

**U.S. Department of the Interior  
Bureau of Land Management**

---

**ELY DISTRICT DROUGHT MANAGEMENT  
ENVIRONMENTAL ASSESSMENT**

**DOI-BLM-NV-L000-2013-0002-EA**

**July, 2013**

**PREPARING OFFICE**

U.S. Department of the Interior  
Bureau of Land Management  
Ely District Office  
HC 33 Box 33500  
Ely, NV 89301  
(775) 289-1800





**ELY DISTRICT DROUGHT  
MANAGEMENT  
ENVIRONMENTAL  
ASSESSMENT  
DOI-BLM-NV-L000-2013-0002-EA**

**July, 2013**

This page intentionally  
left blank

# Table of Contents

<b>1. Introduction .....</b>	<b>1</b>
1.1. Identifying Information: .....	1
1.1.1. Title, EA number, and type of project: .....	1
1.1.2. Location of Proposed Action: .....	1
1.1.3. Name and Location of Preparing Office: .....	1
1.1.4. Introduction .....	1
1.2. Purpose and Need for Action: .....	5
1.3. Conformance with Land Use Plans and Other Plans .....	5
1.4. Relationships to Statutes, Regulations, Policy or other Environmental Analysis .....	5
1.5. Additional Guidance .....	6
1.6. Scoping, Public Involvement and Issues: .....	6
<b>2. Proposed Action and Alternatives .....</b>	<b>7</b>
2.1. Description of the Proposed Action: .....	9
2.2. Description of Alternatives Analyzed in Detail: .....	19
2.3. Alternatives Considered but not Analyzed in Detail .....	19
<b>3. Affected Environment: .....</b>	<b>23</b>
3.1. General Setting .....	25
3.2. Resources Considered .....	25
3.3. Resources Present and Brought Forward for Analysis .....	28
<b>4. CUMULATIVE EFFECTS .....</b>	<b>89</b>
<b>5. Tribes, Individuals, Organizations, or Agencies Consulted: .....</b>	<b>107</b>
<b>6. List of Preparers .....</b>	<b>111</b>
<b>7. Literature Cited .....</b>	<b>115</b>
<b>8. Response to Public Comments Matrix .....</b>	<b>123</b>

This page intentionally  
left blank

**List of Maps**

Map 1.1. Ely District Boundaries ..... 3  
Map 1.2. Ecoregions on the Ely District ..... 4

This page intentionally  
left blank

# **Chapter 1. Introduction**

This page intentionally  
left blank

## **1.1. Identifying Information:**

### **1.1.1. Title, EA number, and type of project:**

ELY DISTRICT BLM DROUGHT MANAGEMENT  
ENVIRONMENTAL ASSESSMENT DOI-BLM-NV-L000-2013-0002-EA

### **1.1.2. Location of Proposed Action:**

The Ely District of the Bureau of Land Management, Comprising all of White Pine County, Lincoln County, and a small portion of Nye County, Nevada.

### **1.1.3. Name and Location of Preparing Office:**

Lead Office - Ely District Office, HC 33 Box 33500, Ely, Nevada, 89301 (775) 289–1800

### **1.1.4. Introduction**

The Bureau of Land Management (BLM) Ely District (EYDO) has prepared this Environmental Assessment (EA) to address potential environmental consequences associated with livestock, wild horse management, and wildlife actions carried out during drought. The EYDO manages approximately 11.5 million acres of public land within White Pine, Lincoln, and Nye Counties in Nevada. The BLM administers this area through three field offices; the Egan Field Office (EFO) the Schell Field Office (SFO) and the Caliente Field Office (CFO) (see Map 1).

The EYDO is located within the Central Basin and Range and Mojave Basin and Range ecoregions defined by the Western Ecology Division of the United States Environmental Protection Agency (see Map 2).

Drought has been defined by the Society of Range Management as, “(1) A prolonged chronic shortage of water, as compared to the norm, often associated with high temperatures and winds during spring, summer, and fall. (2) A period without precipitation during which the soil water content is reduced to such an extent that plants suffer from lack of water.” (Bedell 1998).

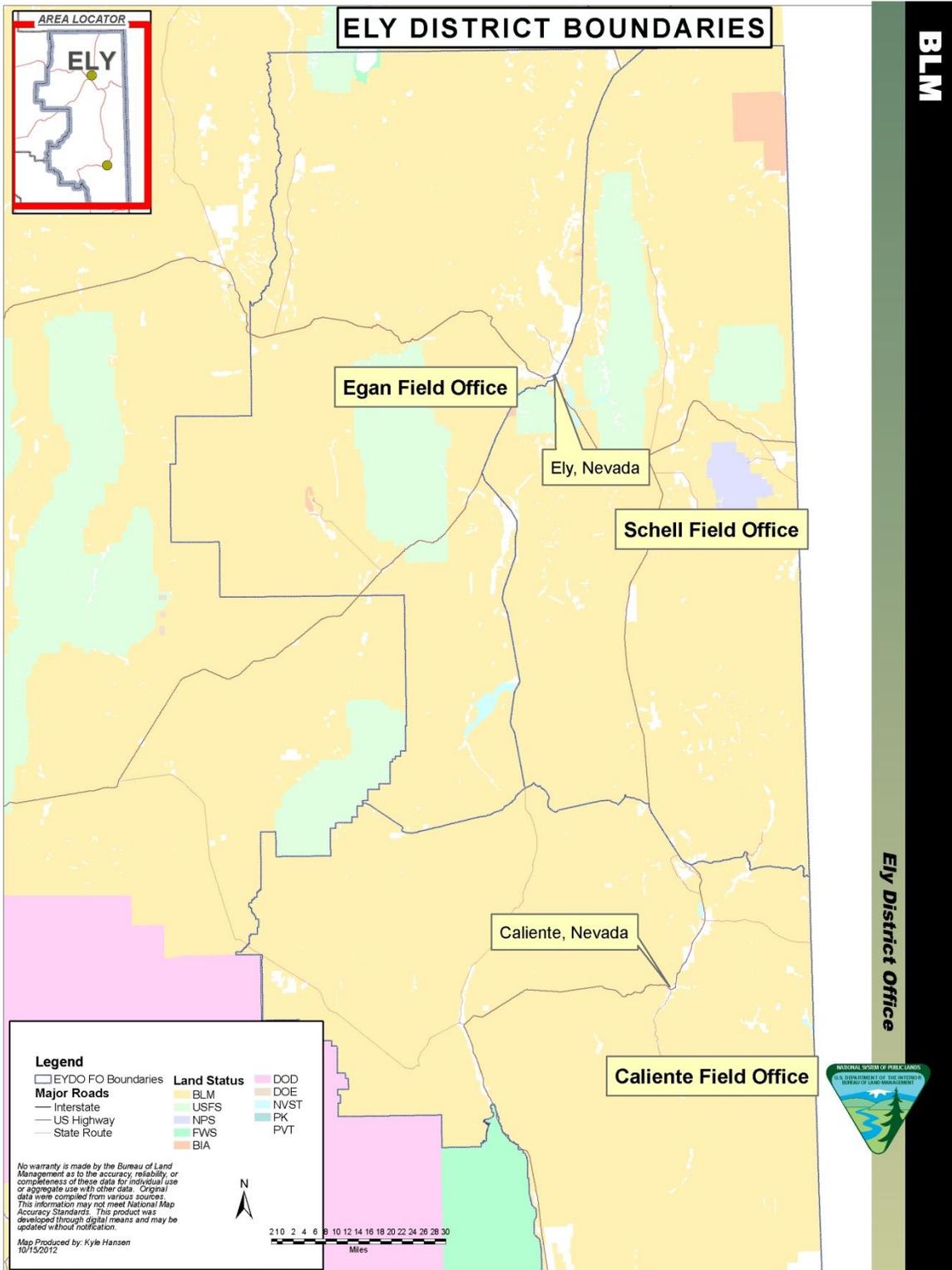
The effects of drought are often times far reaching, impacting the environment and economy of an area. This EA will focus primarily on the environmental impacts of drought. Specific impacts depend on drought severity but often include:

- Increased number and severity of fires
- Lack of forage and drinking water
- Decreased vigor and production of plants
- Damage to plant species
- Increased wind and water erosion of soils
- Reduction and degradation of fish and wildlife habitat

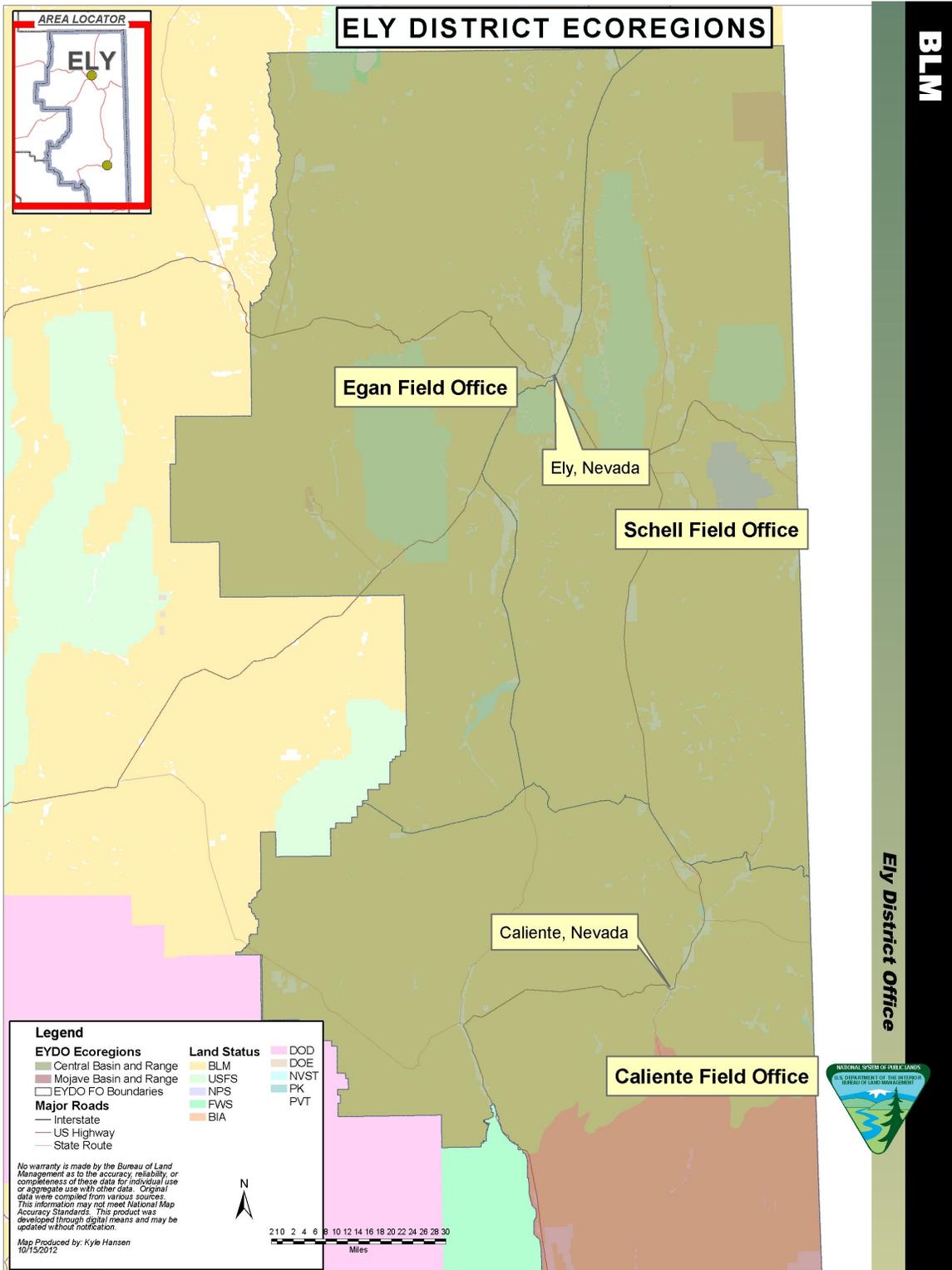
### Increased death loss of wildlife, wild horses and livestock

Drought is a recurring, albeit unpredictable, environmental feature which must be included in planning (Thurow and Taylor 1999). The degree to which drought impairs the range depends on the intensity, frequency and timing of grazing (Howery 1999).

This EA analyzes a range of management alternatives that the BLM could implement to mitigate the effects of drought and to address emergency situations. Emergency situations include but are not limited to wild horse water deprivation and death, major soil erosion events, rangeland degradation, livestock starvation due to lack of forage, Adverse impacts to habitats and non-managed species dependent upon them that could be mitigated through management of livestock and horses.



**Map 1.1. Ely District Boundaries**



**Map 1.2. Ecoregions on the Ely District**

## **1.2. Purpose and Need for Action:**

The purpose of the action is to provide rapid response to drought conditions on the Ely District by adjusting management of wild horses, livestock, and other authorized uses.

The need for the action is that the fundamentals for range land health are not being met during drought.

## **1.3. Conformance with Land Use Plans and Other Plans**

### 1.2 Conformance with Land Use Plans and Other Plans

The Proposed Action and Alternatives described below are in conformance with the following plans:

- Ely District Resource Management Plan (2008) (RMP).

The proposed action is in conformance to the following specific portions of the RMP:

**Veg-9.2** “Limit the transition of immature and mature phases to the overmature phase and from becoming infested with invasive species.”

**WL-1** “Emphasize management of priority habitats for priority species...”

**Special Status Species Goal** “Manage public lands to conserve, maintain, and restore special status species populations and their habitats; support the recovery of federally listed threatened and endangered species; and preclude the need to list additional species.”

**Livestock Grazing Goal** “Manage livestock grazing on public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield and watershed function and health.”

## **1.4. Relationships to Statutes, Regulations, Policy or other Environmental Analysis**

The Proposed Action and Alternatives is in conformance with the following Federal, BLM regulations:

- Taylor Grazing Act of 1934
- National Environmental Policy Act of 1969 (NEPA)
- National Historic Preservation Act of 1966, as Amended (NHPA)
- Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA)
- Endangered Species Act of 1973
- Federal Land Policy and Management Act of 1976 (FLPMA)
- Public Rangelands Improvement Act of 1978
- Wilderness Act of 1964

- 43 CFR §§4100 and 4700
- Northeastern Great Basin Resource Advisory Council (RAC) Standards and Guidelines;
- Mojave-Southern Great Basin (RAC) Standards and Guidelines, 2006 as amended.

## **1.5. Additional Guidance**

Guidance on the development and implementation of responsive management actions when it is anticipated or evident that temporary measures are necessary to protect public land resources due to the impacts of drought can be found in the BLM Nevada Handbook NV H-1730-1 Resource Management during Drought.

## **1.6. Scoping, Public Involvement and Issues:**

The Proposed Action was scoped internally on December 4th, 2012. A letter was sent out to the Native American tribes on December 17th, 2012. No responses to the Native American Consultation letter were received. A thirty day public review/comment period for the EA was provided on from February 15, 2013 to March 21, 2013. Numerous comments were received from individuals and organizations. Responses to these comments are provided in Chapter 8. Based on a review of public comments received, no substantial changes have been made to this EA. One public comment did identify the need for current wild horse census data. This was also noted internally and has been updated in this EA. Also, another public comment requested an alternative to manage wild horses at AML. This comment has been addressed in the alternatives considered but eliminated section.

# **Chapter 2. Proposed Action and Alternatives**

This page intentionally  
left blank

## 2.1. Description of the Proposed Action:

The Proposed Action is to implement, either separately or in combination, Drought Response Actions (DRAs) identified below during drought. The BLM would follow the directions outlined in the BLM Nevada Handbook NV H-1730-1 Resource Management during Drought to facilitate the early detection and monitoring of drought conditions.

