of 54-108 burros and 0 wild horses on Johnnie HMA. The BLM HMA was considered more suitable for wild burros than wild horses because of the vegetation components and extreme conditions of the Mojave Desert. Therefore, the forage allocation previously assigned to wild horses in the RMP was assigned to wild burros and increased the burro AML from 75 animals to 54-108 animals.

For 12-month occupancy, this BLM AML determination is equivalent to a forage allocation of 648 AUMS for burros (AU factor of 0.5). That evaluation did not account for allocation of forage from NFS lands within the WHBT (aka Mount Stirling WHBT). However, it did state that burros would be managed as one herd with the USFS Johnnie WHBT as available water was insufficient within the HMA alone.

Table 1. Current AMLs for each JMA by Agency

JMA	USFS AMLs set by 1996 SMNRA GMP		BLM AMLs set by 2004 & 2005 Decisions	
	Horse AML	Burro AML	Horse AML	Burro AML
Red Rock	50	50	16-27	29-49
Spring Mtn/ Wheeler Pass	47	20	47-66	20-35
Johnnie	50	75	0	54-108
Total	147	145	63-93	103-192

CURRENT HERD POPULATION ESTIMATES

Since 2005, thirteen aerial population surveys have been conducted. Most recently, in February 2021, a comprehensive aerial survey was conducted using simultaneous double-observer methods (Lubow and Ransom 2016), with flight paths designed by U.S. Geological Survey specifically for wild horses and burros on the Complex.

The survey design and statistical analysis allowed for estimates of horse and burro abundance, probabilities of detection, and confidence intervals (Lubow 2021), in keeping with recommendations from the National Academies of Sciences (NAS) National Research Council (2013).

The estimates shown in Table 2 reflect the most likely number of wild horses and burros, based on the best information available to the BLM and may not account for every animal within the HA/HMA/WHBT. Statistical analysis of data from aerial surveys results in herd size estimates that account for animals that are not detected by any observer on the flights. In years without surveys, herd size estimates rely on additional information, including known numbers of animals removed and estimated annual population growth rates (Griffin et al. 2020). Typically, growth rates used for projecting annual herd are approximately 20% for horses and 15% for burros, which is consistent with published values (reviewed in Ransom et al. 2016).

Table 2. February 2021 Population Estimate

JMA	Public Land Acres	NFS Acres	Total JMA Acres*	February 2021 Population Estimate	
				Horses	Burros
Red Rock	162,568	25,071	187,639	62	43
Spring Mtn/ Wheeler Pass	277,592	102,221	379,813	74	169
Johnnie	179,310	37,564	216,874	145	339
Total	619,470	164,856	784,326	281	551

*There are approximately 172,548 acres greater than 30 percent slope that are not considered suitable wild horse or burro habitat within the JMAs.

Excess wild horses and burros have been periodically removed from the Complex to achieve population levels in balance with the AMLs. WHB population sizes have exceeded the AML upper limit for many years. The most recent gather of the entire Complex was completed in 2007, when 289 wild horses and 571 wild burros were removed. In 2012, there was a nuisance burro gather in Red Rock HMA from the community of Blue Diamond. That 2012 gather removed 27 wild burros from the herd. The 2012 gather was necessary to prevent damage to private property and for public safety within the community and along State Route 159.

In 2014, there was a gather in the Pahrump Valley to capture burros that were outside of the Johnnie HMA. The 2014 gather removed 12 wild burros from the herd. This gather was necessary due to public safety concerns within the community, along State Route 160, and to prevent private property damage. In September 2015, there was an emergency gather of 234 wild horses in the Wheeler Pass HMA near the community of Cold Creek. That removal was necessary to prevent a large loss of animals to starvation and further deterioration of rangeland resources.

In December 2017, 117 burros were gathered in the Pahrump Valley to address public safety issues along State Route 160. In May 2018, there was an emergency gather of 148 wild horses in the Spring Mountain WHBT near the community of Cold Creek to prevent a large loss of animals to starvation and further deterioration of rangeland resources. In August 2019, there was an emergency gather of 237 wild horses in the Red Rock HMA due to a shortage of water in the area. The Complex was surveyed in February 2021 and current population estimates following this survey are shown in Table 2.

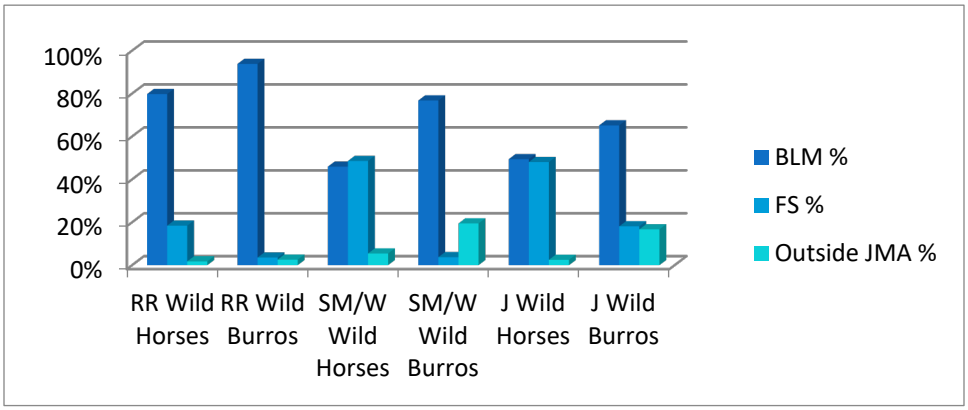
HERD POPULATION DISTRIBUTION

Red Rock JMA is characterized by mountainous areas and Mojave Desert lowlands. The mountains lay in a north to south direction with variable slopes; horses and burros typically use lands with slopes less than 30 percent. Desert shrub communities lead up into mountain shrubs and Pinyon-juniper at the upper elevations. Wild burros have typically occupied the JMA north of State Route 160. Wild horses are found south of State Route 160 and within the JMA. Wild burro body condition appears not to suffer as much as wild horses within this JMA during drought years. In 2002, an emergency gather was deemed necessary to remove horses from the north portion of the JMA,

due to lack of forage and water. Fencing along State Route 160 can inhibit north-south animal movements; however, a highway underpass allows for wild horses and burros to cross under the road.

Johnnie and Spring Mountain JMAs are characterized by Mojave Desert surrounded by low rocky desert mountains at the lower elevations. The JMA leads up into montane shrubs and Pinyon-juniper at the upper elevations. During hot months of the year, wild burros occupy areas characterized by ravines and shade. The wild horses tend to occupy the open country and higher elevations onto NFS lands. During the cooler season, wild horses and burros roam all over the JMA, where it is open and free of snow. Movement between these two JMAs and between BLM public lands and NFS lands occurs regularly as there are limited geographic barriers or fencing. The administrative boundary between Johnnie JMA and Spring Mountain/Wheeler Pass JMA is the Nye and Clark County line with no natural or anthropogenic barriers.

Figure 1. Average Population Distribution estimates based on thirteen survey flights (2005-2021)



Percentages represent animals by land ownership

RR = Red Rock JMA; SM/W = Spring Mountain/Wheeler Pass JMA; J = Johnnie JMA

The occurrence of wild horses outside the JMAs is most prevalent from the Spring Mountain WHBT where horses tend to move up into the Mount Charleston Wilderness (Figure 1). The occurrence of wild burros outside the JMAs is most prevalent in the Wheeler Pass and Johnnie JMAs where wild horses and burros move down toward the communities of Pahrump and those in Lee and Kyle Canyons.

FORAGE UTILIZATION MONITORING

Within the Mojave Desert Ecosystem, the BLM has recommended use levels of 25 percent for areas in poor ecological condition or for areas grazed during the growing season. Utilization transects have been conducted since 2007 throughout the project area. Utilization monitoring results show a consistent pattern of over-utilization of rangelands in the Complex and indicate a downward trend in range condition as key forage species are disappearing from the rangelands due to year-round grazing pressure from excess wild horses and burros.

Both BLM and FS use the Landscape Appearance Method on Key Forage as described in Technical Reference 1730 (BLM 1996). In 2020, monitoring on BLM public lands revealed that key forage species are absent on many sites. This is likely due to decades of overpopulation within the Complex and resulting overuse of key forage species. On NFS lands in 2018, key forage species were noted to be largely absent within 3 miles of perennial water on the Johnnie and Spring Mountain WHBTs. Wild horse and burro populations have grown to the point that the range can no longer sustain them at current levels as evidenced by the need for emergency removals in 2015, 2018 and 2019 and the disappearance of key forage species from the range. In areas where perennial forage species have disappeared, wild horses rely on annual grasses such as red brome for forage. Production of red brome fluctuates greatly from year to year depending on precipitation. In years when precipitation is well below normal, little to no production of red brome occurs and wild horses must resort to using less digestible shrub species such as Joshua trees, ephedra and yucca.

DESIRED CONDITION

The Toiyabe Forest Plan at page IV-4 describes how it is the desired condition that management plans will have been approved for all wild and free-roaming horse and burro territories and that wild horse and burro use will have been maintained at pre-existing levels. The plan also provides that the Forest should manage wild free-roaming horses and burros to population levels compatible with resource capabilities and requirements (IV-31).

The Spring Mountains National Recreation Area General Management Plan (GMP) provides additional goals and objectives regarding the management of wild horses and burros. In response to Goal 0-1 Conserve the health, diversity, integrity, and beauty of the ecosystem. The GMP sets the objective (0-15) to "Manage wild horses and burros in a thriving ecological balance with long-term ecosystem health. The GMP also describes at (0-16) Appropriate management levels (population size) for wild horses and burros will be based upon limiting factors: available water and forage, area sensitivity; and animal condition. Initial levels were to be set that: 7 percent of available water. It is also a desired condition of the GMP that: Impacts to riparian areas from wild horses, burros, and recreation have been eliminated and that water is available to wild horses and burros outside riparian areas.

The Las Vegas Resource Management Plan (RMP) (October 1998) guides management of wild horses and burros on public lands managed by BLM. The RMP establishes objectives to manage for healthy, genetically viable herds of wild horses and/or burros in a natural, thriving ecological balance with other rangeland uses and to maintain the wild, free-roaming character of the wild horses and burros on the public lands.

PURPOSE AND NEED & PROPOSED ACTION

PURPOSE AND NEED FOR THE PROPOSED ACTION

Wild horse and burro populations across the Spring Mountains WHB Complex (Table 2) exceed the current AMLs by 1.9 times for wild horses and 2.8 times for burros (Table 1). The distribution of the wild horses and burros outside the JMAs is impacting management of other resources in the Spring Mountains National Recreation Area. Over utilization by the wild horse and burro population across the complex is causing ecological harm to the environment and creating a situation that cannot be supported by the resources in the complex.

There is a need for the BLM and FS to manage the wild horse and burro populations consistently across the Spring Mountains WHB Complex to reduce the impacts to the environment caused by excessive animals, improve the ecological conditions across the complex and move toward a more balanced distribution of animals.

There is a need to manage the Complex to allow for wild horses and burros year-round access to essential habitat components (forage, water, cover, and space) and unimpeded natural movement within each JMA while controlling herd size and minimizing emigration of wild horses and burros outside the JMAs.

PROPOSED ACTION

The Proposed Action would implement a Herd Management Area Plan (HMAP). The implementation of this HMAP would be reaffirming and/or adjusting the AMLs for wild horses and burros within the JMAs based on in-depth analysis of population inventory, resource monitoring and other current available data and information. The Proposed Action includes adaptive management provisions to modify AMLs, if needed in the future, based upon the results of interagency monitoring, using the same procedures and protocols across the Complex. The Proposed Action would prevent deterioration of the rangelands and help maintain a thriving natural ecological balance and multiple use relationships.

Map 2 (Appendix A) shows the locations of previous gather sites within the Complex that could again be used for future gathers, as necessary.

APPROPRIATE MANAGEMENT LEVEL VERIFICATION/CLARIFICATION

The Proposed Action would establish the AMLs for each JMA as displayed in the following table.

Table 3. Proposed AML and Forage Allocations

JMA	Proposed AMLs		Forage Allocation at Upper AML*	
	Horses	Burros	Horses	Burros
Red Rock**	16-27	29-49	324 AUM	294 AUM
Spring Mtn/ Wheeler Pass	47-66	20-35	792 AUM	210 AUM
Johnnie***	14-34	54-108	402 AUM	648 AUM

*Forage allocation at upper AML is based on 12-month occupancy using a BLM Animal Unit (AU) factor of 1.0 for wild horses and 0.5 for wild burros.
**WHB use of the Red Rock JMA is primarily on BLM public lands.
***Wild horse use of the Johnnie JMA primarily occurs on NFS lands; Wild burro use of the Johnnie JMA primarily occurs on BLM public lands.

These AMLs reflect the 2004 BLM Decision Record of AML 16-27 for horses and 29-49 for burros for the Red Rock JMA. The BLM would continue to be the lead agency in management of the Red Rock JMA. Use of the Red Rock Territory by wild horses and burros is incidental.

These AMLs reflect the 2005 BLM Decision Record of AML of 47-66 horses and 20-35 burros on the Spring Mountain/Wheeler Pass JMA. The USFS would continue to be the lead agency in management of the Spring Mountain/Wheeler Pass JMA.

The Johnnie JMA AML for wild burros comes from the 2005 BLM Decision Record of AML. Wild burro use of NFS lands within the JMA is incidental. The Johnnie JMA AML for wild horses was determined by subtracting 648 AUM from the total forage allocation from the 1996 SMNRA GMP and 1998 Las Vegas RMP of 1,050 AUM. The remaining 402 AUM is roughly equal to 12-month occupancy by 34 wild horses. The proposed lower limit of 14 will allow for several years of population growth between gather cycles. Wild horse use of the BLM public lands within the JMA is incidental.

GATHER AND REMOVAL OF EXCESS ANIMALS

The Proposed Action includes methods to gather and remove excess wild horses and burros to keep the population between the low to mid-range of the AML in accordance with the Standard Operating Procedures in Appendix B. For large gathers, the primary capture methods would be helicopter drive trapping. Helicopter gathers would likely be conducted in the late fall or winter to avoid the summer heat in the Mojave Desert and no helicopter gathers will occur from March 1 to June 30, which is the peak of foaling season for wild horses. Bait and water trapping could occur at any time of the year, except as noted in the design elements section. A population survey flight would be conducted prior to each large gather to note current numbers and approximate locations of animals. The intent would be to limit large gathers of excess WHBs to every four or five years.

For small nuisance and public safety gathers, bait trap gathers would be used, as needed, to remove or relocate small bands of wild horses and burros back into the JMA and keep population levels at low- to mid-range AML. Small incremental gathers may be necessary, over several years, to reach target post-gather population sizes at low- to mid-range AML. Bait trap locations would be placed at specific locations where horses and burros are feeding and watering near accessible roads. Those bait trap sites would be determined by the in-house BLM/USFS personnel or in coordination with the contractor(s) and be located to address specific safety or animal concerns.

In cases where water is the most limiting factor, it may be practical to remove WHBs through water trapping. The use of hay or supplement (a.k.a. bait) would generally be used in areas like Cold Creek where forage is the limiting factor due to persistent heavy WHB use and drought conditions. Water is readily available in the immediate Cold Springs area though scarce elsewhere across the Complex. Traps would be placed on disturbed locations when

possible. In the case of water trapping, pens would be placed around developed, rather than natural, water sources where possible to reduce impacts to riparian areas.

Water or bait trapping generally results in the capture of a few animals at a time and requires lengthy time periods to gather larger numbers. Therefore, gather operations could be ongoing for many weeks or months verses helicopter which would be accomplished in a matter of days.

Catch, Treat, and Release (CTR) procedures could also be used for either large or small gathers to limit population growth and extend gather cycles. For helicopter drive trapping, multiple capture sites and temporary holding facilities could be used as noted in Map 2.

Excess animals would be shipped to agency holding facilities where they would be prepared for adoption, sale to qualified individuals or transport to off-range pastures. The timing and magnitude of initial gathers and removals would depend on availability of space in agency holding facilities and/or funding limitations and would be conducted in areas of animal concentration and impacted habitat.

Within the Spring Mountain/Wheeler Pass JMA, emphasis would be placed on gather and removal of wild horses from Mount Charleston Wilderness, Lee Canyon, Kyle Canyon, and Deer Creek. Gathers would be used to remove wild horses from Mount Charleston blue butterfly (MCBB) critical habitat in Lee Canyon. Wild horses that are habitually located in these areas, once removed, would not be returned to the Complex.

Emergency gathers would remain an option for reducing wild horse and burro numbers during times of unforeseen emergency such as wildfires or unusually adverse weather. This may be a necessary response to deterioration of wild horse and burro health. However, the intent would be to manage the herds at population levels that are sustainable during drought years.

POPULATION GROWTH SUPPRESSION (PGS)

Under the Proposed Action, use of population growth suppression techniques would be used to slow population growth rates to maintain appropriate management levels, achieve thriving natural ecological balance and extend the gather cycle. Specific PGS methods would include, but may not be limited to, fertility control vaccines, surgical sterilization (for both males and females), and sex ratio adjustment.

FERTILITY CONTROL VACCINES

Under the Proposed Action, fertility control vaccines could be implemented on any adult mares or jennies that are captured and released back into the JMA. Breeding age mares and jennies selected for release back to the range could be treated with *Porcine zona pellucida* (PZP) vaccine in one-year liquid formulation (ZonaStat-H), PZP vaccine in a pelleted formulation (PZP-22), *Gonadotropin Releasing Hormone* (GnRH) vaccine in a liquid formulation (Gonacon), or comparable vaccines. Standard Operating Procedures for the use of ZonaStat-H, PZP-22, and Gonacon vaccines would be used (Appendix C.). The ZonaStat-H PZP vaccine requires a booster dose be administered in the same year as the initial primer dose and requires additional vaccine treatments annually by remote darting or catch-treat-release (CTR) gathers.

SURGICAL STERILIZATION

Sterilization is a management technique that is specifically authorized by the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA). Castration (the surgical removal of the testicles, also called gelding or neutering) is a surgical procedure for sterilization that has been used for millennia. The procedure is straightforward and has a low complication rate. Removing a mare's ovaries (spaying) is a reliable sterilization method that has been used on mares that occupy the Sheldon National Wildlife Refuge (USFWS) to reduce herd growth rates, with low rates of surgical complications for treated mares (Collins and Kasbohm 2016). Sterilization would be conducted by a veterinarian and in accordance with the Standard Operating Procedures in Appendix D.

SEX RATIO ADJUSTMENTS

Under the Proposed Action, a typical wild horse sex ratio of the breeding populations may be skewed to favor a stallion to mare ratio of 60:40. Sex ratio manipulation, leading to a reduced fraction of mares in the herd, can be considered a form of contraceptive management, insofar as it can reduce the realized growth rate in a herd. By reducing the proportion of breeding females in a population (as a fraction of the total number of animals present), the technique leads to fewer foals being born, relative to the total herd size.

The wild burro sex ratio of the breeding populations would be maintained at a typical natural, relatively even ratio of male to female. There would be no effort to skew the ratios in favor of male burros

DESIGN ELEMENTS INCLUDED IN THE PROPOSED ACTION

Project design criteria are listed in Table 4 below. These criteria were developed to avoid or eliminate adverse impacts from project activities and are incorporated as an integrated part of the proposed action. Project design criteria are based upon standard practices and operating procedures that have been employed and proven effective in similar circumstances and conditions: Forest Service Manual and Handbook direction, Regional Watershed Conservation Practices (FSH 2509.22 for Region 1 and 4), LRMP standards and guidelines, and other management requirements that apply to the proposed activities.

Table 4. Project Design Elements.

Design Element	Activity	Where	When	Purpose
Cultural Resources				
Conduct archaeological surveys at locations of temporary facilities outside of existing areas of disturbance	Gathers and other times when temporary fences, corrals or holding areas are needed	At gather sites, temporary holding sites or other temporary facilities.	Prior to placement of the temporary facility	To avoid adverse impacts to historic properties. Meet requirements of Section 106 of NHPA.
Avoid all identified Cultural Resources by ground disturbing activities.	During gathers	Across entire project area	When discovered during gather operations	To avoid adverse impacts to potentially significant historic properties.
Cultural Resource Inventory Needs Assessment will be completed prior to authorization of gather activities	Gathers	BLM public lands	Prior to authorization of gather activities	Document the authorized officer's decisions related to the level of inventory necessary for the activities
Public Safety				
Place signs on roads used as gather points and staging areas to warn public of increased traffic, operations and movement	During gather operations	Along roads leading into gather area and at major intersections and portals	Prior to and during operations	Provide notice to public of increased traffic, air operations, and horse movement that may occur on, over or along the roads

Design Element	Activity	Where	When	Purpose
Notify right-of-way permit holders of operations.	Gather operations, bait trapping, and holding	Across operations area	Prior to operations	To inform permit holders of the time, location and duration of operations
Hazardous Material				
Do not use, produce, transport, release, dispose of or store hazardous materials within the operations area.	All activities	Everywhere	Always	To avoid risks associated with hazardous materials
A litter-control program would be implemented to keep ravens and other predators from being attracted to the project site. This program would include the use of covered, raven-proof trash containers (bins and dumpsters), removal of trash from the gather locations at the end of each workday.	All activities	Everywhere	Always	To prevent attracting ravens that may predate on sensitive species in areas. To maintain the NFS and BLM public lands
Noxious Weeds				
Only certified weed free feed will be brought into the JMA or gather sites.	During gather operations, bait trapping, and holding	At gather sites or temporary holding sites	When wild horses are being gathered or held. When FS or BLM stock are being used in gather or holding operations	To prevent the spread of noxious and invasive plant species into the area
Inspect/clean vehicles used in operation activities for weed seeds, dirt, mud, or plant debris prior to entering the project area.	Prior to operations	Outside project area	Prior to operations	To prevent the spread of noxious and invasive plant species into the area
Quarantine new mares or jennies introduced into local populations for 48 hours prior to introduction. Feed certified weed free feed.	Adjusting sex ratios or introducing genetic diversity	Holding area	Prior to release into herd	To allow experienced veterinarian to examine animals and to clear their digestive tracts of weed seeds before reintroduction to the local populations.
Quarantine animals and feed certified weed free feed for 48 hours if gather points and holding facilities are placed	Gather operations, bait trapping, and holding	Gather point and holding areas	Hold for 48 hours after gather	To clear their digestive tracts of weed seeds before reintroduction to the local populations.

Design Element	Activity	Where	When	Purpose
in area with preexisting weed infestation.				
Survey and monitor gather and holding areas for noxious and invasive plant species before placement of facilities and annually for three years post disturbance.	Gather operations, bait trapping, and holding	Gather point and holding areas	Before gather and post disturbance (annually for 3 years)	To prevent the spread of noxious and invasive plant species and into the area.
Recreation				
Avoid scheduling gather dates that would conflict with recreation events.	Gather operations, bait trapping, and holding	Across entire project area	Adjust gather schedule to not occur concurrently (Same space and time) with permitted recreation events	To avoid conflicts
Water Resources				
Protect water sources, riparian areas and sensitive resources, e.g. spring snails as well as riparian and wetland vegetation.	Gather operations, bait trapping, and holding	Water sources, springs, seeps, wetlands, groundwater dependent ecosystems	All times	To prevent damage to sensitive resources.
Bait traps, gather areas, and temporary holding facilities will not be set up in springs and riparian areas or drainages that feed into them.	Gather operations, bait trapping, and holding	Across entire project area	All times	To protect springs, riparian areas and associated drainages.
Gather routes will be designed to avoid riparian areas.	Gathers	Across entire project area	Pre-gather and during gathers.	To protect riparian areas.
Sensitive Plants				
Locate gather sites, temporary holding facilities, staging areas and other activities on or near existing roads or in previously disturbed sites whenever possible.	Gather operations, bait trapping, and holding	Across entire project area	Prior to operations	To prevent potential impacts to sensitive plant and wildlife species.
Avoid set-up or construction of facilities on or near known populations of USFS Intermountain Regional Sensitive (FS Sensitive) or BLM NV Special Status plant species.	Gather operations, bait trapping, and holding	Across entire project area	Prior to operations	To prevent potential impacts to known sensitive plant populations.

Design Element	Activity	Where	When	Purpose
Conduct all necessary botanical clearance surveys prior to any ground disturbance activities.	Gather site, bat trapping, and holding facilities	Across entire project area	Prior to ground disturbance activity	To identify and protect Federally listed threatened and endangered, USFS Sensitive, and BLM special status species.
Motor vehicle use is prohibited off designated roads.	All activities	NFS lands	All times	To prevent spread of noxious and invasive plants, impacts to sensitive plants, and wildlife and prevent the creation of off-road trails.
Visual Resources				
Gather sites, bait trapping sites and holding facilities would be in previously disturbed sites such as existing sand and gravel pits	All activities	Across entire project area	All times	Minimize potential visual resource impacts.
Photo document facility locations before and after operations.	All activities	Across entire project area	All times	To document changed conditions and potential resource site expansion.
Develop site restoration plans before facility construction	All activities	Across entire project area	Before construction	To help in restoration of site post use.
Wilderness and Wilderness Study Areas				
All facilities are located outside Wilderness areas	All activities	Designated wilderness areas	All times	To comply with the Wilderness Act. To maintain wilderness character.
All facilities are located outside Wilderness Study Areas (WSA).	All activities	Wilderness Study Areas	All times	To manage WSA as non-impairment.
Wildlife				
If a gather or trap site requires vegetation disturbance and must occur during bird breeding season, then a qualified biologist must survey the area for nests immediately prior to	Helicopter gathers and bait trapping	Across entire project area	March 1 – July 31	Compliance with Migratory Bird Treaty Act of 1918. Reduce nest abandonment and loss of young for migratory birds

Design Element	Activity	Where	When	Purpose
commencement of pen construction activities.				
Gather, trap sites, and staging areas should occur outside of sensitive butterfly habitat and verified by a qualified biologist	All gathers	FS Regionally Sensitive butterfly habitat	Year round	To limit potential impact to Regionally Sensitive butterfly species.
Gathers will occur in previously disturbed sites. When presented with multiple gather site options, the site with the lowest likelihood of adverse effects will be chosen.	All gathers	Across entire project area.	Year round	To limit potential for impacts to sensitive plant and wildlife species.
Desert Tortoise				
If a trap or holding site will be placed within tortoise habitat, a BLM wildlife biologist will inspect all sites for burrows and tortoise signs prior to constructing pens if conducted during the active season.	Gathers, bait trapping or holding	Identified Tortoise habitat	March 1 through October 1	Protect Desert Tortoise
Vehicles used as part of gather will travel at 25 miles per hour located in habitat	All activities	Across entire project area.	All times	Pursuant to Clark County Code of Ordinances Title 14.24.030(b).
Should a Desert Tortoise enter the area of activity, all activity shall cease until such time as the animal has left the area on its own accord.	All activities	Across entire project area.	All times	Protect Desert Tortoise.
If a Desert Tortoise is in *imminent danger*, the tortoise shall be moved out of harm's way and on to adjacent BLM land, using techniques described in the tortoise education program.	All activities	Across entire project area.	All times	Protect Desert Tortoise.
Workers will be instructed to check underneath all vehicles before moving them	All activities	Across entire project area.	All times	Protect Desert Tortoise that might be sheltering in shade of vehicle.
A tortoise education program will be given to all workers, permittees, and	All activities	Across entire project area.	All times	Protect Desert Tortoise.

Design Element	Activity	Where	When	Purpose
other employees or participants involved in these projects.				
Mount Charleston Blue Butterfly				
A qualified biologist will be on site during gathers to estimate and monitor impacts.	All activities.	MCBB Critical and Suitable Habitat	All times	Limit impacts to MCBB and its habitat
All gather infrastructure and vehicles would be staged outside of potential suitable habitat and approved by a qualified biologist prior to site use.	All activities.	MCBB Critical and Suitable Habitat	All times	Limit impacts to MCBB and its habitat
Gathers infrastructure and vehicles would be located in previously disturbed sites. When presented with multiple gather site options, the site furthest from potential suitable habitat and with the lowest likelihood of adverse effects (based on the larval host and nectar plant presence and densities) would be chosen.	All activities.	MCBB Critical and Suitable Habitat	All times	Limit impacts to MCBB and its habitat
Utilize passive bait and water traps as the first steps to wild horse and burro gathers within Lee Canyon.	All activities.	Lee Canyon	Year round	Limit impacts to MCBB and its habitat
In the event that gather actions cause horses to concentrate on MCBB habitat or if horse or burro behavior could affect MCBB, coordinate with qualified biologist to delay or halt gather activities, or adjust gather tactics to minimize impacts.	All activities.	MCBB Critical and Suitable Habitat	All times	Limit impacts to MCBB and its habitat
Within MCBB critical habitat, bait and water trapping would be conducted between August and March.	All activities.	MCBB Critical Habitat	August-March	Limit impacts to MCBB and its habitat

Design Element	Activity	Where	When	Purpose
Map suitable habitat as avoidance areas to minimize impacts to potential suitable habitat during pre- or post-gather monitoring and when gathers occur on foot or on horseback. If walking through habitat is required, individuals will avoid stepping on larval host and nectar plants.	All activities.	MCBB Critical and Suitable Habitat	All times	Limit impacts to MCBB and its habitat
All contractors and individuals implementing monitoring or gather activities in MCBB critical habitat will be educated by a qualified biologist about the life history, location, and habitat characteristics of MCBB prior to implementation.	All activities.	MCBB Critical Habitat	All times	Limit impacts to MCBB and its habitat
No helicopter gathers will be performed in Lee Canyon to reduce potential disturbance to MCBB and their habitat.	All activities.	Upper Lee Canyon	All times.	Limit impacts to MCBB and its habitat
Potential suitable habitat would be avoided when deploying fertility controls.	All activities.	MCBB Suitable Habitat	All times	Limit impacts to MCBB and its habitat
Wild horses / burros				
All gathers will comply with the BLM Permanent Instruction Memorandum 2021-002, Wild Horse and Burro Comprehensive Animal Welfare Program (BLM 2021)	All activities	Complex-wide	All times	To ensure welfare of wild horses and burros.
Helicopter gathers of wild horses during the foaling season (March 1-June 30) is prohibited.	Helicopter gathers	Complex-wide	March 1 – June 30	To avoid disturbance and distress on wild horse mares, wild burro jennies, and their foals.
Bait and water trapping will be limited to previously disturbed areas when possible.	Bait and water trap gathers.	Complex-wide	All times	To limit disturbance to areas with existing disturbance.
Maintain or update cattle guards to prevent wild horses and burros form	Complex infrastructure management	Complex-wide	All times	To protect the health and safety of wild horses and burros

Design Element	Activity	Where	When	Purpose
being caught in the grill of the cattle guard.				
Large gathers would require dust abatement procedures at holding facility and gather corrals.	At holding facilities and gather corrals.	Complex-wide	During holding and gathering.	To prevent dust, to provide for the health and safety of workers, public and WHB.

MONITORING AND EVALUATION

AERIAL POPULATION SURVEYS

Aerial population surveys would be conducted using U.S. Geological Survey double observer protocols (Griffin et al. 2020). These protocols have been validated for applications to wild horses and burros (Lubow and Ransom 2016). Flight lines in the Complex are specifically designed to maximize efficient and complete survey patterns. Survey results would include statistical analysis for determining a probability of detection and population estimates with confidence intervals. These surveys would be in addition to any ground inventories that may be conducted within all or portions of a JMA. Flight surveys would be done at a minimum before any 5-year or 10-year assessment.

RANGE CONDITION/TREND MONITORING

Rangeland condition and trend monitoring may vary by site location. A monitoring plan would be developed to determine which previously established plots would continue to be monitored. Both agencies would use ecological site inventories and descriptions to the greatest extent possible.

UTILIZATION MONITORING AND AML ADJUSTMENTS

Future utilization monitoring and use pattern mapping would be based on the same monitoring protocol by both agencies across the entire JMA using the key area concept. Adjustment of the AMLs in the future would be based on the multi-tiered analysis described in BLM WHB Handbook H-4700-1 (BLM 2010).