BLM would first attempt to use verbal and written agreements with grazing permittees in accordance with NV H-1730-1 to achieve the desired effects to resources at risk due to drought. If unsuccessful, BLM would implement DRAs through the issuance of full force and effect decisions pursuant to 43 CFR §4110.3-3(b). BLM would support these decisions based upon site-specific monitoring data collected. BLM would make these decisions after consultation with, or following a reasonable attempt to consult with, affected permittees or lessees, the interested public, and other entities having lands or responsibilities for managing resources within the area. The BLM would implement Decisions in compliance with all appropriate laws, regulations, and policies.

The BLM would justify drought gathers for wild horses based upon thorough documentation of necessity with a site-specific drought gather plan. If BLM determines that wild horse removal from a Herd Management Area(s) (HMA) is warranted, pursuant to 43 CFR §4710.5, areas of allotment(s) that overlap with the HMA(s) would be temporarily closed to livestock grazing.

The BLM would activate implementation of DRAs through the use of the drought indicators and drought response triggers identified below.

### A. Drought Indicators

The EYDO would use the following indicators to determine the onset and/or continuation of a drought.

BLM would:

1. consult the U.S. Drought Monitor (<http://droughtmonitor.unl.edu/>) to determine if weather conditions indicate drought and to identify affected areas. BLM would use site visits to allotments and/or Herd Management Areas (HMAs) within drought-afflicted areas to evaluate the current condition of water resources and determine if water shortages exist.
2. Consult the Vegetation Drought Response Index (VegDRI) (<http://veg dri.unl.edu/>) to determine drought afflicted areas and vegetation condition as it pertains to drought stress.
3. Use site visits to allotments and HMAs within drought-afflicted areas to evaluate the current condition and production of key forage species as described in the associated Ecological Site Descriptions (ESDs) for the area. In instances where key species referenced in the ESD are absent, BLM would identify key species using site-specific and/or past monitoring data. BLM would use evaluations to determine if plants are exhibiting signs of drought stress and if forage shortages exist. Signs of drought stress include reduced shoot and leaf growth, reduction in seed head development, induced senescence (i.e., premature aging) and plant death.

## **B. Drought Response Triggers**

Drought Response Triggers (Triggers) are thresholds associated with forage and water resources that indicate the need for site-specific drought response. BLM would use triggers separately or in combination to activate DRAs. The BLM places these Triggers into two categories: (1) water and (2) forage. The following is a list of the triggers for both categories, a more detailed description of the triggers is included in Attachment 1:

### **1. Water**

This Trigger is contingent on the presence or absence of available water. Field visits would be conducted in drought-afflicted areas to determine if there are adequate water sources (natural and/or developed) to provide for the management and/or distribution of wildlife, wild horses, and livestock while maintaining riparian area functionality or the health of upland areas surrounding developed water sources (e.g., wells, pipelines, guzzlers, spring developments, etc.).

BLM would classify water as “available” or “unavailable” within areas affected by drought. BLM defines “Available” as an amount of water sufficient to provide a safe and reliable source of drinking water for wildlife, wild horses, and livestock while maintaining resource values associated with the riparian areas and/or areas surrounding the water source. Resource values associated with riparian areas include riparian vegetation, bank stability, wildlife habitat, and water quality. Resource values associated with upland areas surrounding water sources (e.g., wells, pipelines, etc.) include vegetation, nutrient cycling, soil site stability, hydrologic function and wildlife habitat.

BLM defines “Unavailable” as an absence of water or an amount of water that is insufficient to provide a safe and reliable source of drinking water for wildlife, wild horses, and livestock while maintaining resource values and respecting water rights.

BLM would use field observations, adjudicated water rights, and professional judgment to determine availability. Criteria such as reduced quantity, noticeable accumulation of animal waste, and unsafe conditions due to mud or severely eroded banks are the criteria that BLM would use.

### **2. Forage**

To survive, perennial plants must accumulate both above ground (shoot growth) and below ground (root growth) biomass through the process of photosynthesis, transpiration, and respiration (Howery 1999). A lack of available soil moisture usually reduces the length of the growing season. A shorter growing season directly impacts above and below ground production and ultimately forage quantity. The degree to which drought impairs the range’s potential for future forage production depends on the intensity, frequency, and timing of grazing (Howery 1999). Drought afflicted rangelands are unable to support pre-drought stocking levels. Overutilization during drought can negatively impact plant health and impair the ability (in the future) to meet, or make significant progress towards fulfillment of, the standards and guidelines of rangeland health.

The BLM intends to use the following drought response triggers associated with forage to ensuring proper utilization levels of upland and riparian key species, as described in the ESD associated with the site. In instances where key species referenced in the ESD are absent, BLM would identify key species using site-specific and/or past monitoring data. Appropriate utilization levels provide adequate residual matter for the maintenance of plant health especially during a

drought. BLM has organized the triggers into three categories; utilization and stubble height triggers by vegetation community, livestock distribution, and plant production/drought stress.

### **Utilization and Stubble Height**

The BLM developed utilization triggers using the utilization guidelines proved by Holechek et al. (1988). The guidelines provide a range of use associated with rangeland condition. For the purpose of grazing management during times of drought, the BLM has chosen to limit utilization of key species to the lower utilization level. The lower utilization levels are consistent with those suggested for ranges in poor condition. BLM chose the lower utilization levels due to the reduced vigor and production of range forage plants resulting from drought. The following utilization levels would function as drought response triggers within each respective vegetation community and would trigger the implementation of DRAs. BLM developed stubble height triggers to ensure adequate residual matter remains to maintain riparian plant communities. Generally, stubble heights of 4 to 6 inches provide effective stream bank protection, prevent sedimentation, and maintain or improve plant communities (USDI 1999-2001). BLM would identify key species using the ESD for a specific area. In instances where key species referenced in the ESD are absent BLM would identify key species using site-specific and/or past monitoring data.

BLM would use the following levels of utilization as triggers within the respective communities:

- **Salt Desert Shrub**
  - 25 % utilization of key species.
- **Sagebrush Grassland**
  - 30% utilization of key species.
- **Pinion-Juniper Woodland**
  - 30% utilization of key species.
- **Mountain Shrub**
  - 30% utilization of key species.
- **Riparian Zones**
  - Four inch stubble height of key riparian species.

### **Livestock and Wild Horse Distribution**

A pattern of use or distribution of livestock and/or wild horses resulting in a concentration of animals, which contributes to grazing in excess of the aforementioned utilization levels and/or stubble heights, would trigger DRAs to improve animal distribution and prevent further rangeland degradation.

### **Plant Production and/or Drought Stress**

The following plant production and/or drought stress indicators would trigger DRAs:

- Drought induced senescence or reduced production of key upland and/or riparian species which results in an insufficient quantity of forage for wildlife, wild horses, and livestock;

- Drought induced senescence of key riparian herbaceous species which results in insufficient plant growth/height to provide for stubble heights equal to or greater than four inches within riparian areas; and
- Noticeable signs of drought stress which impede the ability of key species to complete their life cycle (e.g., drought induced senescence, reduced seed head development, etc.).

### **C. Drought Response Actions**

BLM would implement the following either separately or in combination upon reaching the criteria described under the Drought Response Triggers section. A more in depth discussion of each action is located in Attachment 2. BLM separated the DRAs in two categories: livestock and wild horses. BLM made this separation due to the differing nature and capabilities for management of livestock and wild horses. BLM would select drought response actions based on site-specific information. In areas where livestock and wild horse use overlaps, BLM would implement both livestock and wild horse DRAs concurrently.

#### **1. Livestock**

BLM would select DRAs on a case-by-case basis using site-specific monitoring data. BLM would use the following process for DRA selection:

*Step 1: Conduct field visits to “drought-afflicted” areas to assess drought response triggers.* Field visits would assess water and forage availability at predetermined sites.

*Step 2: Pursuant to 43 CFR §4110.3-3(b), consult with, or make a reasonable attempt to consult with, affected permittees or lessees to determine appropriate DRA(s) to alleviate drought impacts.* DRAs would be selected using site-specific monitoring data and chosen on case-by-case basis suited to site-specific conditions. BLM could select more than one DRA depending on conditions. BLM would make efforts to select and implement DRAs in a subsequent fashion to respond to changes in drought conditions.

*Step 3: Implement DRAs in selected order.* Order would be determined based on site-specific monitoring data.

*Step 4: Full closure of allotment or a use area.* The EYDO would resort to full closure of an allotment or a use area if: 1) If livestock are a factor in conjunction with drought to degrading rangelands and a Livestock Agreement is not in place or not followed, or after “a reasonable attempt” (43 CFR 4.110.3-3(b)) has been made to consult with that permittee or lessee, 2) all feasible livestock DRAs have been exhausted and immediate protection of resources on the allotment/use area is required, or 3) the allotment(s) or portions of allotment(s) overlap with an HMA(s) in which it has been determined that wild horse removal is warranted due to drought then a Full Force and Effect Decision may be issued that would include closure of an allotment or a use area.

The following is a list of DRAs that BLM would use either separately or in combination to reduce the impacts of authorized livestock grazing on natural resources during drought.

#### **Temporary Targeted Grazing of Invasive Annual Dominated Communities**

BLM could use Targeted grazing of communities dominated by invasive annuals (e.g., cheatgrass) to alleviate grazing pressure on other areas dominated by native species. On these sites, BLM

could also apply prescribed livestock grazing to achieve maximum damage to annual grasses with little concern for non-target plants (Peischel and Henry 2006). BLM and the affected permittees would focus grazing during the spring and/or fall and winter months to take advantage of early spring and fall growth of the annuals. The permittees would remove the livestock upon reaching a two-inch average stubble height in order to provide some protection from wind and water erosion. The permittee and BLM would confine animals to these areas using temporary electric fence or herding. BLM would identify invasive annual dominated communities through site-specific monitoring.

### **Temporary Water Hauls**

Temporary water hauls could be used in circumstances where: 1) adequate forage exists to support wild horses and the existing permitted number of livestock, but water resources are insufficient due to drought or 2) to improve livestock distribution in areas located long distances from existing water sources, which have received limited use by livestock in previous years or 3) to reduce or eliminate impacts to riparian and wetland areas. Additionally, the BLM could authorize the use of temporary water hauls to augment existing water sources. Whenever possible, water haul sites would be located in areas dominated by invasive annual species in order to provide for targeted grazing of those species while providing rest of native perennial vegetation. Water haul sites would be located no closer than ½ mile to important winterfat sites. Water haul sites would consist of livestock water troughs of various size and material, placed on public lands and filled as needed with portable water tenders or water trucks. BLM would select previously disturbed sites when available. Cultural specialists would survey all areas for cultural resources prior to implementation and BLM would install escape ramps in water troughs to protect wildlife species. BLM would require the removal of all temporary water storage containers once the drought is over or sooner as indicated by written notice signed by the authorized officer. Any water hauling done by the grazing permittee associated with the affected grazing permit must be in accordance with Nevada State Water Law regarding the use or location of water outside the place of use as indicated on a water right permit.

BLM or cooperating entities may need to augment water at wildlife water developments during periods of drought. There are over 300 wildlife water developments in the Ely District. Large volume water developments, which provide water for large ungulates, such as desert bighorn sheep, mule deer, elk, and pronghorn antelope, are the most likely type of developments to require water during drought. Refill methods of these developments could vary from helicopter use to driving a water truck directly to the development.

### **Temporary Above-Ground Pipelines**

Temporary above ground pipelines could be implemented in circumstances where: 1) adequate forage exists to support wild horses and the existing permitted number of livestock, but water resources are insufficient due to drought or 2) to improve livestock distribution in areas located long distances from existing water sources, which have received limited use by livestock in previous years or 3) to reduce or eliminate impacts to riparian and wetland areas. Whenever possible, temporary pipelines would be located in areas dominated by invasive annual species in order to provide for targeted grazing of those species while providing rest of native perennial vegetation. Temporary pipelines would consist of an above ground pipeline, which would transport water from the end point of an existing pipeline to livestock water troughs of various size and material, placed on public lands and fitted with a float valve to prevent overflow and saturated soil conditions around the trough(s). Saturated soils are at a greater risk for compaction or erosion.

Any temporary above ground pipelines would require approval from the Nevada Division of Water Resources. BLM would select previously disturbed sites when available. Cultural resource specialists would conduct surveys of all areas for cultural resources prior to implementation and BLM would comply with the National Historic Preservation Act with regards to new disturbance areas. Either the permittee or BLM would install escape ramps in water troughs to protect wildlife species. BLM would require the removal of all temporary above ground pipelines once the drought is over or sooner as indicated by written notice signed by the authorized officer.

### **Temporary Fencing of Critical Areas**

During drought, The BLM could allow the permittee to use temporary electric fencing to exclude livestock from critical areas such as riparian areas, meadows, aspen stands, critical wildlife habitat etc. BLM may also allow the use of temporary electric fences to confine livestock to areas dominated by invasive annual species. Temporary electric fences would be constructed using 3/8 inch diameter fiberglass fence posts and two strands of electric fence polywire. Posts would be spaced 16 feet apart. The height of the fence would be 30 inches (Hot wire) with the bottom wire being 20 inches (ground wire) above the ground. The permittee would attach signs warning of electric fence to the fence at common crossing points and at ¼ mile intervals along the fence. BLM would require the removal of all temporary fencing once the drought is over or sooner as indicated by written notice signed by the authorized officer. . Per Washington Office Instruction Memorandum 2012-043, Greater Sage-Grouse Interim Management Policies and Procedures, fencing would not be used within 1.25 miles of greater sage-grouse leks that have been active within the past 5 years and in movement corridors between leks and roost locations.

### **Temporary Change in Season of Use**

A change in the season of use could reduce livestock grazing related impacts during drought. BLM could use the following modifications either separately or in combination:

- Changing the season of use to a time following the critical growth period (actual dates would vary with vegetation community type) of key forage species (ESDs correlated to specific locations would be consulted to determine key species. In instances where key species referenced in the ESD are absent, BLM would identify key species using site-specific and/or past monitoring data).
- Defer livestock grazing in riparian areas during the hot season (approximately July 1 through September 30). Grazing in riparian areas would take place following the hot season to avoid the degradation of riparian areas during drought.

### **Temporary Reduced Grazing Duration**

Reduce or shorten the authorized period of use for the allotment, use are or pasture as identified in the terms and conditions of the term permit.

### **Temporary Change in Livestock Management Practices**

The concentrated use of preferred areas in the landscape results in uneven distribution of animal impact, and periods of below average precipitation compound the effects of herbivory, providing periods of accelerated deterioration (Teague et al. 2004). Modification of grazing practices could

improve livestock distribution. BLM could use the following methods/tools either separately or in combination to improve livestock distribution:

- Strategic placement of salt and/or mineral supplements away from water in areas that were un-grazed or lightly grazed in previous years.
- Increased herding of livestock to previously un-grazed or lightly grazed areas.
- Concentrating livestock into a single herd in order to increase control and encourage uniform grazing. Herd sizes would be dependent on water availability; therefore, adequate available water sources must be present to provide water to wildlife, wild horses, and livestock while maintaining riparian functionality. Use would not exceed utilization and stubble heights identified in the Drought Response Triggers section of this document.

### **Temporary change in kind or class of livestock**

Authorize a temporary change in the kind or class of livestock as identified in the terms and conditions of the term permit. BLM would not authorize changes from cattle to sheep in areas inhabited by bighorn sheep or within nine miles of known bighorn sheep habitat.

### **Temporary Partial Reduction in Animal Unit Months (AUMs)**

During drought, a reduction in livestock numbers could be necessary to ensure that adequate forage is available to meet wildlife, wild horses, and livestock requirements. Reduced livestock grazing could prevent overutilization of key forage species and reduce or prevent further adverse impacts to rangeland resources already affected by drought.

### **Temporary Partial Closure of an Allotment(s)**

During drought, BLM would assess the forage resources and overall condition of affected allotments. Portions of an allotment(s) that lack forage and/or water, are in poor condition, or that BLM identifies as critical areas to provide forage and/or water for wildlife and/or wild horses could be closed to livestock grazing for the duration of the drought in accordance with 43 CFR 4110.3-3. BLM would institute partial closures by employing a combination of the other DRAs such as temporary fencing, temporary water hauls, active livestock herding, strategic supplementation etc. Partial closures would be in effect for the duration of the drought plus one growing season following the cessation of the drought to allow for recovery. In accordance with NV H- 1730-1 Resource Management During drought p.11 (b), consider the following opening criteria; Receipt of average or above average precipitation, Monitoring data that shows that vegetation production has returned to pre-drought levels and comparison of drought and post drought conditions, documented with the *Growing Condition Indicator Checklist*. BLM would consult the U.S. Drought Monitor and Vegetation Drought Response Index to determine the cessation of the drought. The authorized officer would use signed written notification to reopen areas to grazing.

### **Temporary Complete Closure of an Allotment(s)**

If it is determined that drought conditions (i.e., lack of forage and/or water, poor condition, and/or critical areas that provide forage and/or water for wildlife and/or wild horses) exist over the entire allotment and all other livestock DRA options have been exhausted or deemed impractical, complete closure could occur (43 CFR §4710.5). Closure would be in effect for the duration of the drought plus one growing season following the cessation of the drought to allow

for recovery. BLM would consult the U.S. Drought Monitor and Vegetation Drought Response Index to determine the cessation of the drought. The authorized officer would use signed written notification to reopen areas to grazing.

### **Temporary Use of Unused or Vacant Allotments**

Authorize nonrenewable use of unused allotments or pastures or vacant allotments or pastures where water and forage is available if needed to alleviate grazing pressure on allotments or pastures where forage production or water is lacking due to drought.

The proposed action includes a number of actions that would require additional site-specific NEPA analysis for actions within Wilderness in order to comply with current regulations and guidelines. These actions include: Temporary water hauls, Temporary above ground pipelines, Temporary fencing of critical areas.

## **2. Wild Horses**

The following is a list of DRAs that BLM would use either separately or in combination to ensure the welfare of wild horses on public lands administered by the BLM. Wild horses could be at risk of dehydration or starvation due to drought conditions. BLM must exercise special considerations for the management of wild horses during drought. These DRAs would help reduce the impacts of wild horses on natural resources adversely affected by drought while ensuring their welfare. BLM would select DRAs on a case-by-case basis using site-specific monitoring data. BLM would use the following process for DRA selection:

*Step 1: Conduct field visits to “drought-afflicted” areas to assess drought response triggers.* Field visits would assess water and forage availability at predetermined sites. Additionally, the specialist would assess body condition of the wild horses viewed during the field visit.

*Step 2: BLM would select DRAs based on the evaluation of site-specific monitoring data, best available HMA/HA specific population data, and known animal behavior and distribution patterns.* BLM would choose DRAs on case-by-case basis suited to site-specific conditions. The authorized officer could select more than one DRA depending on conditions. BLM would make efforts to select and implement DRAs in an incremental fashion to respond to changes in drought conditions (e.g., temporary water haul followed by water trapping, if needed).

*Step 3: Implement DRA(s) in selected order.* If a drought gather is included as a DRA, BLM would conduct a drought gather through a full force and effect decision. BLM would provide site-specific data related to the drought gather in the Decision and Drought Gather Plan documents.

### **Temporary Water Hauls**

In circumstances where it is determined that adequate forage exists to maintain the existing population of wild horses, but water resources are deficient due to drought conditions, the BLM could employ temporary water hauls to augment existing water sources. Water haul sites would consist of livestock water troughs of various size and material, placed on public lands and filled as needed with portable water tenders or water trucks. Water haul locations would be determined based on animal population density and distribution, and placed in previously disturbed areas such as gravel pits or roadsides. BLM could place troughs at the existing water sources that are either dry or inadequate to maintain healthy animals. The use of water hauls would continue until the existing waters are able to support the population or a drought gather occurs. BLM would

survey all areas for cultural resources prior to implementation and BLM would install bird ramps in water troughs to protect avian species.

### **Wild horse removal**

BLM would employ a drought gather as a last resort and one would only occur if the following conditions apply:

1. It is determined that drought conditions have resulted in insufficient amounts of forage and/or water to support the existing population of wild horses within a HMA/HA.
2. BLM has exhausted all other feasible DRAs and BLM needs to conduct a drought gather for immediate protection of wild horses and rangeland resources.

Pursuant to 43 CFR §4710.5, areas of allotment(s) that overlap with the HMA(s) would be temporarily closed to livestock grazing to protect the health of remaining wild horses and/or their habitat. The livestock grazing closure would be in effect for the duration of the drought and at a minimum, one growing season following the cessation of the drought. If BLM implements a livestock grazing closure, BLM would remove wild horses from the range at varying levels (see “removal numbers” below) in order to prevent suffering and death due to drought conditions on the range and prevent further degradation of resources affected by drought. BLM would complete gathers by removing varying numbers and using the following methods, either separate or in combination (refer to attachment 2 for a more detailed discussion):

#### **a. Bait or water trapping**

When feasible and appropriate, bait and/or water trapping would be the primary gather technique used to capture wild horses from the range in response to drought. BLM would select bait or water trapping unless the following circumstances apply:

- the number of water sources results in horses being too dispersed;
- The location of water sources are too remote and restrict access for trap set up and animal removal;
- The urgency of animal removal requires immediate action and utilization of alternate removal methods; or
- The number of animals BLM needs to remove is in excess of bait or water trapping capabilities. Water or bait trapping capabilities would vary depending on site-specific conditions.

Bait and water trapping involves the construction of small pens, and baiting animals into the pens with the use of weed free hay, water or other supplements. Bait and water trapping methods are usually only effective in areas where water or forage is absent, resulting in high motivation for animals to enter the trap to access them. These situations may occur during drought emergencies or severe winters. Typically, small groups of animals enter the traps at a time. This requires many days too many weeks to remove a substantial number of animals from an area. BLM could employ this option where small numbers of animals need to be removed, where it is deemed that the geography and resources of the HMA/HA would ensure success, or in combination with helicopter gathers.

#### **b. Helicopter capture**

BLM would employ the use of the helicopter-drive trapping method when bait or water trapping is not effective, feasible, or appropriate. BLM, or its designees, could use roping from horseback when necessary. BLM may use multiple gather sites (traps) to gather wild horses from within and/or outside the HMA/HA boundaries.

### **c. Removal numbers**

BLM would base removal numbers on the assessment of forage, climate, water, rangeland health, and the use of the range by wild horses due to drought. BLM would identify removal numbers to ensure that adequate numbers of healthy animals remain on the range and have adequate resources for survival, and that the remaining animals minimize rangeland degradation to allow for post drought recovery. The long term health and welfare of the wild horses and the sustainment of rangeland health would be the overarching goals of a drought gather. BLM would determine the removal numbers on an HMA/HA by HMA/HA basis. BLM would include a summary of the data, and rationale for the removal numbers in the Decision and attached gather plan issued prior to a gather commencing.

#### **1. Removal of sufficient numbers of animals to achieve the low range of AML**

Where BLM indicates, through the assessment of forage and water, that conditions merit community relief, and BLM determines that removal of excess wild horses is the best means to accomplish relief, BLM could conduct a gather to achieve the established low range of AML. This would occur where the current population exceeds the low AML, and adequate resources do not exist to maintain healthy wild horses at the current population level. BLM could employ this option in combination with temporary water hauls.

#### **2. Removal of animals to a point below the low AML**

During a prolonged drought, forage and water resources could become severely limited to a point that BLM must remove wild horses below the low range of AML in order to prevent widespread suffering and death. BLM would determine the post gather population target based on the existence and reliability of remaining resources. BLM would implement this option to prevent subsequent emergency conditions due to ongoing or worsening drought conditions. BLM could implement this option in combination with temporary water hauls.

#### **3. Complete removal of all animals in an HMA/HA**

In extreme situations, the complete lack of forage and/or water in certain locations could warrant the removal of all locatable wild horses to prevent their death. This situation would only apply as a last resort, and could involve holding wild horses in contract facilities with release back to the range when adequate resources exist. Subsequent release of horses would be subject to Nevada and Washington BLM office approval and could occur several months after the gather. If BLM chooses complete removal and subsequent release, BLM could implement population control methods prior to wild horse releases back to the HMA.

BLM could use population controls applied to wild horses released back to the range to slow population growth rates, lengthen the time before another gather is necessary, and enhance post drought resource recovery. Population controls include the application of fertility control vaccine to mares, and sex ratio modification to favor studs. BLM would apply Fertility control to all mares released to the range. BLM could apply sex ratio adjustment alone or in combination with

fertility control. Sex ratio adjustment would involve the release of studs and mares in a 60 to 40 ratio respectively.

It is possible that a situation may warrant the removal of only mares and foals due to the fact that 1) they are typically the most affected by the limited resources and 2) it is determined that sufficient resources exist to support a larger number of studs. In this case, mares and foals would be gathered and removed from the drought affected area and BLM would release studs back to the range. This scenario could result in sex ratios in the remaining population exceeding 60% studs.

#### **d. Type of removals**

Under normal gather operations, BLM captures all located wild horses. BLM identifies the desired number of horses for release and removal through a “selective removal” process. For drought related gathers BLM would implement gate cut removals. BLM would use gate cut removals to limit any additional stress on the wild horses within a defined gather area. In this situation, wild horses would be gathered and removed regardless of age to reach the post gather target. BLM would not return animals to the range nor implement population controls. The post gather target number of animals would remain undisturbed on the range. BLM would design gathers to remove animals from the areas most affected by drought and resource deficits.

The proposed action includes a number of actions that would require site-specific NEPA analysis for actions within Wilderness:

- Wild Horses: Temporary water hauls and wild horse removals, if BLM proposes to locate the trap site in wilderness.

## **2.2. Description of Alternatives Analyzed in Detail:**

### **No Action Alternative**

Under the No Action Alternative, management responses to drought would require the preparation of individual, situation specific EAs for areas or circumstances across the EYDO.

### **Grazing Closure alternative**

Under the Grazing Closure Alternative, all areas determined to be affected by drought would be closed to livestock grazing for the duration of the drought and at a minimum, one additional growing season following the cessation of the drought. Grazing closures would remove livestock grazing from the public lands to eliminate the impacts of grazing during drought and provide one growing season of rest for plant recovery following the cessation of the drought.

## **2.3. Alternatives Considered but not Analyzed in Detail**

### **Supplemental Feeding of Livestock**

The BLM considered a Supplemental Feeding Alternative if drought conditions create insufficient forage to meet wild horse and livestock needs; however, this Alternative was eliminated from

detailed analysis because it would be inconsistent with 43 CFR 4700.0-6 (a) which states that, “Wild horse and burros shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.” The WFRHBA requires the BLM to manage horses in a manner that is designed to achieve and maintain a thriving natural ecological balance (TNEB) on public lands (16 USC §1333(a)).

Placing supplemental feed on public lands requires authorization. 43 CFR 4140.1 Acts Prohibited on public lands (a), (3), states; Placing supplemental feed on these lands without authorization. Supplemental feeding is not to be confused with the placing of mineral blocks or other dietary supplements. Supplemental feeding would be the placement of additional forage for permitted livestock consumption in addition to the natural forage on site.

Additionally, providing supplemental feed to livestock could lead to a myriad of safety and health-related impacts to the animals. For example, providing nutrient rich feed to cattle following low-quality feed could lead to bloat. Furthermore, supplying supplemental feed would be cost prohibitive and unsustainable due to the inability to predict when the cessation of a drought would occur.

Another optional type of feeding is maintenance Feeding With respect to public land management, BLM deems “maintenance feeding” to be the provision of feed on public lands such as hay, silage, or grain to meet or augment the dry matter forage dietary requirement of livestock. As stated in the Draft handbook H-4130 Authorizing Grazing Use Chapter 4 p. 28 Maintenance Feeding, “Maintenance feeding on public lands is never appropriate. On occasions where there is insufficient forage to meet dry matter requirements of permitted livestock on public lands and emergency feeding has not been authorized), the Field Manager must take appropriate action to close allotments or modify grazing authorizations under 4110.3-1(b) and may need to take action under 4110.3-2 to reduce or temporarily suspend permitted use”.

### **Supplemental Feeding of Wild Horses**

BLM Handbook H-4700-1 Wild horses and Burros Management Handbook, states that, “To achieve TNEB on the public lands, WH&B should be managed in a manner that assures significant progress is made toward achieving the Land Health Standards for upland vegetation and riparian plant communities, watershed function, and habitat quality for animal populations, as well as other site-specific or landscape-level objectives, including those necessary to protect and manage Threatened, Endangered, and Sensitive Species (TES). WH&B herd health is promoted by achieving and maintaining TNEB.”

Supplemental feeding of wild horses on rangelands during times of drought would adversely affect areas on or near the location that feed is being supplied. Supplemental feed could contain weed seed, which could lead to the introduction of invasive and/or noxious weeds. Providing supplemental feed would concentrate animals, thereby, increasing utilization and trampling of native species; cause soil compaction in affected area(s); increase soil erosion and adversely affect water sources due increased sedimentation due to soil erosion.

Additionally, providing supplemental feed to wild horses could lead to a myriad of safety and health-related impacts to the animals. For example, providing hay in areas without adequate water

could lead to colic in horses. Furthermore, supplying supplemental feed would be cost prohibitive and unsustainable due to the inability to predict when the cessation of a drought would occur.

### **Manage Wild Horses at AML**

Based on public comment there was a requested that BLM consider an alternative to gather wild horses to achieve AML as an alternative, as opposed to the proposed action which includes gather wild horses to AML as a drought response action to be used after grazing closures to livestock take place. This alternative was dismissed as not meeting the purpose and need of this EA. The purpose of the action is to provide rapid response to drought conditions on the Ely District by adjusting management of wild horses, livestock, and other authorized uses. Management at AML requires time and extensive management based on several factors including holding facility limitations, and strategic management goals. The purpose of this EA is to provide a rapid response based on drought conditions and impacts.

This page intentionally  
left blank

## **Chapter 3. Affected Environment:**

This page intentionally  
left blank

### 3.1. General Setting

The general setting of the project area is the administrative boundary of the EYDO. The EYDO is located in central Nevada. The EFO and SFO administer the northern portion of the Ely District which is characteristic of a cooler, semi-arid Great Basin Desert ecotype. The southern portion administered by the CFO and has characteristics of the Great Basin, Great Basin/Mojave transition, and Mojave Desert ecotypes. The Mojave Desert is a hotter, more arid ecotype restricted to a smaller area comprising about half of the CFO.

The EYDO is generally characterized as, “Basin and Range” topography with broad bedrock pediments and fault block mountain ranges predominantly running in a north-south orientation separating vast, flat playa sinks or alluvial valley bottoms. Valley and playa elevations range from 4,000-5,000 ft. with an average annual precipitation of 2-9 inches. Mountain range elevations extend from 7,500-13,000 ft. with 10-20 inches of annual precipitation.

### 3.2. Resources Considered

To comply with the NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988, BLM 1997, BLM 2008). The following table outlines the elements that BLM must address in all environmental analyses, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action or No Action Alternative affects those elements.