GENETIC DIVERSITY AND AML ADJUSTMENTS

Hair follicle samples would be collected and submitted for genetic analysis during future gather operations. Hair samples have been collected from horses during past gathers for baseline information (Cothran 2003, 2009, 2010a, 2010b). Hair follicle samples would be used to monitor the observed heterozygosity (a measure of genetic diversity) of each herd. If the genetic monitoring results indicate that genetic diversity has decreased to an unacceptably low level in terms of observed heterozygosity or risk of inbreeding depression (BLM 2010), the genetic diversity of the herd would be augmented by relocation of fertile wild horses and/or burros from one of the other JMAs within the Complex, or from animals from other HMAs or WHBTs with similar or desired genetic traits. The primary consideration in the choice of any introduced individuals will be enhancing the genetic diversity of the receiving herd, but the introduced breeding adults could also be selected to promote particular physical characteristics in the herd's offspring (i.e. good conformation).

NOXIOUS WEED ABATEMENT

All gather sites, holding facilities, camping areas, and other areas of concentrated activities during gather operations within the JMA, would be recorded with Global Positioning System (GPS) equipment and monitored for weeds using the principles of Early Detection Rapid Response (EDRR) and budgeted at the project level for no less than three years. Noxious weeds would be controlled as authorized under applicable Agency weed control decision

documents. Areas of extensive disturbance and those of concentrated activities will be evaluated for the need for restoration. Restoration plans will be written in compliance with applicable laws and regulations.

WILDERNESS AND WILDERNESS STUDY AREAS

LA MADRE MOUNTAIN (LMW) WILDERNESS, MT CHARLESTON WILDERNESS (MCW), AND RAINBOW MOUNTAIN WILDERNESS (RMW)

The management objectives for wilderness area portions of the JMA are to have no (zero) wild horses and burros present. The Brownstone Basin (LMW) and Rainbow Springs (RMW) areas as well as the Mt. Charleston Wilderness would be monitored for presence of wild horses and/or burros in accordance with monitoring direction set out in the La Madre Mountain Wilderness and Rainbow Mountain Wilderness Management Plan and the Toiyabe National Forest Management Plan.

Management actions should be used to prevent wild horses and burros from moving into or through the three wilderness areas. Control of wild horse and burro access into the wilderness is typically more successful when effective control measures are employed outside the wilderness. Periodic removal of animals may be needed, and measures may be taken to prevent wild horses or burros from entering some areas. Generally, such removals would be conducted during winter, when snows push wild horse and burros down to lower elevations.

If gathers are needed, on-the-ground activities within wilderness would be accomplished on foot or using pack stock. If the minimum tool analysis results in the need for motorized means for wild horse or burro gathers, aircraft, including helicopters, may be used to survey, capture, and monitor wild horses or burros. However, aircraft may not land inside wilderness boundaries, except in cases of emergency or other instances that may be authorized by the appropriate Responsible Official.

In cases where impacts to springs and riparian systems result from wild horses or burros, mitigation measures may be employed to prevent further degradation or to restore wilderness character. Additional analysis would be needed for any gathers using motorized or mechanized means in wilderness.

MOUNT STIRLING WILDERNESS STUDY AREA (MSWSA)

The Proposed Action includes the entire Mount Stirling Wilderness Study Area (MSWSA). Spring water sources within MSWSA are key sources of water for WHBs within a large portion of Johnnie and Spring Mountain JMAs. In the future, if the WSA is congressionally designated as Wilderness, then a determination of WHB habitat suitability and occupancy would need to be made. However, currently, such a determination is beyond the scope of this analysis. The objective is to manage WHB populations at appropriate management levels to sustain ecosystem health within the WSA.

The MSWSA is managed to the non-impairment standard (i.e. temporary and does not create surface disturbance). Monitoring may occur in three ways: aerially, on foot or horseback for a day or two in an area, and motor vehicles restricted to identified roadways. A WSA is managed to maintain Wilderness character; therefore, monitoring and mitigation measures as outlined for Wilderness areas above (WHB use and impacts therefrom) would be employed.

CONSIDERATION OF NO ACTION

Under the No Action Alternative, the Agencies would continue to implement their respective decisions as outlined in the Background section. In summary, the 1) current Appropriate Management Levels would remain the same without consistency between the two Agencies; 2) herd population growth would continue to grow unsustainably at the estimated 20 percent per year; 3) distribution of the herds would continue to expand into the wilderness and outside their respective herd management areas/territories; and 4) herd grazing utilization would continue unchecked.

PROJECT SCREENING

REGULATORY CONSIDERATIONS

Given the nature of the proposal, the Responsible Official is requesting documentation to demonstrate compliance with the following regulatory considerations in addition to NEPA:

☒ **NFMA/Land Management Plan**

☒ **Endangered Species Act (ESA)**

☒ **Sensitive Species (FSM 2670)**

☒ **National Historic Preservation Act (NHPA)**

☒ **Tribal Consultation**

☒ **Clean Air Act (CAA)**

☒ **Clean Water Act (CWA)**

☒ **2001 Roadless Area Conservation Rule**

☒ **Pertinent Executive Orders**

PUBLIC INVOLVEMENT

The proposal was first published in the Schedule of Proposed Actions on January 1, 2013. The proposal was provided to the public and other agencies for comment during the 30-day combined, scoping and opportunity to comment period that began on June 13, 2013. The legal notice for opportunity to comment was published in the Reno Gazette Journal on June 14, 2013, which is the newspaper of record since the USFS is the lead agency.

In addition, as part of the public involvement process, three USFS and BLM joint public meetings were held: 1) June 25, 2013 in Pahrump, NV; 2) June 26, 2013 in Good Springs, NV; and 3) June 27, 2013 in Cold Creek, NV. Transcripts of each meeting can be found at the following link: https://www.fs.fed.us/nepa/fs-usda-pop.php?project=40960

Using the comments from the public, other agencies, and local Tribal members, the interdisciplinary team developed a list of issues to address, as noted below. We received comments from 98 unique respondents, including the statements made at the public meetings. We received 77 letters in letter format, 11 of which were form letters. Also included in the American Wild Horse Preservation Campaign submittals was a listing of 7,669 comment endorsers to the form letter. The *Response to Public Comment* can be found at the link noted above and in the project record.

A Preliminary EA was developed and released for an official 30-day public comment period from September 29, 2021 to October 29, 2021. The comment period was announced through gov delivery to approximately 1,562 groups, individuals, Tribes, and state and federal agencies. The availability of the Preliminary EA for public comment was also announced with a news release sent to local media. We received a total of 19 form letters and 48 letters from 64 unique respondents. Comments were considered and responses can be found in the project record.

RESOURCE AREAS CONSIDERED FOR ANALYSIS

The following resource areas were analyzed in detail because they have the potential to be directly or indirectly impacted by implementing the proposed action.

- Wildlife
- Sensitive Species
- Soil, Water, Riparian Areas
- Wild Horses and Burros
- National Historic Preservation Act
- Tribal Consultation
- Special Management Areas
- Clean Air Act
- Clean Water Act

The Environmental Impacts section of this EA describes the specific issues for each resource area and the indicators used to identify direct, indirect and cumulative effects.

CONCERNS IDENTIFIED BUT NOT ANALYZED IN DEPTH

A list of concerns and reasons regarding the rationale to not analyze them in detail may be found in the *Response to Public Comment*.

Concerns were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher-level decision; 3) unrelated to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review…" (Sec. 1506.3).

A concern that was often raised in public scoping was that large helicopter gathers stampede and traumatize wild horses and burros, break up the social structure of family units, and are inhumane treatment of those animals. The Interdisciplinary team (IDT)determined this concern is not an accurate characterization of helicopter gathers. A discussion concerning helicopter capture can be found in the WHB analysis in the Environmental Impacts section of this EA.

Another concern raised during public scoping was the economic effects that could result from the Proposed Action; particularly the costs of placing excess wild horses and burros into off-range pasture facilities. The IDT team determined that this concern is outside the scope of the proposed action.

ENVIRONMENTAL IMPACTS REVIEW

PLANNING RULE

On April 9, 2012 the Department of Agriculture issued a final planning rule for National Forest System land management planning (2012 Rule). None of the requirements of the 2012 Rule apply to projects and activities on the Humboldt-Toiyabe National Forest, as the Toiyabe Forest Plan was developed under the 1982 planning rule (36 CFR §219.17(c)). Furthermore, the 2012 Rule explains, "[The 2012 Rule] supersedes any prior planning regulation. No obligations remain from any prior planning regulation, except those that are specifically included in a unit's existing plan. Existing plans will remain in effect until revised" (36 CFR §219.17). The 2012 Rule does however apply to plan amendments, including the project-specific amendment should one be required.

NATIONAL FOREST MANAGEMENT ACT (NFMA) – LAND MANAGEMENT PLAN CONSISTENCY

The pertinent specialist has reviewed the proposal and made the following determinations regarding proposal consistency with applicable Land Management Plan direction, standards and guidelines.

Botany: Consistent

Cultural/Heritage: Consistent

Engineering: N/A

Fisheries: Consistent

Fuels: Consistent

Hydro: Consistent

Lands/Special Uses: N/A

Minerals: N/A

Range: Consistent

Recreation: Consistent

Scenic Resources: Consistent

Soils: Consistent

Silviculture: N/A

Special Management Areas: Consistent

Wildlife: Consistent

NEED FOR PLAN AMENDMENT

Upon review of the 1986 Toiyabe plan (as amended) and direction in the 2015 Forest Service Handbook (FSH 1909.12 (21.33), it was determined that a plan amendment for the proposed action was not required. The proposed action would facilitate meeting the AMLs provided in the SMNRA GMP Objectives (11.12, 13.10 and 14.8). Using the AMLs presented in table three the territories would be managed at the levels defined in the Herd Management Plans. Providing a range for the AML is consistent with the Forest-Wide standard to "Manage wild horses and burros to populations compatible with resource capability" (1986 Toiyabe NF LRMP IV-31), and the 1996 SMNRA GMP guideline 0.102 directing the forest to conduct gathers when populations exceed the AML by 15 percent.

ENDANGERED SPECIES ACT

THREATENED, ENDANGERED, PROPOSED AND CANDIDATE SPECIES &/OR CRITICAL HABITAT

The pertinent specialists reviewed the proposal and made the following determinations for threatened, endangered and/or proposed species:

Botany: No Threatened, Endangered, Proposed, Candidate (TEPC) species or habitat occur in the project area.

Fisheries: No Aquatic Threatened, Endangered, Proposed, Candidate (TEPC) species or habitat occur in the project area.

Wildlife: TEPC species or habitat occur in the project area. U.S. Fish and Wildlife Service (FWS) consultation has occurred (Table 5):

Table 5: TEPC Effect Determinations for ESA

Species/Habitat	Status	Proposed or Designated Critical Habitat Present?	Proposed Action Determination*	Brief Rationale
Mount Charleston blue butterfly ***Icaricia shasta ssp. charlestonensis***	Endangered	Designated	LAA	Direct effects are anticipated to occur if gathers are conducted but will be short in duration and localized. Design criteria minimize direct effects. Indirect effects are beneficial to the species. Removal of WHBs from designated critical habitat and potential suitable habitat decreases interspecific competition for resources. Population growth suppression decreases intraspecific competition and would reduce the rate of spread of the herds, and frequency for need of future gathers, further minimizing long term impacts to the species. Overall the proposed action is expected to result in long-term beneficial effects.
Desert Tortoise ***Gopherus agassizii***	Threatened	Designated	LAA	The herd management areas are very low to moderate tortoise

Species/Habitat	Status	Proposed or Designated Critical Habitat Present?	Proposed Action Determination*	Brief Rationale
				habitat. There is potential for tortoises to wander into the project areas. The direct impacts of the proposed action desert tortoise would be killing or maiming of animals during gather and trapping activities, increased potential for harassment, and displacement due to noise. All impacts from gathering and trapping activities would be short-term and localized. Impacts would be beneficial in the long-term (for removing excess WHBs) based on implementation of Design Elements. No significant impacts would be anticipated to individuals, populations, or critical habitat.
Pahrump Poolfish ***Empetrichthys latos***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Southwestern willow flycatcher ***Empidonax traillii extimus***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Yuma clapper rail ***Rallus obsoletus yumanensis***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Ash Meadows Amargosa pupfish ***Cyprinodon nevadensis mionectes***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Ash Meadows speckled dace ***Rhinichthys osculus nevadensis***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Devil's Hole pupfish ***Cyprinodon diabolis***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Warm Springs pupfish ***Cyprinodon nevadensis pectoralis***	Endangered	No	NE	This species does not occur in the action area and no habitat is present.
Ash Meadows naucorid ***Ambrysis amargosus***	Threatened	No	NE	This species does not occur in the action area and no habitat is present.

*__NE__ – No Effect; __NLAA__ – May Affect, Not Likely to Adversely Affect; __LAA__ – May Affect, Likely to Adversely Affect.

SUPPORTING PROJECT DOCUMENTATION

Table 6: Applicable Project File Documentation to Support ESA Compliance

Documentation Type	File Name (if applicable/needed)
Biological Assessment	BA WHB HMAP Final
Biological Opinion for MCBB	Pending Completion of Consultation
Programmatic Biological Opinion for Desert Tortoise	08ENVS00-2019-F-0153

SENSITIVE SPECIES

The pertinent specialists reviewed the proposal and made the following determinations for sensitive species:

Amphibians, Birds, Invertebrates, Mammals, and Reptiles: See determinations in Table 7.

Botany: See determinations in Table 8.

Table 7: Sensitive Wildlife Species Impact Determinations

Species	Proposed Action Determination*	No Action Determination*	Rationale
Desert bighorn sheep ***Ovis canadensis nelsoni***	BE	MINT	Under the Proposed Action, removal of wild horses and burros will likely have an overall beneficial effect for desert bighorn sheep. The reduction of WHB herd numbers to AMLs would reduce intraspecific competition of forage and water resources between the species. Long term improvements to vegetation quantity and quality foraging habitat are expected once WHBs are at AMLs. Under the No-Action Alternative, forage and range conditions, especially in the Potosi area where desert bighorn and wild horse and burro range overlap, would continue to decline. Increased pressure on water resources and forage would continue to grow as WHB numbers increase.
Townsend's big-eared bat ***Corynorhinus townsendii pallescens***	NI	NI	Projects would not impact roosting sites or foraging sites.
Spotted bat ***Euderma maculatum***	NI	NI	Projects would not impact roosting sites or foraging sites.
Northern goshawk ***Accipiter gentilis***	BE	MINT	The Proposed Action may result in temporary avoidance of gather locations. In the long term, the Proposed Action would enhance understories and herbaceous cover by maintaining healthy rangeland utilization levels through the reduction of WHB numbers to AMLs. This may improve prey species diversity for all raptors in the long term.

Species	Proposed Action Determination*	No Action Determination*	Rationale
			Under the No-Action Alternative, increased WHB grazing intensity and frequency would increase the likelihood of altering the vegetation structure and reducing the amount of forage and habitat for goshawk, peregrine falcon and flammulated owl prey species. This may eventually decrease prey abundance and/or prey species diversity, leading to additional exertion of energy for foraging. Long term this may lead to nutritional stress on adults and their nestlings.
Peregrine falcon ***Falco peregrinus var. anatum***	BE	MINT	Same as above.
Golden eagle ***Aquila chrysaetos***	BE	MANLAA	Same as above.
Flammulated Owl ***Psiloscops flammeolus***	BE	MINT	Same as above.
Bald eagle ***Haliaeetus leucocephalus***	NI	NI	Potential habitat does not occur in the project area
Migratory Birds	BE	MANLAA	Direct effects to migratory birds are anticipated to be very minimal as a result of the Proposed Action. Removal of wild horses and burros will likely have an overall beneficial effect to habitat for migratory birds because of long-term improvements to vegetation quantity and quality, and consequently available forage and prey species. Under the No-Action Alternative, increased WHB grazing intensity and frequency would increase the likelihood of altering vegetation structure and reducing the amount of habitat for migratory birds (specifically ground nesting species and deceased availability of nesting materials), as well as a potential decrease in forage for migratory birds and their prey species.
Spring Mountains dark blue butterfly ***Euphilotes ancilla ssp.***	BE	MINT	Under the Proposed Action, design criteria would prevent butterfly habitat from being impacted or degraded as a result of gather operations. Reduction of WHBs to AML would protect butterflies in the long term. Under the No-Action Alternative, increased WHB grazing intensity and frequency would increase the likelihood of utilization of less

Species	Proposed Action Determination*	No Action Determination*	Rationale
			palatable larval host and nectar plants as forage. This may eventually decrease habitat quality and/or reduce the availability of necessary larval host plants.
Spring Mountains acastus checkerspot ***Chlosyna acastus robusta***	BE	MINT	Same as above.
Monarch butterfly ***Danaus plexippus***	BE	MINT	Same as above.
Morand's checkerspot butterfly ***Euphydryas anicia morandi***	NI	NI	Habitat occurs within the project area but will be avoided and impacts from gathers are expected to be nominal from animal movement or gather activities.

Determinations: NI – No Impact; **BE –** Beneficial Effect; **MINT** – May impact individuals, but not likely to cause a trend to federal listing or loss of viability; **MANLAA** - May affect, not likely to adversely affect.

Table 8: Sensitive Plant Species Impact Determinations

Species	Proposed Action Determination*	No Action Determination*	Rationale
Rough Angelica ***Angelica scabrida***	MINT	MILT	The Proposed Action would reduce utilization levels and contribute to the recovery of plant species of concern populations and their habitats. Managing populations of WHBs to within the proposed AML ranges would reduce the risk of damage to plant species of concern from overgrazing and trampling. Reduction of WHB populations would reduce foraging outside of WHBTs and HMAs, improve sensitive habitats and reduce impacts to plant species of concern outside the Complex. The No Action Alternative will create the most effects, increasing the associated pressures that are placed on native plant systems and habitat conditions in the short and long term. These impacts to sensitive species are expected to worsen over time.
Clokey's milkvetch ***Astragalus aequalis***	MINT	MILT	Same as above.
Clokey eggvetch ***Astragalus oophorus var. clokeyanus***	MINT	MILT	Same as above.
Spring Mountains milkvetch ***Astragalus remotus***	MINT	MILT	Same as above.
Upswept moonwort ***Botrychium ascendens***	MINT	MILT	Same as above.
Dainty moonwort ***Botrychium crenulatum***	MINT	MILT	Same as above.

Species	Proposed Action Determination*	No Action Determination*	Rationale
Slender moonwort ***Botrychium lineare***	MINT	MILT	Same as above.
Moosewort ***Botrychium tunux***	MINT	MILT	Same as above.
Charleston beardtongue ***Penstemon leiophyllus var. keckii***	MINT	MILT	Same as above.
Jaeger's beardtongue ***Penstemon thompsoniae ssp. jaegeri***	MINT	MILT	Same as above.
Charleston grounddaisy ***Townsendia jonesii var. tumulosa***	MINT	MILT	Same as above.
Charleston violet ***Viola charlestonensis***	MINT	MILT	Same as above.

MINT – May impact individuals but is not likely to cause a trend to federal listing; **MILT** – May impact individuals, likely to trend towards federal listing.

SUPPORTING PROJECT DOCUMENTATION

Table 9: Applicable Project File Documentation to Support Agency Sensitive Species Compliance

Documentation Type	File Name
Biological Evaluation of Intermountain Region Sensitive Plant Species	SMNRA WHB Botany BE
Wildlife Biological Evaluation	HMAP Wildlife BE

MIGRATORY BIRDS AND WILDLIFE

ALTERNATIVE 1 (PROPOSED ACTION)

DIRECT AND INDIRECT EFFECTS

Disturbance to migratory birds, special status species, and wildlife from the helicopter and wild horses could occur but would be short-term and minimal. Damage to vegetation at trap sites would be on a small scale and would not have a measurable impact, especially if trap sites are located on previously disturbed areas. Human presence at trap sites would disrupt wildlife activities. Short and long-term impacts would result from reducing wild horse numbers within the assessment area. The removal of excess wild horses and burros would provide immediate benefit to migratory birds, special status species, and wildlife through less competition for forage and water and would allow gradual improvement of upland and riparian health.

The project area contains a variety of habitat types, including riparian habitat, therefore potential impacts to neotropical migrants may be expected. If the gather occurs in the winter, this is when migratory species are not expected to be present within the Complex. However, in the event that weather or other factors (budget constraints, holding space limitations, etc.) prevent a winter gather, the gather could be during a portion of the migratory bird breeding season. As described in Chapter 2, BLM policy prohibits the gathering of wild horses with helicopter (unless under emergency conditions) during the period of March 1st to June 30th which includes and

covers the six weeks that precede and follow the peak of foaling (mid-April to mid-May). The foaling protection time occurs during a portion of the migratory bird breeding season for the NWHR HMA (March 1st through August 31st). Noise and activity from gathers occurring June 30th through August 31st may disturb migratory birds during the remaining portion of the breeding season. Migratory bird surveys would occur prior to gather sites being constructed during migratory bird breeding season to avoid or minimize potential impacts to breeding migratory birds.

Small areas of migratory bird habitat could be impacted by trampling at trap sites and holding facilities. This impact would be minimal (generally less than 0.5 acre/trap site), temporary, and short-term (two weeks or less) in nature. Indirect impacts would be related to wild horse densities and patterns of use. The reduction in the current wild horse populations would provide opportunity for vegetative communities to progress toward achieving a thriving natural ecological balance. The action alternatives would support a more diverse vegetative composition and structure through improvement and maintenance of healthy populations of native perennial plants. Habitat improvements would result for migratory bird species and resident species. According to Paige and Ritter (1999), "Long–term heavy grazing may ultimately reduce prey habitat and degrade the vegetation structure for nesting and roosting. Light to moderate grazing may provide open foraging habitat."

Competition with wildlife for water at developed springs, or natural springs and seeps, would be drastically reduced. For example, if the AML for a given HMA is 48 horses, and a population of 200 horses used 10 gallons per day per horse at these isolated to limited scattered sources during the heat of the summer, approximately 14,400 gallons in a month would be consumed if AML is achieved instead of 60,000 gallons at the population level before gather. More water would be available for a longer period of time for the number of horses at AML and wildlife species dependent on the same source(s).

ALTERNATIVE 2 (NO ACTION)

DIRECT AND INDIRECT EFFECTS

This Alternative proposes no action, leaving current and separate agency management direction in place. Current herd population estimates are described in the Background section of this document.

Negative direct impacts such as disturbance and possible injury to wildlife would not occur under this alternative, therefore resulting in less cumulative direct negative impacts. Beneficial indirect impacts to bird, wildlife, and special status species habitats, however, would not be realized and wild horse numbers in excess of AML would result in continuing decline of habitat condition and could adversely affect the viability of some bird and wildlife populations.

SOIL, WATER AND RIPARIAN AREAS

ALTERNATIVE 1 (PROPOSED ACTION)

DIRECT AND INDIRECT EFFECTS

This alternative proposes gathers to bring the WHB populations down to the low and mid-range of AMLs for all three JMAs. Current herd population estimates are described in the Background section of this document.

SOIL

Direct impacts associated with the WHB gathers would consist of disturbance to soil surfaces immediately in and around the bait traps, temporary gather sites and holding facilities. Horses being driven to and concentrated in these locations will result in soils being disturbed and/or compacted, which could result in increased wind and soil erosion. Impacts would be created by hoof action as a result of concentrating WHBs and could be locally high in the immediate vicinity of the gather sites and holding facilities. Generally, these sites would be small (less than

one half acre) in size. Any impacts would remain site-specific and isolated in nature. Impacts would be considered minimal as gathering and herding would be of short duration.

In addition, most temporary bait trap sites and holding facilities will be located on or near roads, pullouts, water haul sites or other flat areas, which have been previously disturbed, to enable easy access by transportation vehicles and logistical support equipment. These common practices would minimize the potential impacts on soils.

Indirect impacts from reduced numbers and concentrations of WHBs would be reduced soil erosion and compaction over the long term. This reduction in soil erosion and compaction would be most notable and important in the vicinity of small springs and meadows currently experiencing high levels of disturbance and bare ground from excess WHBs.

Given the reduction in WHB AMLs from current estimated numbers, over the long term, impacts on soil resources will be reduced allowing vegetation to recover and increase in cover.

WATER AND HYDROLOGY

Direct impacts associated with the WHB gathers would consist of disturbance to soil surfaces immediately in and around the bait traps, temporary gather site(s) and holding facilities. Impacts would be created by hoof action as a result of concentrating horses/burros and could be locally high in the immediate vicinity of the gather site(s) and holding facilities. Generally, these sites would be small (less than one half acre) in size. Any impacts would remain site specific and isolated in nature. Impacts would be considered minimal as gathering and herding would be of short duration. As the gather sites and holding facilities are small, on flat slopes and not located near any water sources and streams, impacts will be negligible. Where bait traps are located near watering areas, as mentioned in proposed action, implementation of design criteria would protect these areas from impacts to water quality during bait trapping.

Indirect impacts on riparian and wetland vegetation will be reduced allowing riparian and wetland vegetation to recover over the long term because the WHB population numbers that are proposed for this alternative are lower than the current population levels. Long-term impacts with these adjusted population numbers would be redistributed with a greater benefit on riparian sources as there would be lower number of horses and burros to impact them.

Removal of excess wild horses and burros may increase vegetation cover, which in turn, may increase interception of precipitation. This may decrease surface water run-off and increase local infiltration rates. The composition of the recovering vegetation (native versus non-native vegetation) may also affect infiltration and precipitation interception based on variation in plant density. As the diverse coverage of grasses, trees, and shrubs increases, interception rates may increase, allowing for more infiltration of water into groundwater aquifers. Evapotranspiration rates may also be altered as a result of the proposed action, but such changes may be small. Wild burros are known to dig holes in the ground to access water in the streambeds of sandy or gravelly intermittent streams (Lundgren et al. 2017, Lundgren et al. 2021), but that activity could persist, even if a lower number of burros is present.

RIPARIAN AREAS AND WETLANDS

Direct impacts on riparian and wetland vegetation resulting from WHB management actions include browsing and trampling of riparian vegetation, and soil disturbance and compaction as a result of overuse of riparian vegetation next to water sources, troughs, and stock reservoirs, which alters the amount, condition, production, vigor of riparian vegetation, and reduces riparian species cover and diversity in grazed areas. Where bait traps are located near riparian areas, as mentioned in proposed action, implementation of design criteria would protect these areas from impacts to sensitive resources, e.g. spring snails, during bait trapping.

Indirect effects resulting from management actions include loss of plant cover that can result in localized areas being dominated by invasive plants. There would be beneficial indirect impacts on riparian and wetland

vegetation over the long term from a reduction in herd sizes in the Complex, resulting in a reduction in physical effects on resources.

Managing the JMAs to AML will reduce impacts on riparian and wetland vegetation allowing riparian and wetland vegetation to recover. Long-term impacts with these adjusted population numbers would be redistributed with a greater benefit on water sources as there would be lower number of horses and burros to impact them.

ALTERNATIVE 2 (NO ACTION)

DIRECT AND INDIRECT EFFECTS

This Alternative proposes no action, leaving current and separate agency management direction in place. Current herd population estimates are described in the Background section of this document.

SOIL

Direct and indirect effects include continuing soil disturbance from WHB activities. Under this alternative, as herd population growth increases by an estimated 20 percent per year, direct and indirect impacts, described in Alternative 1, would also increase. Appendix E shows utilization in the Spring Mountain WHBT at over 90 percent since 2009. As the population increases, increased utilization, approaching 100 percent, will result in increased bare soil from loss of vegetation increasing the risk of topsoil loss from water and wind erosion. Also, in the search for forage, herd populations may move into undisturbed areas negatively impacting those areas.

The impacts on these resources would be greater in this alternative than in the proposed action.

WATER AND HYDROLOGY

Direct and indirect effects include continuing impacts to water and hydrology from WHB activities. Under this alternative as herd population growth increases by an estimated 20 percent per year, direct and indirect impacts, described in Alternative 1, would also increase.

The impacts on these resources would be greater in this alternative than in the proposed action.

RIPARIAN AND WETLANDS

Direct and indirect effects include continuing impacts to riparian areas and wetlands. Under this alternative, as herd population growth increases by an estimated 20 percent per year, direct and indirect impacts, described in Alternative 1, would also increase.

The impacts on these resources would be greater in this alternative than in the proposed action.

WILD HORSES AND BURROS

This section discloses potential effects of each alternative to wild horse and burro biology, habitat elements, population dynamics and sustainability, distribution, herd behavior and herd health necessary to inform a decision on appropriate management levels for wild horses and burros and necessary management actions to control and maintain the long-term health of the wild horse and burro populations.

The effects to individual and herd health and indirect effects of applying fertility control methods are described in the project record *Population Growth Suppression*. The NAS report (2013) and others have described the effects of removing excess animals off the range as it relates to population growth and fecundity. Simply put, populations within Appropriate Management Levels have access to more habitat resources and are, therefore, healthier. Healthy females, in particular, have a higher fecundity and are more prolific breeders when they have good body conditions. BLM commissioned the Natural Resources Council of the National Academies of Sciences (NAS) to conduct an independent, technical evaluation of the science, methodology, and technical decision-making

approaches of the BLM Wild Horse and Burro Management Program. Among the conclusions of their 2013 report, NAS (2013) concluded that wild horse populations grow at 15-20 percent a year, and that predation will not typically control population growth rates of free-ranging horses. The report (NAS 2013) also noted that, because there are human-created barriers to dispersal and movement (such as fences and highways) and no substantial predator pressure, maintaining a herd within an AML requires removing animals in roundups, also known as gathers, and may require management actions that limit population growth rates. The report (NAS 2013) examined a number of population growth suppression techniques, including the use of sterilization, fertility control vaccines, and sex ratio manipulation. The proposed alternative incorporates PGS techniques in an effort to reduce the estimated 20 percent population growth for these WHB herds.

APPROPRIATE MANAGEMENT LEVEL VERIFICATION/CLARIFICATION

For this analysis Appropriate Management Level (AML) is defined as the number of adult WHBs expressed as a range with upper and lower limits to be managed within each JMA and the Complex as a whole. Forage, based on animal unit months (AUMs), for wild horses and burros is allocated based on the AML upper limit. The AML upper limit is the maximum number of WHBs that results in a thriving natural ecological balance (TNEB) and avoids a deterioration of the range. This number should be below the number that would cause damage to the range (USDI BLM 2010).

To establish the AML upper limit, each agency's regulations require environmental analysis of each WHBT or HMA to determine resource conditions, inventory of WHB populations and coordination with other resources and activities. The AML upper limit is used to determine when there is an excess of animals on the WHBT, HMA or JMA that must be removed from an area in order to preserve and maintain a thriving natural ecological balance in coordination with other resources and activities (36 CFR Subpart D, 222.60 (b)(3); 43 CFR 4710.3-1).

There are few, if any direct or indirect effects to either WHB populations or individuals during the population inventory process. In 2021, 2018, 2015, 2012, and other past years, aerial population surveys were conducted by helicopter over several consecutive days. The helicopter staging/fueling area was located outside the territory and support vehicles were confined to state and county roads and USFS and BLM system roads. Flights are restricted over Wilderness areas. Helicopter aerial surveys activities may cause noise and visual disturbance to individual wild horses and burros within the Complex, but the disturbance it temporary in nature and the animals quickly resume their daily routines/activities with no long-lasting effects. Any such animal may move away from that disturbance, freeze in position and/or move to hiding cover. The animal's reaction to helicopter noise has been similar to any other vehicle noise that might occur in the area; however, no signs of stress to individual animals have been observed. The probability of any adverse effects to any individual wild horse or burro from ground inventory and monitoring or aerial survey is very low and such surveys are consistent with the WFRHBA.

GATHER AND REMOVAL OF EXCESS ANIMALS

Implementing the proposed action would reduce the WHB populations to the low to mid-range of AML. The 2021 population estimate for Red Rock JMA is 62 WH and 43 WB; so approximately 46 excess horses and 14 excess burros would need to be removed to reach Low AML.

The 2021 population estimate for Spring Mountain JMA is 74 WH and 169 WB; so approximately 27 excess horses and 149 excess burros would need to be removed to reach Low AML.

The 2021 population estimate for Johnnie JMA is 145 WH and 339 WB; so approximately 131 excess horses and 285 excess burros would need to be removed to reach Low AML.

For the entire Complex, the 2021 population estimate is 281 WH and 551 WB, so there could be potentially 204 excess WH and 448 excess WB that would need to be removed as shown in the following table.