Supplemental Authorities	Not Present	Present/Not Affected <sup>2</sup>	Present/May be Affected	Rationale
Air Quality			X	See discussion in Section 3.3 A.
Area of Critical Environmental Concern (ACEC)		X		There are 16 ACECs located on the Ely District of the BLM. The selection of any one of the alternatives would not change the management of these ACECs nor have additional impacts on the characteristics of the ACECs. The BLM manages these ACECs in accordance with the management prescriptions outlined in the RMP.
Bald and Golden Eagles			X	See discussion in Section 3.3 B.
Cultural/Historical			X	See discussion in Section 3.3 C.

Supplemental Authorities		Not Present	Present/Not Affected <sup>2</sup>	Present/May be Affected	Rationale
Environmental Justice		X			The Proposed Action or Alternatives would not disproportionately impact any low income or minority populations as described in the Environmental Justice Executive Order (EO 12898).
Farmlands Prime or Unique		X	X		No Unique Farmlands are found in Nevada. There are approximately 562,933 acres of potential Prime Farmlands in the EYDO all of which need the application of water and/or the removal of excess salts to become farmlands. The alternatives would not alter the chemical or physical characteristics that would change the classification as potential Prime Farmlands.
Floodplains			X		The Proposed Action or Alternatives do not meet the definition of “Actions Affecting or Affected by Floodplains or Wetlands” as described in 44 CFR Ch. 1§ 9.4.
Forests and Rangelands (Healthy Forest Restoration Act [HFRA] only)		X			This element applies only to HFRA projects; no forest fuels reduction projects are analyzed within this EA.
Human Health and Safety (Herbicide Projects)		X			No herbicides would be utilized, stored, or encountered by implementing the Proposed Action or Alternatives contained in this EA.
Migratory Birds				X	See discussion in Section 3.3 B.
Native American Religious Concerns				X	See discussion in Section 3.3 D.
Noxious Weeds/Invasive Non-native Species				X	See discussion in Section 3.3 E.
Riparian/Wetlands				X	See discussion in Section 3.3 F.
Threatened and Endangered Species	Animals			X	See discussion in Section 3.3 B.
	Plants			X	See discussion in Section 3.3 M.

Supplemental Authorities		Not Present	Present/Not Affected <sup>2</sup>	Present/May be Affected	Rationale
Waste –Hazardous/Solid		X			No wastes, hazardous or solid, would be utilized, stored, or encountered by implementing the Proposed Action or Alternatives contained in this EA.
Water Quality				X	See discussion in Section 3.3 G.
Wild & Scenic Rivers		X			No Federally designated wild and scenic rivers exist within the EYDO.
Wilderness				X	See discussion in Section 3.3 O.
Grazing Management				X	See discussion in Section E8.
Land Use Authorization				X	See discussion in Section E9.
Minerals			X		Mineral resources exist on the EYDO; however, no major soil disturbing activities would occur under the Proposed Action or Alternatives. Therefore, mineral resources would not be impacted.
Paleontological Resources			X		Paleontological resources exist on the EYDO; however, no major soil disturbing activities would occur under the Proposed Action or Alternatives. Therefore, paleontological resources would not be impacted.
Recreation				X	See discussion in Section E10.
Socio-Economic Values				X	See discussion in Section E11.
Soils				X	See discussion in Section E12.
Special Status Species	Animals			X	See discussion in Section E2.
	Plants			X	See discussion in Section E13.
Vegetation				X	See discussion in Section E13.
Visual Resources			X		BLM would not construct large structures and no major disturbances would occur under the Proposed Action or Alternatives. Therefore, visual resources would not be impacted.

Supplemental Authorities	Not Present	Present/Not Affected <sup>2</sup>	Present/May be Affected	Rationale
Wild Horses			X	See discussion in Section E14.
Wildlife			X	See discussion in Section E15.

See H-1790-1 (January 2008) Supplemental Authorities to be Considered.

Supplemental Authorities or Other Resources determined to be Not Present or Present/Not Affected need not be carried forward for analysis or discussed further in the document.

Supplemental Authorities determined to be present/May be Affected *must* be carried forward for analysis in the document.

The following critical elements of the human environment are not present or would not be affected by the Proposed Action or Alternatives in this EA:

- ACECs
- Environmental Justice
- Flood Plains
- Prime or Unique Farmlands
- Wastes, Hazardous or Solids
- Wild & Scenic Rivers

### 3.3. Resources Present and Brought Forward for Analysis

#### A. Air Quality

##### Affected Environment

Both Federal and Nevada law regulate air quality and the emission of air pollutants. The Federal Clean Air Act (CAA) requires the US Environmental Protection Agency (EPA) to identify national ambient air quality standards (NAAQS's). The CAA also requires EPA to place selected areas within the United States into one of three classes, designed to limit the deterioration of air quality. The air quality classes in or adjacent to the EYDO are Prevention of Significant Deterioration (PSD) Class I and Class II. Class I areas are special areas of natural wonder and scenic beauty, such as Great Basin National Park and BLM wilderness areas, where air quality should be given special protection. Class II area are all other portions of the EYDO. The State of Nevada, Bureau of Air Quality-Department of Environmental Protection air quality standards under NRS 445B.100 closely mirror the Federal standards.

#### 1. Environmental Consequences of the Proposed Action

Under the Proposed Action, BLM would implement DRAs to maintain vegetation within the EYDO to minimize the potential for accelerated erosion events. DRAs such as temporary water hauls could result in the short-term increase of wind born particulate matter and vehicle emissions during the hauling of water. However, water hauls along with the other DRAs are designed to

protect vegetation and stabilize soils and would decrease wind born particulate matter in the long-term. Any airborne particulate matter caused by the implementation of DRAs would not exceed air quality standards.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would remove all grazing from public lands determined to be affected by drought (refer to Attachment 1). Removing grazing during drought would benefit the growth of plants and ensure an adequate amount of surface ground cover remains. Wind velocity, and its potential to detach and transport dry soil, exponentially increases near the ground as vegetation's sheltering effect is reduced (Marshall 1973). Protection of living and standing dead plant cover provided by the Grazing Closure Alternative would have a beneficial impact on air quality.

## **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and potentially result in a continuation of management practices that are employed during times of normal precipitation. Current management practices may be poorly suited to drought. Drought reduces the health and production of vegetation. Without the prompt implementation of management strategies, the effects of drought can be compounded by improper livestock, wild horse, which may lead to a further reduction in plant cover. Inadequate plant cover can lead to substantial wind or water erosion of valuable top soil (Reece et al. 1991). Wind erosion increases the amount of airborne particulate matter, which could reduce air quality causing public safety issues such as poor visibility or respiratory problems. Delayed implementation of DRAs could also increase the potential for invasion of undesirable plant species, which are less likely to stabilize soils. The No Action Alternative would adversely affect air quality.

## **B. Wildlife (Including Threatened and Endangered Species, Special Status Species, and Migratory Birds)**

### **Affected Environment**

Drought can have complex direct and indirect adverse impacts on wildlife species. In direct response to periods of water restriction, animals often undergo physiological and behavioral changes that can have energetic, survival and reproductive costs (McNab 2002). For example, animals may devote more time to searching for water, which can be energetically expensive and expose animals to greater predation risk. Indirectly, drought-induced reductions in plant and insect productivity can potentially limit the availability of important food and cover resources. Not surprisingly, many animals are food-limited during periods of drought and experience substantial weight loss leading to starvation, greater susceptibility to disease and predators, and reductions in reproductive potential (Rotenberry and Wiends 1989). In many cases, the combined impacts of drought are most pronounced among young animals (Longshore et al. 2002; McNab 2002).

Many wildlife species in the Ely District are well-adapted to living in arid or semi-arid conditions. However, a number of these animals are susceptible to the negative impacts of drought, particularly during spring and early summer. These include animals that utilize 1) free water rather than metabolic water for the majority of their water requirements (e.g., most mammals and birds), 2) adequate supplies of surface water for all or portions of their life history (fish, amphibians, gastropods, many insects and other species), 3) riparian areas (e.g., several bird

species), 4) dense understory vegetation as cover from predators, or 5) insect species, grass or forbs for large portions of their diet.

Within the Ely District, wildlife includes a diverse array of species typical of the Great Basin and Mojave Desert ecosystems. Of these, the U.S. Fish and Wildlife Service (USFWS) list five species as threatened or endangered species with a potential to be affected by the proposed action (Table 3).

Table 3: Threatened and Endangered Species in the Ely District

Common Name	Scientific Name	T	E	Location
Big Spring spinedace	<i>Lepidomeda mollispinis pratensis</i>	X		Condor Canyon
White River springfish	<i>Crenichthys baileyi baileyi</i>		X	Ash Springs
Pahrump poolfish	<i>Empetrichthys latos</i>		X	Shoshone Ponds
Agassiz's desert tortoise	<i>Gopherus agassizii</i>	X		Mojave desert ecosystem
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>		X	Meadow Valley Wash and Pahranaagat Valley

In addition to federally listed species, the BLM protects, by policy (BLM Manual 6840), special status species designated as “sensitive” by the BLM Nevada State Director. Table 4 lists the special status species occurring, or likely to occur on the Ely District.

Table 4: Non-listed BLM Sensitive Species in the Ely District

	Common Name	Scientific Name
Mammals	Pallid bat	<i>Antrozous pallidus</i>
	Pygmy rabbit	<i>Brachylagus idahoensis</i>
	Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
	Big brown bat	<i>Eptesicus fuscus</i>
	Spotted bat	<i>Euderma maculatum</i>
	Silver-haired bat	<i>Lasionycteris noctivagans</i>
	Western red bat	<i>Lasiurus blossevillii</i>
	Hoary bat	<i>Lasiurus cinereus</i>
	California myotis	<i>Myotis californicus</i>
	Western small-footed myotis	<i>Myotis ciliolabrum</i>
	Long-eared myotis	<i>Myotis evotis</i>
	Little brown myotis	<i>Myotis lucifugus</i>
	Fringed myotis	<i>Myotis thysanodes</i>
	Long-legged myotis	<i>Myotis volans</i>
	Yuma myotis	<i>Myotis yumanensis</i>
	Desert bighorn sheep	<i>Ovis canadensi nelsoni</i>
	Western pipestrelle	<i>Pipistrellus heperus</i>
	Brazilian free-tailed bat	<i>Tadarida braziliensis</i>
	Dark kangaroo mouse	<i>Microdipodops megacephalus</i>
	Pale kangaroo mouse	<i>Microdipodops pallidus</i>
Pahranaagat Valley montane vole	<i>Microtus montanus foccusus</i>	
pika	<i>Ochotona princeps</i>	

	Common Name	Scientific Name
Birds	Northern goshawk	Accipiter gentilis
	Golden eagle	Aquila chrysaetos
	Western burrowing owl	Athene cunicularia
	Ferruginous hawk	Buteo regalis
	Swainson's hawk	Buteo swainsoni
	Greater sage-grouse	Centrocercus urophasianus
	Western yellow-billed cuckoo	Coccyzus americanus
	Peregrine falcon	Falco peregrinus
	Pinyon jay	Gymnorhinus cyanocephalus
	Bald eagle	Haliaeetus leucocephalus
	Loggerhead shrike	Lanius ludovicianus
	Black rosy-finch	Leucosticte atrata
	Lewis woodpecker	Melanerpes lewis
	Sage thrasher	Oreoscoptes montanus
	Brewer's sparrow	Spizella breweri
	Bendire's thrasher	Toxostoma bendirei
LeConte's thrasher	Toxostoma lecontei	
Reptiles	Banded Gila monster	Heloderma suspectum cinctum
	Sonoran mountain kingsnake	Lampropeltis pyromelana
	Chuckwalla	Sauromalus obesus
Amphibians	Relict leopard frog	Rana onca
	Northern leopard frog	Rana pipiens
Fish	Meadow Valley wash desert sucker	<i>Catostomus clarkii</i> ssp.
	Independence valley tui chub	<i>Gila bicolor</i> ssp.7
	Railroad Valley tui chub	<i>Gila bicolor</i> ssp.
	Newark Valley tui chub	<i>Gila bicolor</i> newarkensis
	Bonneville cutthroat trout	<i>Oncorhynchus clarkia</i> utah
	Relict dace	<i>Relictus solitarius</i>
	White river speckled dace	<i>Rhinichthys osculus</i> ssp 7
	Meadow Valley speckled dace	<i>Rhinichthys osculus</i> ssp 11
Pahrnagat speckled dace	<i>Rhinichthys osculus</i> velifer	
Gastropods		
	Duckwater pyrg	<i>Pyrgulopsis aloba</i>
	Southern Duckwater pyrg	<i>Pyrgulopsis anatina</i>
	Transverse gland pyrg	<i>Pyrgulopsis cruciglans</i>
	Landyes pyrg	<i>Pyrgulopsis landyei</i>
	Pahrnagat pebblesnail	<i>Pyrgulopsis merriami</i>
	Sub-globose Steptoe Ranch pyrg	<i>Pyrgulopsis orbiculata</i>
	Bifid Duct pyrg	<i>Pyrgulopsis peculiaris</i>
	Flat-topped Steptoe pyrg	<i>Pyrgulopsis planulata</i>
	Northern Steptoe pyrg	<i>Pyrgulopsis serrata</i>
	Southern Steptoe pyrg	<i>Pyrgulopsis sulcata</i>
	Southern Soldier Meadow pyrg	<i>Pyrgulopsis umbilicata</i>
	Duckwater Warm Springs pyrg	<i>Pyrgulopsis villacampae</i>
Grated tryonia	<i>Tryonia clathrata</i>	
Insects	Big smoky wood nymph	<i>Cercyonis oetus</i> alkalorum
	Baking Powder Flat blue	<i>Euphilotes bernardino</i> minuta
	Railroad valley skipper	<i>Hesperia uncas</i> fulvapalla
	White River Valley skipper	<i>Hesperia uncas</i> grandiose
	Pahrnagat naucorid bug	<i>Pelocoris shoshone</i> shoshone
	Steptoe Valley crescentspot	<i>Phyciodes pascoensis</i> areancolor

## Mammals

Mule deer (*Odocoileus hemionus*) typically occupy high elevation summer ranges where they are nutritionally dependent on shrubs/forbs characteristic of healthy and diverse mountain brush communities. Important plants for mule deer include mountain mahogany, serviceberry, snowberry, willow, sagebrush, aspen, wild rose, eriogonum, arrowleaf balsamroot, penstemon and sorrel. Streamside and meadow riparian habitats with aspen stands are important fawn-rearing areas.

Pronghorn antelope (*Antilocapra americana*) occupy the mid- to lower-elevations of the Ely District. Pronghorn are dependent on sagebrush/salt desert shrub communities with an understory of forbs. The distribution of water is a limiting factor for pronghorn.

Rocky Mountain elk (*Cervus canadensis*) inhabit several Nevada mountain ranges in a wide variety of habitats within the Ely District. Elk forage on grasses, forbs, and shrub species. Since the late 1990s, elk populations in Lincoln and White Pine counties have been managed under the guidance of the Lincoln and White Pine Elk Management Sub-plans to the Statewide Elk Species Management Plan.

Small mammals and furbearers in the Ely District include but are not limited to: cottontail rabbits, black-tailed jackrabbits, woodrats, mice, bobcat, beaver, coyote, red fox, gray fox, and kit fox.

## **Birds**

Major avian communities within the Ely District occur in creosote-white bursage, Joshua tree woodlands, sagebrush, phreatophyte, pinyon-juniper, montane, riparian, and aspen habitats. Within each of these habitats, bird populations are likely to be negatively impacted by low annual levels of precipitation (Rich 2002; Ballard et al. 2003).