Table 10. Proposed AML, Current Population Estimates and Removals to Low AML

	Lower AML		Mid AML		Upper AML		2021 Population Estimates		Low AML Difference	
Red Rock	16H	29B	22H	39B	27H	49B	62H	43B	-46H	-14B
Spring Mtns	47H	20B	57H	28B	66H	35B	74H	169B	-27H	-149B
Johnnie	14H	54B	24H	81B	34H	108B	145H	339B	-131H	-285B
Totals	77H	103B	103H	148B	127H	192B	281H	551B	-204H	-448B

Excess WHBs are causing extensive resource degradation. They have exceeded the grazing levels at which healthy range can be maintained and are causing conflicts with wildlife. Reducing the number of WHBs grazing year-round will prevent over-utilization of key forage species and promote regrowth and natural recovery of vegetation, allowing the project area to achieve a thriving natural ecological balance. The gather and removal of excess WHBs would decrease the potential for grazing competition between the WHBs and wildlife and ease grazing pressure on the remaining vegetation within the territory. Less grazing pressure would allow for young vegetation to grow and develop root systems that would provide healthy plants with better resilience against future WHB and wildlife grazing.

Wild horses and burros may have ecologically beneficial effects, especially when herd sizes are low relative to available natural resources, but those ecological benefits do not typically outweigh damage caused when herd sizes are high, relative to available natural resources. Under some conditions, there may not be observable competition with other ungulate species for water (e.g., Meeker 1979), but recent studies that used remote cameras have found wild horses excluding native wildlife from water sources under conditions of relative water scarcity (Perry et al. 2015, Hall et al. 2016, Hall et al. 2018). Wild burros (and, less frequently, wild horses) have been observed digging 'wells;' such digging may improve habitat conditions for some vertebrate species and, in one site, may improve tree seedling survival (Lundgren et al. 2021). This behavior has been observed in intermittent stream beds where subsurface water is within 2 meters of the surface (Lundgren et al. 2021).

The agencies are 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 blackbrush, sagebrush, or pinyon-juniper woodlands. Lundgren et al. (2021) suggested that, due to well-digging in ephemeral streambeds, wild burros (and horses) could be considered 'ecosystem engineers;' a term for species that modify resource availability for other species (Jones et al. 1994). Bleich et al. (2021) responded by pointing out that ecological benefits from wild horse and burro presence must be weighed against ecological damage they can cause, especially at high densities. In HMAs where wild horse and burro biomass is very large relative to the biomass of native ungulates (Boyce and McLoughlin 2021), they should probably also be considered 'dominant species' (Power and Mills 1995) whose ecological influences result from their prevalence on the landscape. Wild horse densities could be maintained at high levels in part because artificial selection for early or extended reproduction may mean that wild horse population dynamics are not constrained in the same way as large herbivores that were never domesticated (Boyce and McLoughlin 2021).

Another potentially positive ecological effect of wild horses and burros is that they, like all large herbivores, redistribute organic matter and nutrients in dung piles (i.e., King and Gurnell 2007), which could disperse and improve germination of undigested seeds. This could be beneficial if the animals spread viable native plant seeds, but could have negative consequences if the animals spread viable seeds of invasive plants such as cheatgrass (i.e,, Loydi and Zalba 2009, King et al. 2019). Increased wild horse and burro density would be expected to increase the spatial extent and frequency of seed dispersal, whether the seeds distributed are desirable or undesirable. As is true of herbivory by any grazing animals, light grazing can increase rates of nutrient cycling (Manley et al. 1995) and foster compensatory growth in grazed plants which may stimulate root growth (Osterheld and McNaughton 1991, Schuman et al. 1999) and, potentially, an increase in carbon sequestration in the soil (i.e., Derner and Schuman 2007, He et al. 2011). However, when grazer density is high relative to available forage resources, overgrazing by any species can lead to long-term reductions in plant productivity, including decreased root

biomass (Herbel 1982, Williams et al. 1968) and potential reduction of stored carbon in soil horizons. Recognizing the potential beneficial effects of low-density wild horse and burro herds, but also recognizing the totality of available published studies documented ecological effects of wild horse and burro herds, especially when above AML (as noted elsewhere), it is prudent to conclude that horse and burro herd sizes above AML may cause levels of disturbance that reduce landscapes' capacity for resilience in the face of further disturbance, such as is posed by extreme weather events and other consequences of climate change.

When WHB numbers are at or below upper AML, it is anticipated that forage utilization levels by WHB would be low to moderate and within the 25% grazing standard on BLM administered lands and 30% grazing standard on USFS lands prior to onset of annual vegetative growth, which begins in early spring.

With reduced year-around grazing pressure, on average, individual WHBs remaining on the Complex would have more desirable forage readily available and need to roam less in search of ample forage and water. It is anticipated that overall herd health would be maintained year-round within the extent of the existing JMA boundaries. In the past, when WHB numbers have been lower, the reports of animals outside the JMAs were uncommon. It is anticipated that the remaining WHB would be much less likely to become nuisance animals causing a safety risk to motorists on the adjoining highways or impacting private property landscapes and forage croplands.

HELICOPTER CAPTURE

For large gathers, the primary capture methods would be helicopter drive trapping. Helicopter gathers could take several weeks to remove 204 excess horses and 448 excess burros across the Complex. Gathering any wild animals into pens has the potential to cause impacts to individual animals. There is also the potential for impacts to individual horses and burros during transportation, short-term holding, long-term holding that take place after a gather. The FS and BLM follow guidelines to minimize those impacts and ensure humane animal care and high standards of welfare.

Helicopter drive trapping involves utilizing a helicopter to herd WHBs 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 WHBs. Traps would be set in a high probability area utilizing the topography, if possible, to assist with capturing excess WHBs residing within the area. 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 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 WHBs 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. For wild horses as the herd approaches the trap the pilot applies pressure and a prada 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.

The BLM has been gathering excess WHBs from public lands using helicopter gathers since the late 1970s. 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. 2013, Scasta 2020). In their *BLM Task Force Report*, the American Association of Equine Practitioners (2011) concluded that the care, handling and management practices utilized by the BLM were humane, efficient, effective and appropriate for gathering horses and burros in Nevada and generally supported the safety, health and welfare of the animals. Another report by the Interior Department's Office of Inspector General (2010) also concluded that the BLM's gather practices were conducted in a humane manner.

Two early papers, by Hansen and Mosley (2000) and Ashley and Holcomb (2001) examined limited effects of gathers, including behavioral effects and effects on foaling rates. Hansen and Mosley (2000) observed BLM gathers in Idaho and Wyoming. They monitored wild horse behaviors before and after a gather event and compared the behavioral and reproductive outcomes for animals that were gathered by helicopter against those outcomes for

animals that were not. This comparison led to the conclusion that gather activities used at that time had no effect on observed wild horse foraging or social behaviors, in terms of time spent resting, feeding, vigilant, traveling, or engaged in agonistic encounters (Hansen and Mosley 2000). Similarly, the authors did not find any statistically significant difference in foaling rates in the year after the gather in comparisons between horses that were captured, those that were chased by a helicopter but evaded capture, or those that were not chased by a helicopter. The authors concluded that the gathers had no deleterious effects on behavior or reproduction. Ashley and Holcomb (2001) conducted observations of reproductive rates at Garfield Flat HMA in Nevada, where horses were gathered in 1993 and 1997, and compared those observations at Granite Range HMA in Nevada, where there was no gather. The authors found that the two gathers had a short-term effect on foaling rates; pregnant mares that were gathered had lower foaling rates than pregnant mares that were not gathered. The authors suggested that BLM make changes to the gather methods used at that time, to minimize the length of time that pregnant mares are held prior to their release back to the range. Since the publications by Hansen and Mosley (2000) and by Ashley and Holcomb (2001), BLM did make changes to reduce the stress that gathered animals, including pregnant females, may experience as a result of gather and removal activities; these measures have been formalized as policy in the Wild Horse and Burro Comprehensive Animal Welfare Program (BLM PIM 2021-002).

The 2008 GAO report found that cumulative effects associated with the capture and removal of excess wild horses including gather-related mortality averaged only about 0.5% and approximately 0.7% of the captured animals, on average, are humanely euthanized due to pre-existing conditions (such as lameness or club feet) in accordance with BLM policy. Scasta (2020) found the same overall mortality rate (1.2%) for BLM WH&B gathers in 2010-2019, with a mortality rate of 0.25% caused directly by the gather, and a mortality rate of 0.94% attributable to euthanasia of animals with pre-existing conditions such as blindness or club-footedness. Scasta (2020) summarized mortality rates from 70 BLM WH&B gathers across nine states, from 2010-2019. Records for 28,821 horses and 2,005 burros came from helicopter and bait/water trapping. For wild burro bait/water trapping, mortality rates were 0.05% due to acute injury caused by the gather process, and death for burros with pre-existing conditions was 0.2% (Scasta 2020). For wild horse bait/water trapping, mortality rates were 0.3% due to acute injury, and the mortality rate due to pre-existing conditions was 1.4% (Scasta 2020). For wild horses gathered with the help of helicopters, mortality rates were only slightly lower than for bait / water trapping, with 0.3% due to acute causes, and 0.8% due to pre-existing conditions (Scasta 2020). Scasta (2020) noted that for other wildlife species capture operations, mortality rates above 2% are considered unacceptable and, by that measure, BLM WH&B "…welfare is being optimized to a level acceptable across other animal handling disciplines." A mortality rate of less than one-half of one percent from acute injuries is very low when handling wild animals. This data affirms 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 and burros from the range. Agency personnel are required to be on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor.

Direct effects to individual WHBs from helicopter drive trapping gathers include handling stress associated with the 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. Mortality to individuals from this impact is rare but can occur. Observations made through the completion of gathers show that most of the wild horses captured acclimate quickly to the holding corral environment, becoming accustomed to water tanks and hay, as well as human presence. Wild burros generally exhibit less agitation and are calmer, albeit resistant, to handling.

Injuries sustained during gathers could include nicks and scrapes to legs, face, or body from brush or tree limbs while being herded to the gather corrals by the helicopter. In this project gather area, most historic barbed wire fencing associated with past livestock grazing allotments has been removed. It is unlikely but possible that WHBs could encounter barbed wire fences and could receive wire cuts. These injuries are generally not fatal and are treated with medical spray at the holding corrals until a veterinarian can examine the animal.

Most injuries to horses and burros occur in the gather corrals, holding corrals, or during sorting. These injuries result from kicks and bites or from collisions with corral panels or gates and are less common in burro gathers because burros tend to act less aggressively. Transport and sorting are completed as quickly and safely as possible

to reduce the occurrence of fighting and then animals are moved into the large holding pens to settle in with hay and water. Injuries received during transport and sorting consist of superficial wounds of the rump, face, or legs. Occasionally, animals could sustain a spinal injury or a fractured limb which requires humane euthanasia, but these injuries are rare. Similar injuries could be sustained if wild horses or burros were captured through bait and/or water trapping, as the animals would still need to be sorted, aged, transported, and otherwise handled following their capture.

Large helicopter gathers would be scheduled to avoid the summer heat. Adherence to BLM Permanent Instruction Memorandum 2021-002, Wild Horse and Burro Comprehensive Animal Welfare Program (BLM 2021) and SOPs (Appendix B) as well as techniques used by the gather contractor or agency personnel would help minimize the risks of heat stress if any bait or water trapping occurred in the spring or summer months. Heat stress does not occur often. However, if WHBs are in a weakened state due to a shortage of water or forage, higher mortality could occur. In these cases, extra precautions would be needed to ensure the safe capture and post-gather care of these animals. A veterinarian would be available to examine animal condition and provide recommendations for care. Electrolytes may be added to the drinking water during summer gathers that involve animals in weakened condition. If there are unusually warm air temperatures, horses and burros may need to be sprayed with water at the temporary holding facility to reduce body temperature and improve overall comfort of the horses and/or burros. In cases of extreme heat, the gather operations would be suspended once high temperatures are reached.

Helicopter gathers would not be conducted during the spring foaling season (March 1 through June 30). Though foaling can be encountered during any month of the year on the Complex, most foals are born during the spring period. If foals too young to wean are gathered, they are matched up with the dams. Foals can sometimes be orphaned during a gather. This can occur if the dam rejects the foal; the foal becomes separated from its dam and cannot be matched up following sorting; the dam dies or must be humanely euthanized during the gather; the foal is ill or weak and needs immediate care that requires removal from the dam; or the dam 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 dam rejected it or died. These foals are usually in poor, unthrifty condition. Every effort is made to provide appropriate care to orphaned foals. Veterinarians could administer electrolyte solutions to aid in hydration and overall health. Orphan foals could be fed milk replacer as needed to support their nutritional needs. Orphaned foals could be placed in a foster home to receive additional care. Despite these efforts, some orphaned foals could die or require humane euthanasia if prognosis for survival is very poor.

Large gathers would need dust abatement at holding facility and gather corrals. These areas are sprayed down to reduce dust and limit wild horse and burro exposure to dust during the gather activity. Additionally, moderate travel speeds on roads are needed reduce dust exposure to the animals during transport.

Through the capture and sorting process, WHBs are examined for health, injury and illnesses. Decisions to humanely euthanize animals in field situations would be made following BLM policy on euthanasia described in *Permanent Instruction Memorandum 2021-007 Euthanasia of Wild Horses and Burros Related to Acts of Mercy, Health, or Safety* (USDI BLM 2021) which is used as a guide to determine if animals meet the criteria and should be euthanized. Animals are euthanized for non-gather related reasons such as old broken hips or legs that prevent travel or maintenance of body condition. Old animals with few remaining teeth may be in very poor body condition. Animals with congenital (genetic) or serious physical defects such as club foot, or sway back and should not be returned to the range.

In rare cases, water toxicity or poisoning can occur when waters are extremely limited or non-existent, which can lead to cerebral edema and death. To prevent the occurrence of water poisoning, recently gathered animals may need to be held off full access to water for some time until they have time to slowly become hydrated, at which time free access to water would be provided. Similarly, hay may be fed sparingly if there is a risk of colic or other complications due to the malnourished state of recently gathered animals.

Indirect effects can occur to horses after the initial stress event and could include increased social displacement or increased conflict between studs. These impacts are known to occur intermittently during wild horse gather

operations. Traumatic injuries could occur and typically involve biting and/or kicking bruises. In holding facilities, individuals do not need to compete for forage and water resources so there is less stress and fighting with corresponding weight gain and improved body condition.

Indirect individual effects or impacts are those which occur to individual horses after the initial stress event, and may include spontaneous abortions in mares, increased social displacement and conflict in studs. These effects, like direct individual effects, are known to occur intermittently during wild horse gather operations. An example of an indirect individual effect would be the brief skirmish which occurs among studs following sorting and release into the stud pen, which lasts less than a few minutes and ends when one stud retreats. Traumatic injuries usually do not result from these conflicts. These injuries typically involve a bite and/or kicking with bruises which don't break the skin. Like direct individual effects, the frequency of occurrence of these impacts among a population varies with the individual animal. Fighting among jack burros during gathers is less common.

BAIT AND WATER TRAPPING

For small nuisance and public safety gathers bait trapping would be the primary capture method to remove or relocate bands of WHBs back into the JMA, keep population levels within AML and apply PGS techniques. Wild horse population modeling for Alternative 1 (see Appendix F) projected a population growth of 13.3% in eleven (11) years for each JMA. Population trials project that the population would be within AML range following the first large gather event and then exceed AMLs in the third year. A second small gather event would be needed in the third or fourth year to keep the herd within the AML range.

Table 11. Alternative 1 – Wild Horse Population Sizes in 11 Years

Modeling Statistic	Red Rock JMA	Spring Mtn. JMA	Johnnie JMA	Totals
Est. Population in Year One	145H	306H	120H	571H
Median Growth Rate (%)	13.3%	11.8%	10.3%	--
Ave. Median Population Trial	43H	91H	369H	170H
Median Removed	127H	267H	97H	491H

Environmental effects of this method of removal are similar to effects of helicopter gathers and include ground disturbance at the trap location, and potential temporary displacement of wildlife. Traps would be placed on disturbed locations when possible after an archeological survey has been conducted. In the case of water trapping, pens would be placed around developed, rather than natural, water sources where possible to reduce impacts to riparian areas.

Water or bait trapping generally results in the capture of a few animals at a time and requires lengthy time periods to gather larger numbers. Therefore, gather operations could be ongoing for many weeks or months verses helicopter gathers which are usually shorter. For those individual animals in a debilitated condition from lack of forage and/or water, these environmental stressors would persist for a longer time before being gathered and cared for properly.

Direct effects such as injuries to WHBs through bait or water trapping can be similar to those described for helicopter removals though generally to a lesser extent. Animals would not experience being helicopter driven several miles to a trap location but may experience injuries associated with bites and kicks while in the trap, during loading into stock trailers and transportation to preparation facilities. If foals enter the trap with adult animals, they could become injured or killed by adult WHBs fighting. Similarly, if adequate facilities did not exist to separate animals by sex or age, foals and adult animals could be injured or killed during transport in stock trailers. Though it is generally much easier to manage for fewer animals coming off the range at a slower rate; holding space can be more effectively managed.

When trapping excess or nuisance animals, bait/water trap removals would remove all captured animals. There would be no selective removals or nuisance WHBs returned to the range. The direct and indirect effects would be the same as those described for gate cut removals below. Various removal strategies could be employed with the use of bait or water trapping as described in the subsection titled *Removal Numbers*.

WILD HORSES AND BURROS REMAINING

Following a WHB gather, deterioration of the range associated with WHBs would be reduced and rangelands would have the opportunity to recover. Protecting rangeland resources from severe use would improve sustainability and enhance resiliency so that rangelands can support future generations of healthy WHBs. Goals of a gather to remove excess animals would include: the management of WHB populations in balance with the available forage and water resources and other rangeland uses and allowing individual animals to better maintain optimum body condition and overall health during future years. This would lessen the potential for individual animals and/or herds to be affected by drought, move outside the JMAs in search of forage resources, become nuisance animals on private property or safety hazards along high-speed public roads, and avoid or minimize the need for future emergency actions.

Depending upon the gather objectives, some WHBs (whether escaped from capture or intentionally left undisturbed) would remain on the range following the gather. The WHBs that are not captured may be temporarily disturbed and moved to another area during gather operations. Population-wide effects could occur during or immediately following implementation of the proposed action. Potential population-wide effects related to gather activities include re-dispersal of individuals and small bands across the JMAs, changes to herd demographics (age and/or sex ratios), subsequent changes to growth rates and population size over time, temporary or permanent separation of members of individual bands. Direct population-wide effects to the remaining population are usually temporary in nature and with most, if not all, effects to individual WHBs disappearing within hours to several days after the gather is completed. No observable effects associated with these impacts would be expected within one month of release except for a heightened awareness of human presence.

GATE CUT REMOVALS

The phrase “gate cut removal” means that WHBs would be gathered and removed as encountered until removal and post-gather population objectives were achieved. No WHBs would be released so that the number removed would equal the number gathered. The animals may be removed from specific portions of each JMA where resources are most limiting, leaving all animals in the remainder of the Complex alone. This type of removal is most common for wild horses when trying to get down to or below upper AML as it does not pose additional stresses on animals identified to remain on the range; it is the standard method used for most burro gathers.

WHBs that are not gathered could be minimally impacted due to the helicopter activity but would otherwise be unaffected. All impacts would cease once gather operations were completed. Sex ratios and age distributions of the ungathered population would be unknown but should be comparable to the ratios observed in the gathered animals and the impacts to the residual herd’s health and distribution is difficult to predict.

Without the ability to selectively remove animals from the range by age, substantially more wild horses could be removed under a gate cut gather. These animals would likely be transferred to off-range pastures.

Gate cut gathers eliminate the ability to remove WHBs based on animal health or desirable or historical characteristics, which often results in unintended impacts to the remaining herds. For example, horses of larger size (draft), gentle disposition, or bright/light coloring are often easier to locate and capture. Therefore, they are typically the first to be removed using the gate cut method. This has the potential to permanently remove these genetic traits from herds. Additionally, utilizing the gate cut method could distort the distribution within each JMA by removing all animals concentrated in areas where capture is easiest, while leaving animals in the outlying areas that are more difficult to gather (e.g. areas of trees, rough terrain, or long distance from trap site, Wilderness

areas). These areas are often characterized by lesser quality habitat. In the case of large helicopter gathers, the emphasis for gather and removal would be for the horses and/or burros that inhabit the areas in the worst condition and with the fewest resources to sustain them. In cases where it is feasible and appropriate, attempts would be made to gather animals equally across the JMA to avoid disproportionate removal. With gate cut removals of excess animals, few if any wild horses would be released back to the range, so there may be little or no adjustment to sex ratios or application of fertility control.

REMOVAL NUMBERS

The following scenarios are provided for analysis:

REMOVAL OF SUFFICIENT NUMBERS OF ANIMALS TO ACHIEVE THE LOW RANGE OF AML

Under this strategy, sufficient numbers of wild horses and/or burros would be removed to achieve the low range of AML for each JMA. This strategy is consistent with direction provided in the BLM WHB handbook (USDI BLM 2010) and is a common practice within the agency where excess wild horses and burros are removed to low AML and through the following years the population is allowed to increase to the high AML at which time another gather is scheduled at a four- to five-year interval. The intent of establishing the Low AML population number is to, among other things, to have a four- to five-year gather cycle. Under this strategy an attempt is made to capture the entire herd. Typically, a helicopter gather can successfully gather up to 80-85% of a herd depending on topography and open terrain. For population modeling (Appendix F) an assumed population gather success of 85% was used. Population growth suppression methods are used for that portion of the herd which is going to be released and then applied again during the next four- to five-year gather event. The intent would be to lengthen the gather cycle as much as possible.

REMOVAL OF SUFFICIENT ANIMALS TO ACHIEVE THE MID-RANGE OR HIGH RANGE OF AML

Because of budgetary constraints and/or management issues associated with disposition of gathered WHBs, it may be determined that the population only be reduced to the mid or high AML in order to relieve grazing impacts on the habitat and sustain the WHB populations during drought. Further gathers to achieve low AML would be scheduled based on additional monitoring data and each agency's gather priority process. Impacts to wild horses or burros would be similar to those under the low AML gather option. Rangeland impacts would be proportional to the residual WHB population. Impacts to rangeland health could be expected, primarily due to trailing and trampling of riparian areas and spring sources. The level of impacts realized would vary depending on the health of the rangeland within each JMA.

Under this option, the established AML would be exceeded following spring foaling. If drought conditions persisted in Southern Nevada, rangeland health and post drought recovery could be hindered by overpopulation.

GENETIC HEALTH

The BLM AML analyses for Red Rock HMA (USDI BLM 2004), Johnnie and Wheeler Pass HMAs (USDI BLM 2005a), each stated genetically similar mares and jennies may need to be introduced into the population, particularly for the wild horse population in Red Rock JMA which is geographically separated from the other wild horse herds in the Complex. It was felt the populations of WHBs moving back and forth between the Spring Mountain/Wheeler Pass and Johnnie JMAs would maintain a genetically viable population.

Those management precautions from 2004-2005 are noted here. Genetic sampling followed in 2006-2007. As reported in the 2013 NAS report, for genetic samples taken from Red Rock JMA in 2006, Cothran (2009) reported an observed heterozygosity of $H_o = 0.786$. For genetic samples taken from Johnnie JMA in 2007, Cothran (2010a) reported an observed heterozygosity of $H_o = 0.704$. For genetic samples taken from Spring Mountain/Wheeler Pass JMA in 2007, Cothran (2010b) reported an observed heterozygosity of $H_o = 0.763$. All these results meet the management goal stated in the BLM's H-4700 WHB Handbook (2010), and in fact all three HMAs had observed heterozygosity levels that were greater than the mean for feral horse herds. Mean H_o for feral horse herds was

listed as 0.716 with a standard deviation of 0.056; herds were at risk if their H_o value was at or below H_o =< 0.66 (NAS 2013). Based on this most recent genetic sampling, it is not expected that genetic health would be impacted under either the low or high AML options. Future genetic sampling and monitoring would be facilitated by gather operations. If necessary, animals would be introduced into the JMA to ensure genetic health. The genetic heterozygosity of wild burro populations within the Complex has not been sampled but will be over the course of management activities under the proposed action. Adaptive management of wild burros will be responsive to results of genetic diversity monitoring and will be in keeping with goals of the BLM WHB herd management handbook (2010), which aim to maintain adequate levels of observed heterozygosity in managed populations, through a combination of maintaining adequate herd sizes of fertile individuals, and periodic introductions of fertile individuals from other herds, if necessary.

Because of history, context, and periodic introductions, wild horses and burros that live in the Spring Mountains Complex should not be considered as truly isolated populations (NAS 2013). 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. These animals are part of part of a larger metapopulation (NAS 2013) that has demographic and genetic connections with other BLM-managed herds in California, Nevada, and beyond. It is clear from the available results of wild horse genetic sampling (Cothran 2009, 2010a, 2010b) that wild horse herds in the larger metapopulation have a background of diverse domestic breed heritage, probably caused by natural and intentional movements of animals between herds. Genetic similarity among all sampled HMAs suggested herds with mixed ancestry, primarily of North American origin, albeit with somewhat more Old-World ancestry indicated in Red Rock samples at the time. These backgrounds are very similar to that of many other herds managed by the BLM. Under the proposed action, hair samples would be periodically collected on at least 25 animals per JMA to assess the genetic diversity of the herds. Samples would also be collected during future gathers as needed to determine whether management is maintaining acceptable genetic diversity (and avoiding excessive risk of inbreeding depression).

Under the proposed action, wild horse and burro introductions from other HMAs could be used if needed, to augment observed heterozygosity, which is a measure of genetic diversity, the result of which would be to reduce the risk of inbreeding-related health effects. Introducing a small number of fertile animals every generation (about every 8-10 years) is a standard management technique that can alleviate potential inbreeding concerns (BLM 2010).

The 2013 National Academies of Sciences report included other evidence that shows that the Spring Mountains Complex is not genetically unusual, with respect to other wild horse herds. Specifically, Appendix F of the 2013 NAS report is a table showing the estimated 'fixation index' (Fst) values between 183 pairs of samples from wild horse herds. 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. 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 each of the sampled JMAs (Cothran 2009, 2010a, 2010b) in the Spring Mountains Complex had pairwise Fst values that were less than 0.05 with 40 or more other sampled herds (41 for Johnnie, 75 for Red Rock, and 124 for Wheeler Pass). These results support the interpretation that Spring Mountains Complex horses are components in a highly connected metapopulation that includes horse herds in many other HMAs.

TEMPORARY HOLDING FACILITIES DURING GATHERS

WHBs gathered would be transported from the gather corrals (a.k.a. trap sites) to a temporary holding corral within the JMAs primarily in goose-neck trailers; however, straight deck semi-trailers could be used. At the temporary holding corrals, animals would be aged and sorted into different pens based on sex, then provided quality hay and water while in the holding facility. Mares or jennies and their nursing foals (if encountered) would be kept in pens together.

At the temporary holding facility, recommendations to the USFS or BLM regarding care, treatment, and if necessary, euthanasia of the recently captured animals would be provided by a veterinarian. 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).

TRANSPORT, SHORT-TERM HOLDING, AND ADOPTION (OR SALE) PREPARATION

Wild horses or burros removed from the range would be transported from the capture/temporary holding corrals to the designated USFS or BLM off-range corral facility(s) in straight deck semi-trailers and/or goose-neck stock trailers.

Vehicles would be inspected by the agencies' Contracting Officer's Representative or Project Inspector prior to use to ensure animal safety. Animals would be segregated by age and sex and loaded into separate compartments. A small number of mares or jennies could be shipped with foals. Transportation of recently captured animals is limited to a maximum of ten hours. 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 WHBs are in extremely poor condition, it is rare for an animal to be seriously injured or to die during transport.

Upon arrival at the off-range corral facility, recently captured WHBs would be off-loaded by compartment and placed in holding pens where they are provided quality hay and water. If necessary, specific hay or supplement would be prescribed to help animals recover from drought stress. Most animals begin to eat and drink immediately and adjust rapidly to their new situation. At the off-range corral facility, a veterinarian would examine each load of horses or burros and provide recommendations to the USFS or BLM regarding care, treatment, and if necessary, euthanasia of the recently captured animals. Any animals affected by a chronic or incurable disease, injury, lameness, or serious physical defect (such as severe tooth loss or wear, club feet, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the AVMA. Wild horses or burros in very thin condition or animals with injuries would be sorted and placed in hospital pens, fed separately and/or treated for their injuries as indicated. Recently captured wild horses, generally mares, in very thin condition may have difficulty transitioning to feed. Some of these animals may be in such poor condition that it is unlikely they would have survived if left on the range. Every effort would be taken to help a pregnant mare make a quiet, low stress transition to captivity and domestic feed to minimize the risk of abortion or death.

At the off-range corral facilities, once the WHBs have adjusted to their new environment, they are prepared for adoption or sale. Preparation involves freeze-marking the animals with a unique identification number, drawing a blood sample to test for equine infectious anemia (Coggins test) and other equine diseases of interest, vaccination against common equine diseases, microchipping, castration, and de-worming. During the preparation process, potential impacts to WHBs are similar to those that can occur during handling and transportation. Serious injuries and deaths from injuries during the preparation are rare.

At the short-term corral facilities, a minimum of 700 square feet is provided per animal. Mortality was found to be about 5% per year associated with transportation, short-term holding, and adoption or sale with limitations (USGAO 2008), and includes the following: animals euthanized due to a pre-existing condition; animals in extremely poor condition; animals that are injured and would not recover; animals which are unable to transition to feed; and animals which are seriously injured or accidentally die during sorting, handling, or preparation. The GAO report (2008) noted that BLM used SOPs for short-term holding facilities (e.g., corrals) that included procedures to minimize excitement of the animals to prevent injury, separating horses by age, sex, and size, regular observation of the animals, and recording information about the animals in a BLM or FS database. The GAO reported that BLM had regular inspections of short-term holding facilities and animals there, ensuring that the corral equipment is up to code and that animals are treated with appropriate veterinary care (including that hooves are trimmed adequately to prevent injury). The GAO noted that BLM also had controls in place to ensure humane care at long-term holding facilities (i.e., pastures). BLM staff monitor the number of animals, the pasture conditions, winter feeding, and animal health.

ADOPTION OR OFF-RANGE PASTURES (ORPS)

The Forest Service would follow BLM adoption procedures and/or give BLM custodial responsibility of excess WHB being prepared for adoption. The BLM direction requires adoption applicants to have at least a 400 square foot corral with panels that are at least six feet tall for horses over 18 months of age, and five feet tall for burros. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse or burro for one year and the animals and the facilities are inspected to assure the adopter is complying with the BLM's requirements. After one year, the adopter may take title to the horse or burro after an inspection from an official, veterinarian, or other individual approved by the authorized officer to ensure humane care, at which point the horse or burro becomes the property of the adopter. Adoptions are conducted in accordance with 43 CFR §4750.

Potential impacts to wild horses from transport to adoption or ORPs are like those previously described. One difference is that when shipping animals for adoption or to off-range pasture, animals may be transported for a maximum of 24 hours. Immediately prior to transportation, and after every 18-24 hours of transportation, animals are off-loaded and provided a minimum of eight hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of clean water and 25 pounds of good quality hay per horse with adequate feed bunk space to allow all animals to eat at one time. Most animals are not shipped more than 18 hours before they are rested. The rest period may be waived in situations where the travel time exceeds the 24-hour limit by just a few hours and the stress of offloading and reloading is likely to be greater than the stress involved in the additional period of uninterrupted travel.

Wild horses generally five years of age and older (those for which there is less adoption or sale demand) are transported to ORPs. Establishment of each ORP is subject to a separate environmental analysis, decision making process and contracting services. Wild horses in ORPs remain available for adoption or sale to individuals interested in acquiring a larger number of animals and who can provide the animals with a good home. The BLM has maintained ORPs for over 30 years.