Many migratory birds are heavily dependent on riparian systems. Seventy-seven bird species have been identified as either riparian obligate or riparian dependent in the western US (Rich, 2002). Willow, aspen and cottonwoods provide vital riparian under-story, mid-story and canopy cover to support a diverse bird community. Species using this habitat include northern goshawk (*Accipiter gentilis*), broad-tailed hummingbird (*Selasphorus platycercus*), northern flicker (*Colaptes auratus*), house wren (*Troglodytes aedon*), warbling vireo (*Vireo gilvus*), yellow-rumped warbler (*Dendroica coronata*), western wood pewee (*Contopus sordidulus*), lazuli bunting (*Passerina amoena*) and western tanager (*Piranga ludoviciana*).

Migratory birds occur in all habitats of the Ely District throughout year with nesting predominantly occurring from March-July. Widely distributed species in shrub habitats include sage thrasher (*Oreoscoptes montanus*), sage sparrow (*Amphispiza belli*) and Brewer's sparrow (*Spizella breweri*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*). Loggerhead shrike (*Lanius ludovicianus*), common nighthawk (*Chordeiles minor*), various wrens, warblers, and swallows are also common.

Reptiles, amphibians, and fish

A variety of non-listed game fish, reptiles, and amphibians inhabit the Ely District.

## **1. Environmental Consequences of the Proposed Action**

The Proposed Action defines drought response triggers for each major vegetation community known to occur within the Ely District. The response triggers would activate DRAs to reduce impacts of grazing to wildlife during drought by providing for proper use of vegetation. Although

the specific benefits of the Proposed Action vary depending on the wildlife species, the drought triggers for implementing management action would ensure that habitat conditions provide resources for viable wildlife populations to persist over the long-term. Vegetation and water resources important to wildlife can be severely degraded by the interactive effects of drought and overgrazing.

### **Temporary Change in Season of Use**

This would allow plants to utilize available soil moisture and any additional moisture received during the critical growth period. Plants would be able to complete their life cycle thus allowing for seed dissemination and root growth and replacement. BLM could then allow grazing on plants after sufficient growth or dormancy occurs. Repeated grazing during the critical growth period does not allow plants to regrow before drought depletes soil moisture; therefore, plants may not have adequate resource reserves to survive winter dormancy.

### **Temporary Reduced Grazing Duration**

Moving livestock across an allotment or pasture more quickly would increase the amount of rest individual plants are given. Reducing grazing duration would increase a plant's ability to utilize available resources to regrow foliage, store carbohydrates reserves, and maintain vigor. Plants are unable to regrow if grazed repeatedly especially during times of limited soil moisture. BLM would vary periods of deferment according to the rate of growth. Range plants initiate growth from meristems (i.e., growing points), once meristems are removed, plants must grow from basal buds which requires much more of the plants energy than regrowth from meristems. Plants that are continually forced to regrow from buds may reduce or even eliminate the production of new buds, which may reduce production in subsequent years (Howery 1999). According to Hanselka and White (1986), plants should be rested longer during stress periods such as drought, as growth slows during these periods. Reducing the duration of grazing would provide plants more time to recover after grazing pressure.

### **Temporary change in kind or class of livestock**

According to Volesky et al. (1980), yearling cattle utilize pastures more uniformly over variable terrain than cows with calves or mixed classes. Cows and calves utilize forages nearest the water much more heavily than do yearlings. Therefore, selecting yearlings could improve grazing distribution and limit impacts to riparian areas.

Choosing a different kind of livestock could also affect the impacts of range utilization. With their large mouths, cattle and horses may not select annual grasses as readily as sheep or goats because livestock prefer plants they can eat quickly and efficiently. Sheep or goats can get a full bite of annual grasses more easily than cattle or horses, especially when annual grass plants are small (Peischel and Henry 2006). Additionally, sheep and goats can be herded more effectively which allows for greater control and provides an opportunity to limit impacts to critical areas such as riparian areas, meadows, aspen stands, critical wildlife habitat, etc. BLM would not authorize temporary changes from cattle to sheep in areas of known bighorn sheep habitat or areas within nine miles of known bighorn sheep habitat.

### **Temporary Water Hauls and Pipelines**

Any temporary water hauls in listed species habitat would be subject to Section 7 consultation under the Endangered Species Act with the level of consultation to be determined based upon

the project site specific proposed action. BLM would complete consultation prior to signing a decision for any specific action which may have an effect on a listed species.

Augmenting water sources could directly benefit some wildlife species that cannot subsist entirely on metabolic water. Augmented water sources are most likely to benefit mobile species that can move relatively long-distances to access water sources (e.g., upland game birds, some songbirds, deer, pronghorn antelope, and bighorn sheep). Conversely, augmented water sources would largely be unavailable to many populations of sedentary animals that cannot access the water (e.g., many reptiles and small mammals). Water augmentation would not directly benefit animals that subsist solely on metabolic water or do not drink from open water sources.

Indirectly, water augmentation could benefit a wide range of species by attracting livestock, wild horses thereby reducing impacts on natural water sources and riparian vegetation. During drought, livestock often concentrate in and around riparian areas which can lead to degraded water quality and reduced vegetation cover. Thus, water augmentation would reduce competition between wildlife and livestock for these important riparian resources. Moreover, concentrations of livestock near augmented water sources would reduce impacts on rangeland vegetation outside of the footprint of the augmented water source. As a result, wildlife (including sage-grouse) that depend on understory vegetation during portions of their life-cycle would benefit from reduced grazing impacts range-wide.

Conversely, a potential negative impact of water augmentation concerns the concentration of livestock and wild horses near the water source. Increased attendance at water sites by these animals could indirectly affect some wildlife by trampling and consuming vegetation. Wildlife are known to avoid areas near water developments that are heavily used by livestock (Leeuw et al. 2001), and these areas are thought to increase predation risk, interspecific competition, and provide avenues of disease transmission.

### **Temporary fencing riparian areas, wet meadows, and aspen stands**

Any temporary fencing in listed species habitat would be subject to Section 7 consultation under the Endangered Species Act with the level of consultation to be determined based upon the project site specific proposed action. BLM would complete consultation prior to signing a decision for any specific action which may have an effect on a listed species.

Ecologically functioning riparian areas, springs, aspen stands and seasonally wet meadows are crucially important for Nevada's wildlife and fish. However, livestock tend to congregate and linger near water sources, oftentimes having an adverse effect on vegetation and wildlife communities (Saab et al. 1995). During drought, these adverse effects can be amplified. Thus, using temporary fences or electric fences to restrict access by ungulates to these areas during a drought is an effective management tool to prevent severe degradation and potentially improve habitat. Several studies have shown that fencing riparian zones may in fact be a rapid method of habitat improvement important for wildlife and fish (Schulz and Leininger 1991; Giuliano and Homyack 2004). These areas include riparian habitat for southwestern willow flycatcher and yellow-billed cuckoo, and higher elevation wet meadows utilized by greater sage grouse during mid- to late-summer (see Beck and Mitchell 2000).

Negative impacts to wildlife include avian fence-impact mortality, particularly sage grouse. However, this impact can be largely avoided by adopting specific measures to reduce sage grouse fatal collisions (Stevens 2011).

Fences can also limit access to water sources by large wildlife (e.g., mule deer, bighorn sheep, and elk).

Livestock, wild horses: changes in grazing practices, removal, and rangeland utilization

Any temporary fencing in listed species habitat would be subject to Section 7 consultation under the Endangered Species Act with the level of consultation to be determined based upon the project site specific proposed action. BLM would complete consultation prior to signing a decision for any specific action which may have an effect on a listed species.

Some of the livestock, wild horse management strategies (outlined in the Proposed Action) are designed to reduce stocking rates as a mechanism of minimizing long- and short-term adverse impacts to rangeland resources during a drought. Research has shown that reducing stocking rates during a drought is an important management tool for preventing overgrazing and maintaining critical wildlife habitats. Moreover, to protect important sage-grouse habitat, the BLM is instructed to evaluate the season of use and stocking rate as an important management strategy (IM-2012-043). Conversely, vegetation and water resources important to sage-grouse and other wildlife can be severely degraded by the interactive effects of overgrazing and drought.

Although the specific benefits of the Proposed Action vary depending on the wildlife species, the drought triggers for implementing management action would ensure that habitat conditions provide resources for viable wildlife populations to persist over the long-term. By reducing stocking rates, wildlife would benefit from reduced competition for plant and water resources particularly during critical life stages. In sagebrush habitats, reducing stocking rates may especially benefit ground-nesting animals during the spring and early summer. Many of these animals require a dense understory of grasses and forbs for food and nesting cover. For example, sage grouse forage predominately on a suite of cool-season forb species that can be vulnerable to the combined effects of water stress and cattle grazing (Knick and Connelly 2010). The Proposed Action would also benefit the suite of wildlife and fish that utilize streams, riparian areas, wet meadows and aspen stands. During dry conditions, livestock often congregate near water sources, which can reduce vegetation cover by grazing and trampling and generally degrade water resources. Indeed, removing livestock from streams and riparian zones during critical periods is a key method of improving habitat for fish and wildlife (Mosely et al. 1997; Giuliano and Homyack 2004; Nelson 2010).

Wildlife and wildlife habitat would benefit indirectly by wild horse gathers. Reduction of wild horse populations during a drought would protect critical rangeland habitats from overuse and reduce drought-induced stress on wildlife. Implementing a gather would reduce the competition for forage and water resources. Habitat conditions in riparian areas, aspen stands, and uplands would be maintained, benefitting many wildlife species including sage grouse.

Wild horse gathers in drought affected areas would have some, short-term negative impacts on wildlife. Wildlife present on or near trap sites or holding facilities could be temporarily displaced or disturbed during the gather activities. However, trap sites would typically be located in previously disturbed areas (i.e., gravel pits), and for short periods of time (1-3 days). Should a qualified biologist determine it to be necessary, BLM would inventory trap sites prior to selection to determine the presence of sensitive species. If BLM could not mitigate potential impacts, these areas would be avoided.

Gather activities would not conflict with nesting periods for most bird species. In accordance with national guidance, BLM plans gathers outside of most nesting periods in order to protect newborn foals. Overall, improvement and/or maintenance of wildlife habitat would be expected to occur as a result of a decrease in use because of lower numbers of wild horses.

## **2. Environmental Consequences of the Grazing Closure Alternative**

Impacts of the Grazing Closure Alternative are essentially the same as those under the Proposed Action. However, the removal of livestock under the Grazing Closure Alternative would have greater long-term benefits to wildlife because livestock are removed from the range for an additional growing season.

## **3. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, wildlife species would not benefit by the management activities outlined in the Proposed Action. Instead, wildlife would be fully subjected to the potentially adverse impacts of livestock, wild horse use during drought. These include exacerbated competition for forage and water between non-native and native wildlife and impacts on riparian areas and other water sources. Impacts on riparian areas and water sources can be severe because livestock tend to congregate in these areas, trampling and overgraze vegetation. Competition between wildlife and wild horse would also be substantial when water and forage are limited. Moreover, wild horse are known to drive away some wildlife species from natural water sources. The long-term recovery of wildlife habitat could also be reduced under this alternative. Rehabilitation of rangelands that are overstocked during drought can be a slow and expensive process. Thus, the long-term viability of special status species and other wildlife could be substantially compromised.

## **C. Cultural/Historical**

### **Affected Environment**

Humans have occupied central Nevada for at least 11,000 years. The first inhabitants occupied the area when many of the Pleistocene pluvial lakes contained water; therefore, cultural sites of this period are frequently found on the lower pluvial lake bench terraces. As the lakes dried up, subsistence became increasingly focused on resources not related to those found around lake or marsh environments. By the end of the prehistoric period, most central Great Basin groups centered much of their subsistence on Pinon pine. Prehistoric cultural sites can be found throughout the Ely District and vary from simple, open lithic scatters of limited research potential to complex rock shelters or extensive habitation sites often containing thousands of pieces of lithic debitage, ground stone, hearth features and rock alignments.

Prior to the arrival of Euro-Americans, the Western Shoshone and Goshute (or *Gosiute*) inhabited northeastern Nevada. Western Shoshone territory has been described as covering a large area extending roughly from southern Idaho to Death Valley; west to the Reese River watershed of central Nevada; east to include the majority of White Pine County, Nevada, and beyond to the Great Salt Lake basin and into southeastern Idaho (Bengston 2003:Figure 2.1; Thomas et al.1986). The Goshute people are often subsumed under the rubric of Western Shoshone in ethnographic summaries (Bengston 2003; Thomas 1986), but have a distinct identity locally. Their traditional territory is thought to extend from “the Great Salt Lake to the Steptoe Range [sic] in Nevada, from the Salt Lake Valley to Granite Rock in the desert to the west, and from Simpson Springs on the south to the Great Salt Lake Desert (Bengston 2003:12). This overview focuses on aspects

of nineteenth century hunter-gather life and post-contact history of the region, and includes practices identified with both groups. Western Shoshone lived in family bands, dispersing to hunt and gather seasonal plant resources. In winter, larger groups would gather in seasonal villages, usually located in sheltered areas near water, with a southern or western exposure, often shifting annually to areas where Pinon nuts had been harvested and cached.

This traditional lifestyle was quickly disrupted by the influx of Euro-Americans starting in the 1840s. Peter Skene Ogden, a Canadian explorer, passed through the area in 1829; in 1833, Joseph Walker retraced Ogden's path and determined that following the Humboldt River westward was the most direct route to California.

Westward immigration along the Humboldt route was initiated in 1841 by the Bidwell-Bartelson party (Bowers, Martha H. and Hans Muessig, 1982). The discovery of gold in California in 1848 brought many emigrants to the area, following what become known as the California Trail; during the migration, domestic livestock decimated traditional food plants along the Humboldt corridor. In 1862, the discovery of silver ore in from Austin eastward to include Hamilton and Eureka, stimulated north-south settlement and brought an influx of Euro-American miners and settlers with livestock to the area, resulting in increased impacts to the native vegetation and the livelihood of the Western Shoshone. Additionally, Pinon pine trees were harvested for use as firewood or in construction and, most devastatingly, to manufacture charcoal to feed Eureka smelters.

The first government expedition into the region was led by John C. Fremont in 1848. This military reconnaissance team traversed the EYDO through the Diamond, Kobeh and Big Smoky Valleys. In 1859, James Simpson explored a route that later became the Pony Express Trail and then the Overland Stage Route (Bowers, Martha H. and Hans Muessig 1982). These routes crossed the Diamond, Kobeh, Big Smoky, Reese River and Smith Creek Valleys.

No more than 5% of the EYDO has been subject to cultural resource inventory, most of which has been project specific. As a result, portions of some basins have been intensively surveyed for cultural resources while others have received little or no inventory. Historic sites include, but are not limited to, the remains of homesteads and horse traps, mining camps, town sites, Chinese borax mines, charcoal kilns and platforms, mining/milling sites, trash dumps, trails, roads, and railroad grades. Prehistoric sites include long-term habitation sites, temporary camps, task specific sites, pinyon caches, scatters of heat-altered rock, rock shelters, petroglyphs and pictographs, rock alignments including "geoglyphs", and quarry sites. There are recorded properties of traditional cultural and religious importance within the EYDO.

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to consider the effects of a proposed action on properties included in, or eligible for, the National Register of Historic Places before approving or funding an action. The NHPA also requires Federal agencies to complete a cultural resources inventory prior to Federal actions or ground disturbing activities that occur on Federal lands and, in some cases, including private lands if those lands are subject to disturbance through a Federal undertaking.

Given the extensive area covered by this analysis, it is impossible to provide detailed, site-specific discussions of the all the archaeological resources within the Ely District. BLM can summarize some relevant information, for example, of the known archaeological sites within the Ely District, many remain unevaluated for their eligibility for the National Register. For the purposes of Section 106 compliance, unevaluated sites must be treated as if eligible in terms of mitigation.

The Ely District Cultural Resource Management Program is responsible for the study, evaluation, protection, management, stabilization and inventory of cultural resources. SOPs and agency guidance would reduce the likelihood of impacts to cultural resources. Before proceeding with vegetation treatments, the effects of BLM actions on cultural resources would be addressed through compliance with the NHPA, as implemented through a National Programmatic Agreement and the BLM-Nevada SHPO protocol agreement. The BLM 8100 manual series addresses the process for identifying and evaluating cultural resources and includes relevant Native American consultation.

### **1. Environmental Consequences of the Proposed Action**

The effects of BLM DRAs on cultural resources would be addressed through compliance with the NHPA, as implemented by following the Nevada State Protocol Agreement between the BLM, Nevada and the Nevada State Historic Preservation Office (SHPO).

### **2. Environmental Consequences of the Grazing Closure Alternative**

Drought response measures to alleviate the impacts of grazing through reduction in authorized access would also act to reduce the severity of potential impacts to cultural resources generated by livestock.

### **3. Environmental Consequences of the No Action Alternative**

The No Action alternative could result in increased damage to cultural resources through accelerated erosion caused by trampling, and by the effect of trampling itself on newly exposed resources. Further, exposure would also increase the potential for illegal collection.

## **D. Native American Religious Concerns**

### **Affected Environment**

Located within the traditional territory of the Western Shoshone, the Ely District administrative boundary contains spiritual/traditional/cultural resources, sites and social practices that aid in maintaining and strengthening social, cultural and spiritual integrity. Recognized tribes with known interests within the Ely District are the Duck Valley Shoshone-Paiute Tribes of Nevada, Duckwater Shoshone Tribe, Ely Shoshone Tribe, Yomba Shoshone, Te-Moak Tribe of Western Shoshone (Elko, South Fork, Wells, and Battle Mountain Bands), and various other community members and individuals.

Though archaeological data and theory states that the Western Shoshone (Newe) began to inhabit the Great Basin area around 600 years ago, contemporary Western Shoshone contend they were here since “time immemorial.” Social activities that define the culture took place across the Great Basin. Pinyon Pine nut gathering, edible and medical plant gathering, hunting and fishing, spiritual/ceremonial practices and trade occurred as the natives practiced a hunting and gathering lifestyle. As with the delicate and sensitive nature of the resources of the Great Basin, the native cultures appeared to be heavily impacted by social, cultural and environmental change, which rapidly accompanied the non-native migration from east to west. The Western Shoshone and other Great Basin tribes continue to practice certain cultural/spiritual/traditional activities, visit their sacred sites and hunt and gather the available game, medicinal and edible plants. Through oral history (the practice of handing down knowledge from the elders to the younger generations) many Western Shoshone continue to maintain a worldview not unlike that of their ancestors.

Such sites and activities of importance include, but are not limited to: existing antelope traps; certain mountain tops used for prayer; medicinal and edible plant gathering locations; prehistoric and historic village and grave sites; land forms associated with creation stories; hot and cold springs; material used for basketry and cradle board making; locations of stone tools such as points and grinding stones (mano and metate); chert and obsidian quarries; hunting sites; sweat lodge locations; locations of pine nut ceremonies, traditional gathering and camping; boulders used for offerings and “medicine” gathering; tribally identified Traditional Cultural Properties (TCP’s); TCP’s found eligible to the National Register of Historic Places; rock shelters; “rock art” locations; lands that are near, within or bordering current reservation boundaries; areas associated with tribal land acquisition efforts; water sources in general, which are considered the “life blood of the Earth.” Specific and detailed sites, locations, participant names, and uses are excluded and are considered highly confidential. Most of the lands administered by the EYDO have not been subject to Native American Consultation or cultural resource inventory.

## **1. Environmental Consequences of the Proposed Action**

Although site-specific plans for the implementation of the DRAs identified in the Proposed Action are not analyzed under this document, the potential does exist to impact Native American sites and activities of a spiritual/cultural/traditional nature. Specific impacts are dependent on DRAs selected and dates of implementation. Therefore, affected tribes must be given the opportunity to give input and participate in the decision making process.

In accordance with the NHPA (P.L. 89-665), the NEPA(P.L. 95-341), the FLPMA (P.L. 94-579), the American Indian Religious Freedom Act (P.L. 95-341) the Native American Graves Protection and Repatriation Act (P.L. 101-601) and Executive Order 13007, the BLM must also provide affected tribes an opportunity to comment and consult on proposed projects. BLM must attempt to limit, reduce, or possibly eliminate any negative impacts to Native American traditional/cultural/spiritual sites, activities and resources. Consultation with Native American tribes would occur through the decision process prior to the implementation of any actions.

It is believed that Native American resources and sites of cultural, traditional and spiritual use maintain their physical and spiritual integrity due to their undisturbed and pristine locations. Not to say that certain areas lose their importance and sacredness due to being physically impacted. Some areas within the EYDO have experienced past and present ground disturbance, but still maintain spiritual integrity. The fact that an important site has been disturbed in the past does not lessen its sacredness. However, ongoing disturbance can have an impact to the existing cultural/traditional/spiritual activities that currently take place in certain areas.

The Proposed Action is designed to alleviate the impacts of livestock and wild horses during drought. The implementation of the DRAs described in the Proposed Action would reduce the probability of soil erosion, which would have a beneficial impact on the protection of Native American resources. Any of the DRAs that have the potential to be ground disturbing (e.g., temporary water hauls, electric fences and above ground pipelines) would be surveyed for cultural resources prior to implementation. The specific placement of temporary projects is flexible and would avoid any known cultural resources. Any temporary electric fences constructed would be designed in a manner that would allow access at all current access points (e.g., trails, roads, etc.). BLM should not bar or prevent traditional practitioners from gaining access to existing and known medical/edible plant locations and other culturally important sites.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The implementation of the Grazing Closure Alternative would protect vegetation and reduce the probability of soil erosion, which would have a beneficial impact on the protection of Native American resources.

### **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and result in a continuation of current management practices, which are often poorly suited to drought. Drought reduces the health and production of vegetation. Without the prompt implementation of management strategies by BLM, drought effects can be compounded by improper livestock and wild horse use. This may lead to a further reduction in plant cover and increased soil erosion. An increase in soil erosion would provide the potential for the degradation of important cultural resources. Edible and medicinal plants may be reduced or eliminated from traditional cultural sites if overgrazing occurs during drought. Riparian areas may experience heavy use by livestock and/or wild horses as upland vegetation dries out and becomes less palatable and water resources become scarce. The delayed implementation of DRAs under the No Action Alternative would have adverse impacts on Native American resources.

#### **E. Noxious Weeds/Invasive Non-native Species**

##### **Affected Environment**

In Nevada, noxious weeds are designated by statute and defined as, “detrimental or destructive and difficult to control or eradicate”. BLM further defines noxious weeds as, “generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the US” (USDI FES 2007). An invasive species is defined as, “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health” (Executive Order 13112). In plain language, a weed is any unwanted plant.

Noxious weeds and invasive, non-native species are spread directly or indirectly by people, equipment, animals or transported by wind and water. Weed infestations rise proportionally with increased human activities like mining extraction/exploration, road maintenance, livestock grazing, recreational activities, off-highway vehicles (OHVs) and general soil disturbing activities. The BLM’s strategy for noxious weed management is to, “sustain the condition of healthy lands, and, where land conditions are degraded, to restore desirable vegetation to more healthy conditions” (USDI FES 2007). Weeds threaten public lands by spreading into and infesting sensitive riparian ecosystems, important rangelands, wildfire scars and developed lands such as rights of way and recreational areas. Threats can come in the form of reduced biodiversity, a weakened ecosystem, a higher propensity for soil erosion, increased frequency of wildfires and limited food resources for wildlife. Weeds on private lands have the potential to spread onto public lands and vice versa.

At this time, the EYDO’s priority weed suppression efforts are concentrated on Russian/spotted knapweed, tamarisk (salt cedar), perennial pepperweed (tall white top), hoary cress (white top), various thistle species, and invasive annual grasses. The State of Nevada, Department of Agriculture (NDOA) keeps an up-to-date list of designated noxious weeds at [http://agri.nv.gov/nwac/PLANT\\_NoxWeedList.htm](http://agri.nv.gov/nwac/PLANT_NoxWeedList.htm). The most up-to-date Federal list is maintained by the US Department of Agriculture (USDA) and can be found at their website, <http://plants.usda.gov/java/noxious?rptType=Federal>.

Of the 10.5 million acres within the EYDO boundaries and administered allotments, BLM has conducted weed surveys on about 2 million acres. Of the 2 million acres surveyed to date, it is estimated that 246,000 acres are infested by noxious weeds. Of the 10.5 million acres on the EYDO, BLM has only been able to treat “pockets” of land, about 15,000 acres. Additionally, herbicide treatments have been site-specific with few repetitive treatments in the same location.

## **1. Environmental Consequences of the Proposed Action**

Noxious weeds and non-native invasive species are more likely to invade areas that are in poor rangeland condition. Areas that maintain a healthy and diverse population of native species are more resistant to invasion. Drought or water stress affects virtually every physiological and biochemical process in plants (Hanselka and White 1986). Plants that are stressed are more vulnerable to grazing. The degree to which drought impairs the range depends on the intensity, frequency and timing of grazing (Howery 1999). The utilization of perennial bunchgrasses increases significantly during drought years (Bedell and Ganskopp 1980). Therefore, precautions must be taken to ensure proper management occurs in order to avoid overutilization and further degradation of range conditions during drought. The Proposed Action is designed to reduce the impacts of authorized uses and activities on natural resources. This would maintain existing plant communities and limit the degradation of range resources, which would reduce the potential for invasion by noxious weeds and invasive annual species.

The Proposed Action provides for targeted grazing of monotypic annual communities (e.g., monotypic cheatgrass stands). Targeted grazing of monotypic invasive annual communities would be used to reduce grazing pressure on areas dominated by native species. On these sites, prescribed livestock grazing can be applied to achieve maximum damage to annual grasses with little concern for non-target plants (Peischel and Henry 2006). Grazing would be focused during the spring and/or fall months to take advantage of early spring and fall growth of the annuals. Livestock would be removed upon reaching a two-inch average stubble height in order to provide protection from wind and water erosion. This, in turn, would result in the reduction of invasive annual species and limit adverse impacts to native perennial species.

A wild horse drought gather could result in the spread of existing populations of noxious weeds, invasive or non-native species. Precautions would be taken prior to setting up trap sites and holding facilities to avoid areas where noxious weeds, invasive or non-native species exist to lessen the chance of spread. The Contracting Officers Representative (COR), Project Inspector (PI), or other qualified specialist would examine proposed holding facilities and traps sites prior to construction to determine if noxious weeds were present. If noxious weeds were found, a different location would be selected.

Temporary trap sites and holding facilities would be selected in previously disturbed areas such as gravel pits. Areas disturbed specifically by gather operations would be monitored, re-vegetated (if appropriate), and treated for potential new infestations of non-native invasive plants as a result of gather operations.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would provide rest for all drought afflicted areas. Resting these areas would provide the vegetation an opportunity to take full advantage of available soil moisture and nutrients. Uninterrupted growth would increase plant cover and reduce the potential for soil erosion. This would limit the opportunity for noxious weeds and invasive annuals to invade those communities.

The Grazing Closure Alternative would not provide for the targeted grazing of invasive annual species, which would limit the opportunity to reduce the vigor of invasive species that may compete with native vegetation for soil moisture and nutrients.

### **3. Environmental Consequences of the No Action Alternative**

Grazing management practices before, during, and following a drought influence the ability of native rangeland vegetation to recover (Encinias and Smallidge 2009). Lagged responses toward drought pose a threat to sustainable management of rangelands (Thurow and Taylor 1999). Although all rangelands are adversely affected by drought regardless of condition, rangeland in fair or poor condition is more adversely affected and recovers slower than rangeland in good or excellent condition (Howery 1999). The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and potentially result in a continuation of current management practices. Delaying the implementation of livestock and/or wild horse management strategies that are appropriate for drought conditions would increase the potential of noxious weed and invasive species establishment and spread by extending the period of time the range is in a poor or stressed condition.

### **F. Riparian-Wetland Zones**

#### **Affected Environment**

Riparian and wetland areas adjacent to surface waters are the most productive and important ecosystems in the western United States. Riparian and wetland areas represent less than 1% of the EYDO. However, these areas play an integral role in restoring and maintaining the chemical, physical and biological integrity of water resources. Research has shown riparian and wetland habitats have a greater diversity of plant and animal species than adjoining areas. Healthy riparian and wetland areas have the potential for multi-canopy vegetation layers with trees, shrubs, grasses, forbs, sedges, and rushes and are valuable habitat for a wide variety of wildlife species. Healthy systems also filter and purify water, reduce sediment loads, enhance soil stability, provide micro-climatic moderation and contribute to ground water recharge and base flow. They stabilize water supplies, ameliorating both floods and droughts. Functioning riparian/wetland areas provide many values; recreation, aquatic species (animal and plant), wildlife habitat, increased water supply, cultural, historic and economic. Economic values yield forage for livestock production, timber harvest, and mineral extraction.

Functioning riparian areas dissipate energy created from water and sediment during runoff events. Riparian-wetland plants have adapted to the stressors associated with flooding and saturation of soils. Their above ground biomass presents a surface discontinuity that functions to slow the velocity of flowing water, deposit alluvial sediment which aids in floodplain development, stabilize stream banks, enhance infiltration, and recharge groundwater supplies.

Grazing can have a negative impact on riparian and wetland zones. When not managed properly, livestock can remain in riparian areas damaging stream banks, over-grazing riparian vegetation, compacting soils, and contaminating streams with waste. Riparian areas that have experienced heavy grazing pressure are at risk of becoming non-functioning and degraded, especially during times of drought. Livestock can also introduce non-native plant species. Non-native species may out-compete native species, altering natural ecosystem function.

Non-functioning riparian areas are less capable of slowing water velocity, catching sediment, stabilizing stream banks, allowing for infiltration, and recharging groundwater supplies. Reduced

vegetative densities could lead to increased surface runoff. Non-functioning riparian areas lose the capability to store water in the soil and yield less water for late summer base flows increasing the potential for erosion.

## **1. Environmental Consequences of the Proposed Action**

The direct impact of the Proposed Action is the maintenance of riparian-wetland vegetation during drought. Marlow (1985) studied the distribution pattern of livestock in Montana during August and September and observed 80% of the forage came from the riparian and wetland resources, which comprised less than 4% of the pasture. Similar distribution patterns have been observed elsewhere in the western US. It is expected that livestock and wild horses would utilize riparian and wetland resources to a greater degree as drought conditions worsen due to reduced production and palatability of upland vegetation during drought. The concentrated use of preferred areas in the landscape results in uneven distribution of animal impact, and periods of below average precipitation compound the effects of herbivory, providing periods of accelerated deterioration (Teague et al. 2004). DRAs identified in the Proposed Action would improve the distribution of livestock and wild horses and protect riparian areas from overgrazing and trampling during drought. Implementing the drought response triggers described in the Proposed Action would require that 4-inches of residual stubble remain following grazing. Accumulating 4-inches of residual above ground vegetation would aid in filtering and stabilizing sediment, protecting stream banks and shorelines from trampling, providing shade and retaining water longer, dissipating flood energy and ensuring sufficient biomass to improve plant health and vigor (Clary and Leininger 2000).

The DRAs described in the Proposed Action would limit the impacts of livestock and wild horses on riparian areas during drought. These actions would be implemented in combination or separately once drought response triggers are met.