The ORPs are designed to provide excess wild horses with humane, and in some cases life-long care in a natural setting off the public rangelands. There, wild horses 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. As of March 2020, On-Range WHBs numbered 95,114 animals and WHBs in Off-Range facilities numbered 47,845 animals for a total of 142,959 animals (USDI BLM 2020). The BLM's national High AML is 26,770 animals and that number is currently exceeded by 68,344 animals on range. Therefore, more than 116,189 WHBs (both on and off range) are in excess of the current adoption demand. Off-Range Pastures are located on private lands in Oklahoma, Kansas, Iowa, Montana, South Dakota, Nebraska. Missouri, Utah and Wyoming. These ORPs are productive grasslands that average about 10-11 acres per animal. Of the animals currently located in ORPs, less than one percent are age 0-4 years, 49 percent are age 5-10 years, and about 51 percent are age 11+ years. The savings to the American taxpayer which results from contracting for ORP averages about $2.00 per horse per day as compared with maintaining the animals in off-range corral facilities.

Mares and castrated stallions (geldings) are segregated into separate pastures. No reproduction occurs in the ORPs, but some foals are born to mares that were pregnant when they were removed from the range and placed onto the ORP. These foals are gathered and weaned when they reach about eight to ten months of age and are then shipped to off-range corral facilities where they are made available for adoption. Handling of wild horses at the ORPs is minimized to the extent possible although regular on-the-ground observation and weekly counts of the wild horses to ascertain their numbers, well-being, and safety are conducted. A very small percentage of the animals could be humanely euthanized if they are in very thin condition and are not expected to improve to a Henneke Body Condition Score of 3 (USDI Bureau of Land Management. 2015a) or greater due to age or other factors. Veterinarians from the USDA Animal and Plant Health Inspection Service inspect long-term facilities annually, including a full count of animals, with written reports. Contract veterinarians provide animal care at long-term facilities, when needed. Weekly counts provide an incentive for contractors that operate long-term holding facilities to maintain animal health (GAO 2008). Natural mortality of wild horses in ORP averages approximately 8% per year but can be higher or lower depending on the average age of the horses pastured there (USGAO 2008).

The mortality rates at short-term and long-term holding facilities are comparable to the natural annual mortality rate on the range of about 16% per year for foals (animals under age 1), about 5-10% per year for horses ages 1-10 years, and about 10-25% for animals aged 10-20 years (Ransom et al. 2016).

SALE AUTHORITIES WITH LIMITATIONS

On December 8, 2004, the 2005 Omnibus Appropriation Act (PL 108-447, Division E, Title 1, §142) amended the Wild Free-Roaming Horses and Burros Act (Public Law 92-195) and directed the sale of WHBs that meet specific criteria. This amendment to the WFRHBA applies to both agencies. While sale without limitation of healthy horses for which there is no adoption demand is required under the WFRHBA, Congress prohibited the BLM from using appropriated funds for this purpose between 1987 and 2004 and again in 2011. In 2014 the BLM issued policy direction on its sales program. As stated, the intent of this recent policy was to provide additional assurances that animals will not be processed into commercial products.

Potential buyers must fill out an application and be pre-approved before they may buy a wild horse. A sale-eligible wild horse or burro is any animal that is more than 10 years old; or has been offered unsuccessfully for adoption three times. The application also specifies that all buyers are not to re-sell the animal to slaughter buyers or anyone who would sell the animal to a commercial processing plant.

In 2019, Congress similarly restricted the Forest Service from using appropriated funds for the sale of a wild horse or burro that results in the destruction of the wild horse or burro for processing into a commercial product.

DISPOSAL OF EXCESS ANIMALS

This option of disposing excess WHBs, as outlined above for each agency, is **NOT being considered** by either Agency under any of the alternatives and is outside the scope of detailed analysis and this EA.

Under the WFRHBA, each Agency is authorized to destroy excess animals for which an adoption demand does not exist in the most humane and cost-efficient manner possible. This requirement has had recent Congressional restrictions placed on the BLM, implemented through appropriation bills. Although the appropriations restrictions could be lifted in future appropriations bills, it would be contrary to BLM's policy since 1982 to **NOT** destroy healthy excess WHBs (USGAO 2008). Although the Forest Service has had no such restrictions in its Congressional budget direction and agency direction does still allow for consideration of this option to destroy unadoptable healthy excess WHBs, there are no known instances since passage of the WFRHBA of 1971 where this has ever been done by the agency. In 2019, Congress similarly restricted the Forest Service from using appropriated funds for the destruction of any healthy, unadopted, and wild horse or burro.

Under all alternatives both agencies will follow the current BLM guidelines for euthanasia for reasons related to Acts of Mercy, Animal Health and Public Safety as described in the BLM's Instruction Memorandum No. 2015-070 (USDI BLM 2015).

POPULATION GROWTH SUPPRESSION (PGS)

Under the Proposed Action, use of population growth suppression techniques would include, but are not limited to, fertility control vaccines, sterilization (chemical and mechanical) for both males and females, and sex ratio adjustment, to reduce (slow) population growth rates to extend the gather cycle as well as to maintain appropriate management levels and achieve thriving natural ecological balance. Since release of the 2013 NAS Report, the BLM has conducted field trials of potential sterilization methods that could be incorporated into the WHB program, but inclusion of any particular method as a part of management does not depend on completion of any given research project. Supplemental analysis of sterilization methods for this project would follow completion of the BLM's programmatic analysis. The PGS techniques which will be analyzed here include the use of fertility control vaccines, the spaying of mares or jennies, the gelding of stallions or jacks, and sex ratio adjustments.

FERTILITY CONTROL

BLMs Use of Contraception in Wild Horse Management

Expanding the use of population growth suppression to slow population growth rates and reduce the number of animals removed from the range and sent to off-range pastures (ORPs) is a BLM priority. The WFRHBA of 1971 specifically provides for contraception and sterilization (section 3.b.1). No finding of excess animals is required for BLM or Forest Service to pursue contraception in wild horses or wild burros. Contraception has been shown to be a cost-effective and humane treatment to slow increases in wild horse populations or, when used with other techniques, to reduce horse population size (Bartholow 2004, de Seve and Boyles-Griffin 2013). With regard to that result and physiological studies, it is expected that results for horses will likely be applicable for burros. All fertility control methods in wild animals are associated with potential risks and benefits, including effects of handling, frequency of handling, physiological effects, behavioral effects, and reduced population growth rates (Hampton et al. 2015). Contraception by itself does not remove excess horses from an HMA's population, so if a wild horse population is in excess of AML, then contraception alone would result in some continuing environmental effects of horse overpopulation. Successful contraception reduces future reproduction. Limiting future population increases of horses could limit increases in environmental damage from higher densities of horses than currently exist. Horses are long-lived, potentially reaching 20 years of age or more in the wild and, if the population is above AML, treated horses returned to the Complex may continue exerting negative environmental effects throughout their life span. In contrast, if horses above AML are removed when horses are gathered, that leads to an immediate decrease in the severity of ongoing detrimental environmental effects. See Appendix G for detailed analysis of fertility control.

GELDING AND STERILIZATION

Castration (the surgical removal of the testicles, also called gelding or neutering) is a surgical procedure for horse and burro sterilization that has been used for millennia. The procedure is fairly straight forward and has a relatively low complication rate. As noted in the review of scientific literature in Appendix G, the expected effects of gelding are well understood overall, even though there is some degree of uncertainty about the exact quantitative outcomes for any given individual (as is true for any natural system).

Geldings can be used to reduce overall growth rates in a management strategy that does not rely on any expectation that geldings will retain harems or lead to a reduction in per-female fertility rates. In the proposed action being considered in this environmental analysis, the primary goal of including geldings in the herd is not necessarily to reduce female fertility. Rather, by including some geldings in a herd that also has fertile mares and stallions, the geldings would take some of the spaces toward AML that would otherwise be taken by fertile females. If the total number of horses is constant but geldings are included in the herd, this can reduce the number of fertile mares, therefore reducing the absolute number of foals produced. Put another way, if geldings occupy spaces toward AML that would otherwise be filled by fertile mares, that will reduce growth rates merely by the fact of causing there to be a lower starting number of fertile mares. Sterilization of mares through procedures that can be utilized with an acceptable risk may be utilized. Releasing infertile mares will have an equal or greater effect on maintenance of AML compared to release of geldings.

Surgical sterilization techniques, while not reversible, may control horse reproduction without the kind of additional handling or darting that can be needed to administer contraceptive vaccines. In this sense, sterilization surgeries can be used to achieve herd management objectives with a relative minimum level of animal handling and management over the long term. The WFRHBA (as amended) indicates that management should be at the minimum level necessary to achieve management objectives (CFR 4710.4), and if gelding some fraction of a managed population can reduce population growth rates by replacing breeding mares, it then follows that gelding some individuals can lead to a reduced number of handling occasions and removals of excess horses from the range, which is consistent with legal guidelines. Other fertility control options that may be temporarily effective on male horses, such as the injection of GonaCon-Equine immunocontraceptive vaccine, apparently require multiple handling occasions to achieve longer-term male infertility. Similarly, PZP immunocontraception that is currently available for use in wild mares requires handling or darting every year. By some measures, any management

activities that require multiple capture operations to treat a given individual would be more intrusive for wild horses and burros and potentially less sustainable than an activity that requires only one handling occasion.

CONSISTENCY WITH MANAGEMENT PLAN DIRECTION

The Proposed Action is consistent with existing resource management direction from the Forest Service *Toiyabe Land and Resource Management Plan* (USDA FS 1986) as amended (1996); the BLM's Las Vegas Resource Management Plan (1998); and the Red Rock Canyon National Conservation Area RMP (2005b).

ALTERNATIVE 2 (NO ACTION)

DIRECT AND INDIRECT EFFECTS

Under the No Action, the Forest Service and BLM would continue to implement their respective decisions as outlined in the *Background* section herein. Direct and indirect effects from each of the management actions proposed under this Alternative are discussed below.

This alternative would not implement *Population Growth Suppression (PGS)* techniques to reduce the estimated 20% population growth rate. The effects to herd health and indirect effects of continued population growth are described in detail below under PGS.

The NAS report (2013) and others have described the potentially catastrophic effects to animal reproductive behavior from overpopulated and crowded WHB herds. Further discussion is given below. Through animal die-offs due to malnourishment or dehydration, there are no indications that this Complex would become a self-sustaining herd as natural resources become extremely depleted. The more likely result would be that these animals would experience periodic die-offs and would continue to move out of the established Complex in search of other forage and water resources as resources within the JMAs are over-utilized and deteriorate.

Excess WHBs are causing extensive resource degradation. They have exceeded the grazing levels at which healthy range can be maintained and are causing conflicts with wildlife. Under the No Action Alternative, over-utilization of key forage species will continue which will impede regrowth and natural recovery of vegetation. The project area will not achieve a thriving natural ecological balance. Grazing competition between the WHBs and wildlife and grazing pressure on the remaining vegetation within the territory will continue.

APPROPRIATE MANAGEMENT LEVEL VERIFICATION/CLARIFICATION

The current Appropriate Management Levels would remain the same. Each Agency would adhere to their respective established AMLs without consistency between the two agencies. BLM AMLs would reflect analysis which was conducted in 2004 for the Red Rock HMA and 2005 for the Wheeler Pass and Johnnie HMAs. Forest Service AMLs for the Spring Mountain WHT would reflect AML analysis which was conducted in 1996. There would be no direct or indirect effects to the WHB population or individuals because this is an administrative process.

GATHER AND REMOVAL OF EXCESS ANIMALS

There would be no gather or removal of excess animals and, therefore, no direct effects to individuals or the population as a whole. The exception would be if there is a public safety issue where individual WHBs need to be removed to avoid an accident or destruction to private property. In those cases, the nuisance animals may be returned to the JMA of origin or another JMA within the Complex. The excessive over-utilization of forage plants would continue unchecked.

Indirect effects would include stressors applied to individuals and the entire Complex population as the population continues to grow and deplete existing habitat resources. Animals' grazing utilization would continue unchecked and likely expand into areas that have previously not been utilized or are outside the WHBTs or HMAs. The frequency of nuisance and/or public safety encounters would increase considerably. High-speed vehicle to WHB

collisions would become more prevalent and demand for associated responses to injured animals and damaged vehicles increased. Movement of animals outside of the WHBTs or HMAs would become more common than at present. There would be a continued and ever larger presence of wild horses within the three Wilderness areas and adjoining recreation sites on the SMNRA which are outside the WHBTs and HMAs. Wild horses would increasingly impact critical habitat for the endangered Mount Charleston blue butterfly outside the Spring Mountain WHBT. Lactating mares would continue to have low body conditions and associated mortality due to malnutrition. Wild burros would continue to move into urban interface areas that are in close proximity to and outside the Red Rock and Johnnie HMAs including Blue Diamond, Pahrump and high-use recreation areas such as Red Rock Canyon. Wild burros would increasingly impact critical habitat for the threatened desert tortoise in all three HMAs (e.g. Abella and Berry 2016).

POPULATION GROWTH SUPPRESSION (PGS)

There would be no effort to implement PGS techniques. Herd population growth would continue to grow at the estimated 17% or more per year. In some locations, changes in animal behavior due to crowding and limited availability of finite resources would become more acute. Higher population densities could include increased incidences of confusion, separation and desertion of foals from mares at scarce water sources, lowered age-specific fecundity, increased levels of sexual harassment from males, lowered body weights and increased use of low-quality forage species (Berger 1983, Rubenstein 1994). Many of these stressors and symptoms are already prevalent within the planning area. Growth projections by JMA from current population estimates over a five-year period are shown in the following table.

Table 12. Growth projection and gather needs in Year 5 from current population with forecasted growth rates

JMA	Year 1 2021 Estimated Population	Year 5 Projected Population	Excess animals above existing low AML
Red Rock JMA	62H 43B	136H 94B	120H 65B
Spring Mtn/ Wheeler Pass JMA	74H 169B	162H 371B	115H 351B
Johnnie JMA	145H 339B	318H 743B	318H 689B
Totals	**281H 551B**	**616H 1,208B**	**553H 1,105B**

Under the No Action Alternative, population projections using the WinEquus Model for wild horses (Jenkins 1996; Appendix F) forecasted for the entire Complex that in 11 years and 100 trials, the average population size across 11 years was 1,521 animals. The median average annual growth rate was 17.0%-17.2% in 10 years. Most Typical Trial indicates that the population will exceed low-AML range by a multitude of 9 or more in 11 years.

NO ACTION ALTERNATIVE CUMULATIVE EFFECTS

The potential effects of an expanding wild horse and burro herd is unique and there are no reasonably foreseeable actions that, when taken into consideration along with the effects of the No Action Alternative, would result in an incremental increase in the effects of excess wild horses and burros.

CONSISTENCY WITH MANAGEMENT PLAN DIRECTION

The No Action Alternative is NOT consistent with existing resource management direction from the Forest Service *Toiyabe Land and Resource Management Plan* (USDA FS 1986) as amended (1996); the BLM's Las Vegas Resource Management Plan (1998); and the Red Rock Canyon National Conservation Area RMP (2005b). The No Action

would not allow the agencies to achieve the principal goal of protecting WHBs while managing to preserve and maintain a *thriving natural ecological balance* between WHB and multiple-use of these public lands.

TRIBAL CONSULTATION

Based on the nature of the proposal, the line officer/responsible official made the following determination regarding Tribal Consultation:

Consultation with American Indian Tribes is ongoing.

SUPPORTING PROJECT DOCUMENTATION

Table 14: Applicable Project File Documentation to Support Tribal Consultation Compliance

Documentation Type	File Name(s)
Tribal Consultation Letter	Chairman Scoping Letter 06102013.doc
Tribal Consultation Letter	20210625 Tribal Update Letter
Mailing List for Tribal Consultation Letter	2021 Tribal Mailing List.xlsx
NUWU/NUWUVI Working Group	March 25. 2022 in-person meeting
Tribal Consultation Letter	May 5, 2022 Final EA Tribal Update Letter

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Other - See explanation of other determination in comments section.

COMMENTS

A cultural resources assessment is mandated by the National Historic Preservation Act of 1966 (NHPA). Section 106 of the NHPA requires that federal agencies consider the effects of a federal undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). The regulations for implementing Section 106 are detailed in 36 CFR Part 800, which requires the determination of the project's area of potential effect (APE) and identification of historic properties within that APE. The APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The APE is determined in consultation with the appropriate SHPO(s), Native American Tribes and other interested parties.

Per Section 106, the agencies (USFS/BLM) will consult with the Nevada SHPO on APE definitions, site eligibility determinations and effects determinations. It is the intent to avoid cultural resources in locating ground disturbing activities on USFS and BLM managed public lands. Implementation of management actions included in the agencies' respective decisions will not occur until NHPA Section 106 obligations have been completed. At this time, this project does not have a defined APE under Section 106; the locations for trap sites, holding facilities and other ground disturbing activities will be chosen prior to the gather(s) based on a variety of factors. Consultation under NHPA Section 106 will proceed at that time. Per the BLM/NV SHPO Programmatic Agreement, projects located on Public Lands managed by the BLM will have a Cultural Resource Inventory Needs Assessment completed prior to authorization of gather activities to document the Authorized Officer's decisions related to the level of inventory necessary for the activities.

SUPPORTING PROJECT DOCUMENTATION

Table 13: Applicable Project File Documentation to Support NHPA Compliance

Documentation Type	File Name (if applicable/needed)
Heritage Review Documentation	Heritage review documentation

SPECIAL MANAGEMENT AREAS (INVENTORIED ROADLESS AREA)

The pertinent specialist has reviewed the proposal and made the following determinations based on special management area presence/proximity or lack of:

Table 15: Special Management Area Compliance Determinations

Management Area Type	Applicable Law/Regulation to Demonstrate Compliance With	Rationale for Compliance or Needs for Proposal Modification
Inventoried Roadless Areas	2001 Roadless Area Conservation Rule	The Spring Mountains Wild Horse and Burro Complex includes portions of multiple Inventoried Roadless Areas. As there is no proposed road building or vegetation treatments there will be no impact to the roadless characteristics. All temporary infrastructure related to gathers would be sited on previously disturbed areas near or on designated NFS roads. There will be motorized vehicle use authorized off designated NFS roads. The proposed action and No Action alternative would not result in changes to the roadless area characteristics of present in the IRAs.

I) SUPPORTING PROJECT DOCUMENTATION

Table 16: Applicable Project File Documentation to Support Special Management Area Compliance

Documentation Type	File Name(s)
Resource Condition Checklist	20210525ResourceConditionChecklist_RecWildRoadlessVisual

CLEAN AIR ACT (CAA)

The pertinent specialist has reviewed the proposal and made the following determinations regarding the CAA:

COMMENTS

The proposed action includes design elements to address air quality. Dust abatement will occur at gather sites, holding pens and bait trap sites per project design elements. Actions will comply with Nevada State air quality standards.

SUPPORTING PROJECT DOCUMENTATION

Table 17: Applicable Project File Documentation to Support CAA Compliance

Documentation Type	File Name(s)
Table 4 Design Elements	Environmental Assessment

CLEAN WATER ACT (CWA)

The pertinent specialist has reviewed the proposal and made the following determination:

The proposed action is consistent with the laws and policies related to the Clean Water Act. The proposed action, including design elements, and best management practices will reduce or eliminate impacts to water quality. No adverse effects to water quality are expected as a result of implementation of this project.

Supporting Project Documentation

Table 18: Applicable Project File Documentation to Support CWA Compliance

Documentation Type	File Name(s)
Specialist Report	Soil, Water, and Riparian Areas Report

PERTINENT EXECUTIVE ORDERS

The line officer and/or applicable specialist(s) have determined the proposal is in compliance with the following Executive Orders (EO), which were deemed pertinent based on the nature of the proposal.

- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12962, Aquatic Systems and Recreational Fisheries
- EO 13007, American Indian Sacred Sites
- EO 13112, Invasive Species
- EO 13175, Consultation & Coordination w/ Indian Tribal Governments
- EO 13186, Migratory Bird Treaty

COMMENTS

The proposed action complies with the Executive Orders listed above (see hydrology/soils, cultural, aquatics, range, and wildlife resource condition checklists in the project record).

APPENDICES

Appendix A – Map Package

Appendix B – SOPs for Gathers

Appendix C – SOPs for Fertility Treatments

Appendix D – SOPs for Sterilization

Appendix E – Utilization Monitoring

Appendix F – Population Modeling

Appendix G – Gelding and Fertility Analysis

Appendix H – Literature Cited

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

After consideration of the environmental effects as described in the EA, as well as documentation included in the project record, I have determined that the proposed action with the project design elements will not have a significant impact on the human environment and that an EIS is not required to be prepared.

This finding and conclusion is based on consideration of the Council on Environmental Quality's (CEQ) criteria for significance, both with regard to the context and the intensity of impacts described in the EA.

CONTEXT

Disclosure of direct, indirect, and cumulative effects in the EA demonstrate that the proposed action is a site-specific action that is limited in scope and duration. The proposed action will primarily affect the natural resources of the Spring Mountains National Recreation Area (165,000 acres) and adjacent public lands (784,000 acres) managed by the BLM Pahrump Field Office. Based on the proposed action and associated design elements, this action will have minor localized effects on the resources of the area. Potential environmental effects would be localized to the project area and would not be measurable at a regional or larger scale. The proposed action would be consistent with the management area prescriptions and forest plan standards and guidelines specified for the area. Implementation would occur over time, with a small percentage of acres being impacted by gathers at any one time.

INTENSITY

Based on my review of the effects analysis in the EA and documentation in the project record against CEQ's factors for intensity, there is no evidence that the impacts are significant:

(1) Impacts that may be both beneficial and adverse.

Effects, both beneficial and adverse, and their significance have been evaluated for all the alternatives considered. None of the adverse effects were determined to be significant, singularly or in combination. The beneficial effects of the action do not bias my finding of no significant environmental impacts. The anticipated environmental effects and their intensity have been disclosed for each alternative in the environmental assessment (pages 18-45). Beneficial impacts were not used to minimize the severity of any adverse impacts.

The project record includes detailed analyses of the effects of the alternatives to wild horses and burros, wildlife, rangeland resources, water quality, soils, archeological or botanical resources. Project design elements will be implemented as part of the decision to avoid or minimize impacts to resources. In reaching my conclusion of no significant impacts, I recognize this project is likely to have impacts that are perceived as negative as well as positive.

(2) The degree to which the proposed action affects public health or safety.

Implementation of the proposed action will improve public safety by reducing the number of excess wild horses and burros that stray from the Complex into areas such as neighborhoods and highways where they pose a threat to public safety. Multiple gathers have occurred since 2012 in and around the Complex to remove excess animals that were a threat to public safety. Management of wild horse and burro populations within the AML ranges for the JMAs will ensure plenty of forage, water, cover and space is available for the animals within the JMAs so that they do not need to leave the JMAs in search of these necessary habitat components.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

There will be no effects on unique characteristics in the area. There are no park lands, prime farmlands, wetlands, or ecologically critical areas located within the project area. There are no congressionally designated wild and scenic rivers in the JMAs.

There are three wilderness areas adjacent to the JMAs. The JMAs do not include any congressionally designated wilderness areas. Management direction is to exclude wild horse and burro use in wilderness areas. The Johnnie JMA includes the Mount Stirling wilderness study area. The proposed action will have an overall beneficial influence on wilderness character in the three wilderness areas and the wilderness study area because removal of wild horses and burros from wilderness would benefit multiple wilderness resources (soils, vegetation, water resources).

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

Although the project may be viewed by some as controversial, the effects of the alternatives are not controversial in a scientific sense. No evidence has been presented which raises substantial questions as to the correctness of the environmental consequences that have been estimated. Not all the comments received from the public were in full support of this project. The project record and environmental assessment document the interdisciplinary team review of these comments and concerns. Some members of the public disagree with various components of the project and have raised concerns related to the proposed action. Such a disagreement about agency actions does not constitute a level of controversy that requires a more extensive level of NEPA analysis. Based on the analysis presented in the EA and project record there is not an unusual or high degree of scientific disagreement related to the effects of this project.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The actions proposed were designed to achieve the objectives identified in the Toiyabe forest plan as amended, and in conformance with the 1971 Wild Free-Roaming Horses and Burros Act, as amended. The effects analyses documented in the EA and in the project record incorporate accepted techniques and methods, review of the best available scientific literature, reliable data, field review, and the judgment of qualified professional resource specialists. Neither these analyses nor public comments identified highly uncertain effects or unique or unknown risks associated with the alternatives (EA pages 18–45). This conclusion is based on the consideration of results from other similar projects; past local experience; and expected environmental consequences based on the best available scientific information. These effects are well known and documented through similar projects throughout the West.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

This project follows established procedures and agency roles and responsibilities under the legal and regulatory framework. The activities associated with the proposed action are similar to many that have previously been implemented and will continue to be implemented by Forest Service line officers on National Forest System lands. The activities are within the scope of the Forest Plan and does not establish a precedent for future actions.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The analysis completed for the EA (EA, pages 18-45) demonstrates that there are no significant cumulative effects on the environment when project impacts are combined with the effects of past and reasonably foreseeable future projects and the effects from natural changes taking place in the environment.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

Project-specific design elements listed in the EA avoid and/or protect cultural resources. This action will have no adverse effects to historic properties. It is the intent of the agencies to avoid cultural resources in locating

ground disturbing activities on USFS and BLM managed public lands. Implementation of management actions included in the agencies' respective decisions will not occur until NHPA Section 106 obligations have been completed. At this time, this project does not have a defined area of potential effect under Section 106; the locations for trap sites, holding facilities, and other ground disturbing activities will be chosen prior to the gather(s) based on a variety of factors. Consultation under NHPA Section 106 will proceed at that time. Per the BLM/NV SHPO Programmatic Agreement, projects located on Public Lands managed by the BLM will have a Cultural Resource Inventory Needs Assessment completed prior to authorization of gather activities to document the Authorized Officer's decisions related to the level of inventory necessary for the activities.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

A Biological Assessment has been completed to document analysis of potential effects of this project on Threatened, Endangered, Proposed, or Candidate species and their critical habitats.

Consultation with USFWS has been initiated for Mount Charleston blue butterfly. Direct effects from the selected action will be short in duration and localized. Design criteria minimize direct effects. Indirect effects are beneficial to the species.

The project is consistent with the programmatic Biological Opinion for desert tortoise. All impacts from the selected action would be short-term and localized. Design criteria minimize direct effects. Impacts would be beneficial in the long-term for desert tortoise.

No plant or aquatic Threatened, Endangered, Proposed, or Candidate species or habitat occur in the project area; therefore, implementation of the selected action will have "No Effect" on Threatened, Endangered, Proposed, and/or Candidate plant and aquatic species.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The proposed action would not violate Federal, State, or local laws or requirements. The EA and resource condition checklists included in the project record demonstrate compliance with the National Environmental Policy Act of 1969, with the National Forest Management Act of 1976, and with the Endangered Species Act of 1973.

DRAFT DECISION NOTICE

Spring Mountains Wild Horse and Burro Complex Herd Management Area Plan

U.S. Forest Service

Spring Mountains National Recreation Area, Humboldt-Toiyabe National Forest

Clark and Nye Counties, Nevada

The Decision Notice incorporates all previous information in the Environmental Assessment and Finding of No Significant Impact (FONSI), as well as information included in the project record.

DECISION & RATIONALE

Based upon my review of the potential environmental consequences, I have decided to authorize the activities described in the Purpose and Need & Proposed Action, including the design elements listed on pages 8-16. My decision to implement the proposed action meets the project purpose and need to reduce the impacts to the environment caused by excess wild horses and burros, improve the ecological conditions across the Spring Mountains WHB Complex and move toward a more balanced distribution of animals. The proposed action allows for consistent management of the wild horse and burro populations across the Complex. Implementation of the proposed action will allow wild horses and burros year-round access to essential habitat components (forage, water, cover, and space) and unimpeded natural movement within each JMA while controlling herd size and minimizing emigration of wild horses and burros outside the JMAs. The proposed action is consistent with federal law, including the 1971 WFRHBA, state and local laws, Forest Service regulations and policy, the Toiyabe National Forest Land and Resources Management Plan and the 1996 SMNRA General Management Plan.

Leaving excess wild horses and burros on the range under the no action alternative would not comply with the 1971 WFRHBA or Forest Service regulations, policy, and management direction. The no action alternative would allow continued deterioration of rangeland resources as a result of the current overpopulation of wild horses and burros within and outside the Spring Mountains Complex, with potentially irreversible loss of native plant communities. Wild horses and burros would continue to move outside the Complex boundaries due to competition for limited water and forage in the Complex adversely impacting critical habitat for endangered species and creating more public safety hazards in high recreation use areas. The no action alternative increases the likelihood of emergency gathers to prevent horse and burro suffering and death as forage and water becomes more limited.

SUMMARY OF PUBLIC INVOLVEMENT

The proposal was first published in the Schedule of Proposed Actions on January 1, 2013 and posted on the Humboldt-Toiyabe National Forests' website. On June 14, 2013, a legal notice announcing the 30-day comment period and scoping was published in the Reno Gazette Journal which was the USFS newspaper of record at the time. In addition, as part of the public involvement process, three USFS and BLM joint public meetings were held: 1) June 25, 2013 in Pahrump, NV; 2) June 26, 2013 in Good Springs, NV; and 3) June 27, 2013 in Cold Creek, NV.

A Preliminary EA was developed and released for an official 30-day comment period beginning September 29, 2021, being announced through gov delivery to approximately 1,562 groups, individuals, Tribes, and state and federal agencies. The availability of the Preliminary EA for public comment was also announced with a news release sent to local media.

Additional detail on public involvement can be found in the Public Involvement section of the EA. The comments and the Humboldt-Toiyabe National Forest response to comments documents are part of the project record and are available for public review.

FINDINGS REQUIRED BY OTHER LAWS/REGULATIONS

Findings required by other laws and regulations applicable to the Proposal can be found in the Environmental Impacts section.

ADMINISTRATIVE REVIEW & OBJECTION OPPORTUNITIES

This proposed decision is subject to objection pursuant to 36 CFR 218, Subparts A and. Objections will only be accepted from those who submitted project-specific written comments during scoping or other designated opportunity for public comment in accordance with 36 CFR 218.5(a). Issues raised in objections must be based on previously submitted timely, specific written comments regarding the proposed project unless based on new information arising after designated opportunities to comment.

Individual members of organizations must have submitted their own comments to meet the requirements of eligibility as an individual. If an objection is submitted on behalf of a number of individuals or organizations, each individual or organization listed must meet the eligibility requirement of previous written comment. Names and addresses of objectors will become part of the public record.

Objections must be submitted within 45 days following the publication of the legal notice in the *Las Vegas Review Journal.* The date of the legal notice is the exclusive means for calculating the time to file an objection. Those wishing to object should not rely upon dates or timeframes provided by any other source. It is the objector's responsibility to ensure evidence of timely receipt (36 CFR 218.9).

Objections must be submitted in writing to the Reviewing Officer, William A. Dunkelberger, Forest Supervisor. Objections may be submitted via mail to: Objection Reviewing Officer, Intermountain Region USFS, 324 25th Street, Ogden, Utah 84401, or delivered during business hours (M-F 8:00am to 4:30pm); or by fax to (801) 625-5277. Electronic objections, in common (.doc, .pdf, .rtf, .txt) formats, may be submitted to: objections-intermtn-regional-office@fs.fed.us, with Subject: *Spring Mountains Herd Management Area Plan*

Objections must include (36 CFR 218.8(d)): 1) name, address and telephone; 2) signature or other verification of authorship; 3) identify a single lead objector when multiple names are listed on an objection; 4) project name, Responsible Official name and title, and name of affected National Forest(s) and/or Ranger District(s); 5) Sufficient narrative description of those aspects of the proposed project objected to, specific issues related to the project, how environmental law, regulation, or policy would be violated, and suggested remedies which would resolve the objection; and, 6) description of the connection between your objections and your prior comments. Incorporate documents by reference only as provided for at 36 CFR 218.8(b).

IMPLEMENTATION DATE

If no objections are filed within the 45-day time period, approval of the decision may occur on, but not before, five business days from the close of the objection filing period. It is expected that implementation will begin in 2022.

CONTACT

For additional information, contact Project Lead: ***Rixey Jenkins,*** at the ***Humboldt-Toiyabe National Forest, Forest Supervisors Office 1200 Franklin Way, Sparks, NV 89431*** call ***775-355-5387*** or email ***rixey.jenkins@usda.gov.***

Click here to enter a date.

Deborah MacNeill

Spring Mountains National Recreation Area Manager