Changes in season of use would be used to avoid hot season grazing of riparian areas. Livestock tend to congregate within riparian areas during years of normal precipitation. If drought occurs this behavior would be exacerbated due to a reduction in the quantity and quality of upland vegetation. Measures that exclude and/or intensely manage livestock grazing of these areas while drought conditions persist are needed to provide for the maintenance of riparian vegetation and protection of riparian systems.

Temporary range improvement projects such as water hauls, above ground pipelines, or electric fences would be used to reduce the impacts of livestock and wild horse use on riparian areas. Temporary water hauls and/or above ground pipelines would be designed to provide watering opportunities away from riparian areas. Providing “off-source water” can be effective in altering distribution patterns of cattle grazing in riparian areas and adjacent uplands (Porath et al. 2002). Temporary electric fences would be used to protect and/or manage riparian areas separately. Sensitive areas can be separated from other areas and managed differently (Bailey 2004). The ability to manage riparian areas independently would ensure drought response triggers developed for riparian areas are not exceeded. Upon reaching the triggers, livestock could be excluded from the areas, which would reduce negative impacts of grazing to riparian areas during drought.

Partial or complete rest of an allotment and/or HMA would reduce the adverse impacts of grazing on riparian areas during drought. Resting these areas would allow riparian vegetation to make the best use of limited resources during drought. Improved root and shoot growth of vegetation aids in bank stability, water retention, reduces sedimentation and leads to a better functioning riparian

system. Wild horse gather activities would not have direct impacts to riparian wetland zones or water quality as trap sites and holding corrals would not be constructed near riparian areas.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would require all drought afflicted areas to be closed to grazing. The closure would remove livestock grazing from the public lands to eliminate the impacts of grazing during the drought and provide one additional growing season of rest for plant recovery following the cessation of the drought. Rest of these areas would allow riparian vegetation to make the best use of limited resources during drought. Improved root and shoot growth of vegetation aids in bank stability, water retention and reduces sedimentation and leads to a better functioning riparian system.

## **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and potentially result in a continuation of current management practices, which are often poorly suited to periods of drought. As stated earlier, drought reduces the health and production of vegetation. Without the prompt implementation of management strategies, improper livestock and wild horse use can compound the effects of drought. Grazing can have a negative impact on streams. When not managed properly, livestock can remain in riparian areas damaging stream banks, over grazing riparian vegetation, compacting soils and contaminating streams with waste. Livestock can also introduce non-native plant species. BLM expects that the No Action Alternative would lead to adverse impacts to riparian resources.

## **G. Water Quality**

### **Affected Environment**

The State of Nevada has designated 14 designated Hydrographic Regions. The EYDO overlies five Hydrographic Regions: Central, Colorado River, Escalante Desert, Great Salt Lake, and Humboldt River. The Hydrographic Regions contain all or portions 43 Groundwater Basins designated by the Nevada Department of Water Resources. The BLM district boundaries do not correspond to NDWR regional or groundwater basin boundaries. Hydrographic regions are characterized by internal surface drainage and ground water flows.

Average annual precipitation in Ely, Nevada is about 9.54 inches. Average annual snowfall is about 52 inches. Perennial and intermittent streams found in the EYDO see peak flows occurring during mid-spring in response to melting snow.

Runoff from mountain ranges is the major source for perennial and intermittent streams, reservoirs, and aquifers in the valleys. Groundwater resources provide water for domestic, mining, irrigation, wildlife, and livestock uses among others. Surface water resources such as streams, ponds, reservoirs, springs, and seeps provide water for the same beneficial uses as groundwater sources.

Available water quality data indicate that two surface water sources exceed the Environmental Protection Agency and State of Nevada water quality standards. Comins Reservoir near Ely, Nevada has elevated Mercury levels and pH concerns. Naturally occurring water and geologic conditions influence both constituents. Meadow Valley Wash from Caliente to Rox, Nevada has temperature concerns and elevated levels of Boron and Total Phosphorus. Water temperature is related to climate and streambank vegetation found in the area of Meadow Valley Wash. Boron is

found naturally in the soils and geology in the area and Phosphorus concentration is likely related both naturally occurring levels in surrounding geology and allocthonous input from communities near and along the wash.

Many of the constituents are inherent in the water as a result of natural processes in the aquifer or surface strata. Current surface water quality problems, in part, are the result of stream bank erosion and sedimentation through the reduction of vegetative cover in watersheds and streams.

The Clean Water Act requires that federal actions comply with state water quality standards and do not impair surface or ground waters. Standards are established in relation to the beneficial use provided, such as human consumption, irrigation, fisheries, livestock, or recreation. Soil interactions, transported solids, rocks, vegetation, groundwater, and the atmosphere drive the natural quality and composition of water.

### **1. Environmental Consequences of the Proposed Action**

BLM expects that livestock and wild horses would utilize riparian and wetland resources to a greater degree as drought conditions worsen due to reduced production and palatability of upland vegetation during drought. As livestock and/or wild horse use of riparian areas increases, the probability of disease-causing organisms contaminating water sources increases (Belsky 1999). Increased animal waste associated with riparian grazing also introduces nutrients to aquatic systems. This could increase the food base for the aquatic system and if excessive, could lead to large algae blooms and subsequent decomposition. This could lead to low dissolved oxygen concentrations and endanger aquatic organisms (Belsky 1999).

The concentrated use of preferred areas in the landscape results in uneven distribution of animal impact, drought compounds the effects of herbivory, providing periods of accelerated deterioration (Teague et al. 2004). This could lead to an increase in sedimentation and a reduction in overall water quality as a result of streambank alteration and exposure of bare soil.

The DRAs described in the Proposed Action are designed to limit the time livestock and/or wild horses spend in riparian areas. Depending on the action(s) selected, livestock may be excluded from riparian areas during times of drought. The reduction of time or complete exclusion of livestock and/or wild horses from riparian areas would reduce fecal deposition and ensure grazing use does not exceed drought response triggers (i.e., maintain a 4-inch stubble height). Clary and Leininger (2000) found that accumulating 4-inches of residual above ground vegetation would aid in filtering and stabilizing sediment, protecting stream banks and shorelines from trampling, providing shade and retaining water longer, dissipating flood energy and ensuring sufficient biomass to improve plant health and vigor. Adhering to drought response triggers and implementing the DRAs would maintain water quality levels.

### **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would close all drought-afflicted areas to grazing. The closure would remove livestock grazing from the public lands to eliminate the impacts of grazing during the drought and provide one growing season of rest for plant recovery following the cessation of the drought. Rest of these areas would allow riparian vegetation the ability to make the best use of limited resources during drought. Improved root and shoot growth of vegetation aids in bank stability, water retention, reduces sedimentation, and leads to a more resilient riparian

system. No livestock-related animal waste would be deposited in or near water, which would eliminate the introduction of bacterial contamination. The Grazing Closure Alternative would have a positive effect on water quality.

### **3. Environmental Consequences of the No Action Alternative**

Relative increased use of riparian areas by livestock and/or wild horses during times of drought would result in an increase in the introduction of animal wastes, a decrease in vegetative cover, potentially an increase in streambank and soil erosion. A reduction in water quality would occur and may be long lasting depending on streambank and soil recovery times.

## **H. Grazing Management**

### **Affected Environment**

There are currently approximately 142 livestock permittees (73 within the Schell and Egan Field Offices and 69 permittees with the Caliente Field Station area) that hold term permits authorizing livestock grazing within the Ely District. BLM administers livestock grazing on 132 allotments by the Schell and Egan Field Offices combined and 102 allotments by the Caliente Field Station. There are approximately 129 cattle operators and 10 sheep operators in the Ely District. The public land administration area for the Ely District is 11,463,419 acres. BLM authorizes all livestock grazing under Section 3 permits of the “Taylor Grazing Act”.

In addition to livestock grazing, BLM has authorized multiple range improvements (e.g., fences, wells, pipelines) on the public lands administered by the EYDO. These range improvements have been constructed to aid in the control of livestock and improve grazing management.

### **1. Environmental Consequences of the Proposed Action**

The Proposed Action would result in an increase in grazing management practices on allotments occurring within drought-afflicted areas of the EYDO. Depending on the DRAs selected, BLM and the permittees would modify grazing management practices. This would lead to increased inputs from permittees. The specific consequences of these inputs have been analyzed within the Socio-Economic Values section of this document. Implementation of drought gathers to remove wild horses from drought affected areas would improve recovery from drought, resulting in healthier, more productive plant communities and riparian areas in future years, which would benefit future opportunities for livestock grazing.

### **Temporary Change in Season of Use**

This would allow plants to utilize available soil moisture and any additional moisture received during the critical growth period. Plants would be able to complete their life cycle thus allowing for seed dissemination and root growth and replacement. BLM could then allow grazing on plants after sufficient growth or dormancy occurs. Repeated grazing during the critical growth period does not allow plants to regrow before soil moisture is depleted; therefore, plants may not have adequate resource reserves to survive winter dormancy.

### **Temporary Reduced Grazing Duration**

Moving livestock across an allotment or pasture more quickly would increase the amount of rest individual plants are given. Reducing grazing duration would increase a plant’s ability to utilize available resources to regrow foliage, store carbohydrates reserves, and maintain vigor. Plants

are unable to regrow if grazed repeatedly especially during times of limited soil moisture. BLM would vary periods of deferment according to the rate of growth. Range plants initiate growth from meristems (i.e., growing points), once meristems are removed, plants must grow from basal buds which requires much more of the plants energy than regrowth from meristems. Plants that are continually forced to regrow from buds may reduce or even eliminate the production of new buds, which may reduce production in subsequent years (Howery 1999). According to Hanselka and White (1986), plants should be rested longer during stress periods such as drought, as growth slows during these periods. Reducing the duration of grazing would provide plants more time to recover after grazing pressure.

### **Temporary change in kind or class of livestock**

According to Volesky et al. (1980), yearling cattle utilize pastures more uniformly over variable terrain than cows with calves or mixed classes. Cows and calves utilize forages nearest the water much more heavily than do yearlings. Therefore, selecting yearlings could improve grazing distribution and limit impacts to riparian areas.

Choosing a different kind of livestock could also affect the impacts of range utilization. With their large mouths, cattle and horses may not select annual grasses as readily as sheep or goats because livestock prefer plants they can eat quickly and efficiently. Sheep or goats can get a full bite of annual grasses more easily than cattle or horses, especially when annual grass plants are small (Peischel and Henry 2006). Additionally, sheep and goats can be herded more effectively which allows for greater control and provides an opportunity to limit impacts to critical areas such as riparian areas, meadows, aspen stands, critical wildlife habitat, etc. BLM would not authorize temporary changes from cattle to sheep in areas of known bighorn sheep habitat or areas within nine miles of known bighorn sheep habitat.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would require the removal of livestock from the drought afflicted public lands within the EYDO. The removal of livestock would result in the elimination of grazing management for the duration of the drought. If no livestock were being grazed on public land, no grazing management would be needed. The closure of grazing allotments could cause a financial hardship for permittees resulting from the loss of opportunity to graze livestock on public lands. The impacts to permittees resulting from a grazing closure have been analyzed within the Socio-Economic Values section of this document. The Grazing Closure Alternative would eliminate grazing within drought afflicted areas for the duration of the drought and one additional growing season following the cessation of the drought. This could improve the vigor of plants during drought and improve post drought recovery. In the long-term the Grazing Closure would be beneficial to grazing management, in that it would ensure future opportunities for grazing due to improved rangeland conditions.

## **3. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, management responses to drought would require the preparation of separate EAs for individual areas across the EYDO. This would increase response time and reduce the effectiveness of management during a drought. In many instances current livestock and wild horse management actions would continue with no modifications and therefore there would likely be no short-term impacts to grazing management. However, as discussed previously, a continuation of current livestock grazing management during drought could lead to the degradation of rangeland resources. During prolonged drought, rangeland degradation may

adversely affect the sustainability of rangeland grazing and create situations where rangelands fail to meet BLM Standards and Guidelines (S&Gs) for rangeland health. If S&Gs for rangeland health are not met, the BLM is mandated to implement changes to management activities so that rangelands "...are, or are making significant progress toward..." meeting rangeland health S&Gs (43 CFR §4180, Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration) and the appropriate Resource Advisory Council Guidelines. Additionally, the BLM could cancel portions of or entire permits on allotments that fail to meet S&Gs, which could adversely impact grazing management.

## **I. Land Use Authorization**

### **Affected Environment**

The BLM administers the majority of the land within the EYDO and provides for land use authorizations including utility lines, water pipelines, access roads, temporary use permits, public purpose leases, airport leases, wind energy monitoring towers and communication use leases located on mountaintops. The privately held lands are owned by individuals (e.g., homes, businesses and ranches), the county, and mining companies.

#### **1. Environmental Consequences of the Proposed Action**

The Proposed Action would reduce the impacts of authorized uses and activities on natural resources that are at risk of being adversely affected by drought. The DDMP identified in the Proposed Action would provide for the early detection and prompt response to drought. A quick response to drought would prevent further degradation to affected resources within the EYDO.

The maintenance of rangeland health would reduce soil erosion and the potential for noxious weed invasion. This would have a positive impact on land use authorizations by reducing the maintenance cost of right-of-ways as well as protect access to sites or the sites themselves.

#### **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would have similar impacts as the Proposed Action. The removal of grazing would maintain vegetative cover and reduce the potential for soil erosion and noxious weed invasion.

#### **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would increase response time and reduce the effectiveness of management during a drought. In many instances, current livestock and wild horse management actions would continue with no modifications. This would lead to an overall decline in rangeland health associated with a reduction in plant cover and increased susceptibility to soil erosion. Noxious weeds and non-native invasive species are more likely to invade areas that are in poor condition. Noxious weeds increase the costs for maintenance and soil erosion could damage access to sites or the sites themselves; therefore, the No Action Alternative would negatively impact land use authorizations.

## **J. Recreation**

### **Affected Environment**

BLM manages recreation in the EYDO by designation of Special Recreation Management Areas (SRMA) and Extensive Recreation Management Areas (ERMA). A SRMA is an area where more

intensive recreation management is needed and where recreation is a principal management objective. An ERMA includes all BLM-administered lands outside of SRMAs and may include developed and primitive recreation sites with minimal facilities. There are five SRMAs within the EYDO, Loneliest Highway, Chief Mountain, Egan Crest, Pahranaagat, and North Delamar.

The EYDO offers a wide variety of dispersed recreation opportunities including hunting, fishing, camping, shooting, horseback riding, OHV use, hiking, mountain biking, photography, historical sightseeing, rock hounding, caving, wild horse viewing and photography, nature study, snowmobiling, cross-country skiing and snowshoeing. Although many of the recreation activities are dispersed across the district, several developed and primitive recreation sites occur within the EYDO.

Developed recreation sites provide facilities to include one or more of the following, picnic tables, pit toilets and informational signs, and are easily accessible. Primitive recreation sites do not have developed facilities. Developed recreation sites include Ward Recreation Area (North) and Disc Golf Course, Egan Crest Trails, Garnet Hill, Illipah Reservoir, Ely Elk Viewing Area, Cleve Creek, Sacramento Pass, Stampede Trailhead, Patterson Pass, Chief Mountain South, Chief Mountain West, Meadow Valley, and Ash Springs. Primitive recreation sites include Goshute and Cold Creek Reservoirs, and Hells Half Acre. There are several areas within the EYDO, which are known for their scientific, educational, and/or recreational values. These areas include, but are not limited to Baker Archeological Site, Ward Mining District, Blue Mass Scenic Area, Silver State Trail, Mt. Irish Petroglyph Site, Mt. Wilson and Rainbow Canyon Backcountry Byways, and Pony Express National Historic Trail.

The EYDO manages competitive recreational events, recreation-related commercial enterprises, and other organized events through the use of Special Recreation Permits (SRP). BLM manages these permits in a manner consistent with management objectives determined for an area. The majority of SRPs issued are typically for outfitting and guiding activities and for OHV events. Four special recreation permit areas (SRPA) totaling approximately 1.3 million acres provide opportunities for competitive motorcycle SRP events. The BLM has named the SRPA boundary areas Ely, Pioche, Alamo, and Caliente (EYDO RMP, 2008).

## **1. Environmental Consequences of the Proposed Action**

The Proposed Action would have a minimal negative impact on recreation within the EYDO due to the installation of temporary water sources and fencing (e.g., temporary water hauls, water pipelines, and fencing). These installations could affect the aesthetics of rangeland and riparian resources within the EYDO, and depending on the location, could limit access to areas used for recreation.

Changes in livestock management practices (e.g., change in season of use, reduced grazing duration, partial reduction in AUMs, partial or complete closure of an allotment(s), targeted grazing of invasive annual communities, and temporary change in the kind or class of livestock) under the Proposed Action would have a minimal positive impact on recreation within the EYDO. Recreation within the EYDO is dispersed and primitive in nature and livestock grazing occurs in areas that coincide with recreational uses. Some recreation areas could see a reduction in conflicts with livestock if BLM implements these actions.

Wild horse gathers under the proposed action could have a negative impact on wild horse viewing within the EYDO. If BLM implements gathers under drought conditions, this could reduce

opportunities to view wild horses within the EYDO in the short-term. However, the Proposed Action would provide for the viewing of healthy populations of wild horses in future years.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative could have a positive impact on recreation within the EYDO. Recreation within the EYDO is dispersed and primitive in nature and livestock grazing occurs in areas that coincide with recreational use. Removing livestock from the range would reduce the potential for conflicts between livestock and the recreating public. Additionally, safety could improve as BLM decreases the potential for collisions between vehicles and livestock. These benefits would last for the duration of the drought plus one growing season following the cessation of the drought.

## **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would negatively impact recreation within the EYDO. Under drought conditions, livestock, wild horses would congregate in areas that receive a higher abundance of moisture, especially riparian areas. Recreationists could use some of these riparian areas. Potential negative impacts include the degradation of rangeland and riparian resources. Degradation could include, but is not limited to, vegetation trampling, soil compaction, erosion, and water contamination.

## **K. Socio-Economic Values**

### **Affected Environment**

The Ely planning area includes land in three Nevada counties: Lincoln, Nye, and White Pine. All of Lincoln and White Pine counties, but only the eastern portion of Nye County, including the Duckwater Shoshone Indian Reservation, are within the planning area. The portion of Nye County within the planning area is rural and isolated by distance from the major communities and government service centers in the county. Important economic and social linkages connect the Nye area to Ely and other nearby areas of White Pine County. The planning area comprises 11.5 million acres of public lands (about 17,800 square miles) in east-central Nevada, an area about comparable to the combined areas of New Hampshire and Vermont. Generally rectangular in shape, the planning area runs approximately 240 miles north to south and 115 miles east to west (see Map --). Only 13,596 people resided within the perimeter boundary in 2000, an average density of less than 0.8 persons per square mile.

The region's rural character is evident when considering the following characteristics:

Communities and population centers in the planning area include two incorporated municipalities: Ely, the county seat of White Pine County, and Caliente in Lincoln County. Ely is also the largest community in the planning area with a population of 4,041 residents in 2000, and Caliente the second largest, with a 2000 population of 1,123, the largest community in Lincoln County.

Unincorporated communities in the planning area include McGill, Lund, Ruth, Baker, Preston and Cherry Creek in White Pine County; Panaca, Ash Springs, Alamo, and Pioche in Lincoln County, and Duckwater and Currant in Nye County.

Nearly 58 percent of all residents of the region live in just five communities, Ely, Caliente, McGill, population 1,184 in 2000, Pioche, population 840, and Panaca, population 632. That

share rises to 63 percent of the total non-institutionalized population, that is, excluding the 1,158 persons living in correctional facilities from the total population.

Ely and Caliente are approximately 133 highway miles distant from one another.

All or part of three federally recognized American Indian reservations are located within the planning area; the Duckwater Shoshone Reservation, the Ely Shoshone Colony, and the Goshute Shoshone Reservation. The latter straddles the Nevada-Utah state line, with two-thirds located in White Pine County and the remainder in Juab County, Utah. The reservations are also population centers.

Lands administered by the BLM and other federal agencies comprise the majority of all lands in the three counties (98.3 percent in Lincoln, 92.7 percent in Nye, and 93.5 percent in White Pine counties). The statewide average is 85.3 percent. Privately owned lands and lands controlled by units of state and local government total about 1.3 million acres in the three counties, approximately 415,000 acres of that in Lincoln and White Pine counties. Most of the private and locally controlled land in Nye County is outside the planning area.

The economies of rural Nevada, including that of the planning area, historically have been relatively undiversified and dependent upon mineral or other natural resource development, agriculture, and government. That dependency subjects the local economy to expansion and contraction cycles tied to changes in one or more key sectors, and to the subsequent amplifications of those changes due to “multiplier” effects as the direct changes in business and consumer spending ripple through the economy. Economic data for White Pine and Lincoln counties indicate a net change of 2.63 jobs for each job gained or lost in gold mining, 1.67 net jobs per job in cattle ranching, 1.4 to 1.7 jobs per construction job, and 1.2 jobs per state government job. The corresponding multipliers for income are 2.18 for gold mining, 1.72 for cattle ranching, 1.27 to 1.60 for construction, and 1.10 for state government employment.

Total employment in Lincoln County numbered 996 jobs in 1970. Through the 1970s and 1980s, much local employment growth was tied to federal activities at the Nevada Test Site. The opening of the Caliente Youth Center helped boost total employment to a peak of 2,426 in 1989. Subsequent cutbacks at the Nevada Test Site initiated a period of contraction as the job and income losses rippled through the economy, employment 3.23-3 3.23 Economic Conditions eventually falling below 2,000 in 1999. Modest growth in retail trade, services, and construction has occurred in concert with recent population growth, raising total employment to 1,969 in 2003. Total farm employment stood at 150 jobs in 2003. Employment growth between 1970 and 2003 averaged 2.1 percent per year.

White Pine County’s economy has been consistently larger and more diverse than that of Lincoln County, anchored by mining, manufacturing, services, and trade. In part, the latter resulted from Ely’s location at the crossroads of regionally important highway travel routes and a railroad built to serve the area’s mining industry. However, White Pine County has been unable to sustain long-term employment growth over time. Beginning in the mid-1970s, the mining industry went through several expansion and contraction cycles. In the mid-1980s, local manufacturing also declined. Total employment fell from 4,597 in 1974 to 3,625 jobs in 1979, before climbing to 4,394 in 1981 and falling again to 3,597 in 1985. Mining in White Pine County had resurgence in the 1990s when as many as eight major mining projects were operational. Peak production, in terms of value, occurred in 1998 when local mines produced more than 253,000 ounces of gold and 300,000 ounces of silver. Mining subsequently waned as depleted reserves and weak market

conditions caused all but Placer Dome's (Barrick Gold Corporation) Bald Mountain Mine to cease operation. The present Robinson copper mine plan anticipates a 10-plus-year life-of-mine.

Construction and opening of the Ely state prison in 1990 along with increases in federal government employment were the primary factors underlying the increase in total government employment from 771 employees in 1988 to 1,434 jobs in 2002. Farm employment, including both proprietors and hired hands, totaled 182 in 2003. On average, employment in White Pine County declined by about 0.3 percent per year between 1970 and 2003.

The high reliance on a production-based economy typifies the natural resource-based economies of many western, rural economies, and also the economic development challenges that communities face with an erosion of that base.

### **Income and Poverty**

Statewide unemployment from 1995 to 2004 ranged between 4.1 and 5.5 percent. During the same period, workers in the planning area saw a much wider fluctuation in unemployment. In Lincoln County, unemployment climbed to 12.6 percent in 1996 following reductions in federal activity at the Nevada Test Site. Unemployment has since moderated, although it is consistently higher than statewide averages and 2 percent higher in 2003.

Economic migration has played an important role in White Pine County's labor market, triggered by a loss of about 1,300 mining jobs. As a result of these job losses, unemployment peaked at 8.0 percent in 1996 but has since declined to 3.7 percent in 2004 as residents moved from the area, secured other employment, or withdrew from the labor force. Workers entering and leaving the labor force in response to the relative availability of jobs provide another labor market adjustment mechanism. Labor force data published by the state indicate that gross labor force participation has declined by 20 to 25 percent in Lincoln and White Pine counties since 1995.

Median household income was \$44,118 (per 2005-2009 average); per capita income was \$30,763; and 7% of people fell below the poverty level. Unemployment rates in the county have ranged from a high of 8.6% in 2000 to a low of 3.2% in 2007. Unemployment in 2010 was 8.3% (Bureau of Labor and Statistics 2011). Lincoln County had the largest proportion of government-employed workers in 2008, at 20%, with the national average at 13.5% (Headwaters Economics 2011). The gross county economic output, that is, the aggregate value of goods and services produced, provides another perspective on the relative size of the local economies.

Personal income on both a per-household and per capita basis has increased within the area. Between 1985 and 2002, total personal income in Lincoln County increased by 86 percent, climbing steadily from \$48.3 million to \$89.6 million (Personal income in White Pine County increased from \$91.9 million to \$228.6 million during the same period (a 149 percent increase) exceeding the previous peak of \$224.7 million that occurred during the height of mining activity. Adjusting for inflation reduces the gains in total personal income to 13 and 51 percent in Lincoln and White Pine counties, respectively. Wage and salary earnings accounted for about 66 percent of total personal income in the planning area in 2002. The statewide average was 76 percent. The high local concentrations of earnings from the government sectors reflect a shift away from natural resource-based development (i.e., mining) as the predominant source of high-paying jobs.

The increases in local income, however, have not kept pace with broad gains made across the state and nation. As a result, per capita personal incomes continue a long-term trend of lagging statewide and national averages. As measured by the Bureau of Economic Analysis, per capita

incomes in Lincoln and White Pine counties in 2002 were 69 percent and 87 percent, respectively, of the Nevada average of \$30,559 and 71 percent and 89 percent, respectively, of the U.S. average of \$29,847. Median household income in 1999, as recorded in the 2000 Census, was \$31,979 in Lincoln County and \$36,688 in White Pine County. The two counties ranked seventeenth and thirteenth lowest among Nevada counties and were well below the statewide average of \$44,581.

The percentage of households in the planning area with very low incomes is substantially higher than the statewide average. Moreover, most of the aforementioned unincorporated communities have high poverty rates relative to county and state averages. Lower incomes translate to an elevated incidence of poverty among residents in the planning area, particularly in Lincoln County. Across the state, almost one in 10 households lived in poverty. By comparison, in Lincoln County the rate was about one in 6 households (16.5 percent), the highest in Nevada. Countywide poverty rates in Nye and White Pine counties, at 10.7 percent and 11.0 percent, respectively, were above the statewide average, too, but only by a small fraction.

### **Recreation and Tourism**

Public lands comprise a resource base for public recreation and tourism in the planning area. Uses include, but are not limited to, off-highway vehicle use, camping, picnicking, hunting, hiking, mountain biking, horseback riding, wildlife observation, fishing, geologic exploration, historic/cultural tourism, fossil collecting, backcountry use of designated wilderness areas, and various winter sports. Abundant recreation opportunities are located within the planning area, supporting substantial annual use by residents and visitors, which in turn generates support for the local economies.

Recreation is significant to the local economy; annually approximately 400,000 visits are made to the National Park and the four state parks. In recent years, organized off-highway vehicle events in Lincoln County and northern White Pine County have been attracting increased levels of activity.

Travel and tourism is another economic activity in the planning area tied to the public lands. Tourism resources and attractions include the Nevada Northern Railroad, the historic railroad depot in Caliente, U.S. Highway 50 and Great Basin scenic routes, and numerous historical sites throughout the region. The economic contributions associated with recreation and tourism has not been quantified, but the linkages are apparent in the types of businesses operating in the planning area. The U.S. Census Bureau reported that 100 of the 300 private sector establishments doing business in Lincoln and White Pine counties in 2001 were either in retail stores, eating and drinking places, or motels or other overnight lodging accommodations.

Hunting, fishing, and non-consumptive recreation pursuits associated with wildlife, such as watching or photographing, are an important part of the area economy and quality-of-life.

The Nevada Department of Wildlife licenses hunts for antelope, elk, mule deer, and a limited number of mountain lion in the area. Licenses also are issued for bird and small game hunting. Big game tags for deer, elk, bighorn sheep, antelope, and mountain lion are issued by lottery draw. Applicants exceed the number of available tags, often by a substantial margin. Hunting of upland game and small game species and fishing occur under the auspices of the general hunting license and stamps.

A national study of such pursuits estimated residents and non-residents spent \$681 million in Nevada on wildlife-related recreation in 2001. Of that total, about \$168 million was related to the actual, active participation, for example, food, lodging, or fuel. The remaining \$513 million

was for equipment, licenses, guide and outfitting services, and memberships. Non-consumptive activities accounted for 42 percent of the total spending, following by fishing (36 percent) and hunting (22 percent). Total activity levels within the state were estimated at 1.58 million days of fishing, 490,000 days of hunting, and 609,000 days of non-consumptive wildlife related use

All three types of activity occur on public and private lands across the planning area. County-level estimates are not part of the 2001 national study, but the 5,738 resident and 1,140 nonresident hunting and fishing licenses sold in Lincoln and White Pine counties in 2002-2003 are indicative of the economic and social importance of these activities in the region. Published big-game tag sales and hunting statistics indicate about 6,500 resident and 550 non-resident big game hunts occur within the planning area, although not necessarily on lands managed by the Ely Field Office (Nevada Department of Wildlife 2004). Applying results for Nevada from the 2001 national survey to the combination of license and tag sales yields estimated annual spending of \$25 million to \$30 million by resident and non-resident participants in the planning area. However, that spending is not captured entirely within the planning area due to factors such as mail order purchasing and fishing and hunting by residents outside of area.

Guided fishing and hunting trips are an important economic stimulus because of the income they generate for the guides and outfitters and the purchases of goods and services made by those guides and outfitters to provision the hunts. Local guides and outfitters, licensed by Nevada Department of Wildlife, provide guided big game hunts for residents and non-residents alike. The number of guided hunters conducting hunts under special recreation permits issued by the Ely Field Office has increased over the past several years from 63 in 2000 to 174 in 2003. Fee receipts in 2003 totaled \$9,631.

### **Native Plant Products**

Another economic linkage between the planning area and the local economy stems from personal collection and use of forest/woodland products. The Ely Field Office issues permits allowing the collection of fuel wood, pinion pine nuts, Christmas trees, and posts and poles. Permit sales over the past 7 years have ranged from 1,515 to 1,875 cords per year of fuel wood, 0 to 26,000 pounds of pinion pine nuts, 540 to 4,918 Christmas trees, and 1,500 to 3,118 posts. Private use accounted for nearly 93 percent of the total, with commercial sales accounting for about 7 percent.

### **Farming and Ranching**

Farming and ranching played an important role in the initial settlement and economic and social development of area. However, in recent years, tourism/recreation, mining, and government have largely supplanted that role. Between 1985 and 2003, more than 725,000 net new non-farm private jobs and 71,700 government jobs were created statewide, compared to a net loss of about 250 farm jobs. Statewide in 2002, non-farm private jobs accounted for 88.8 percent of all jobs, compared to 10.8 percent in government and 0.4 percent in farming.

In Lincoln County, farm employment increased slightly near the end of the 1980s. Since that time, it has declined steadily. In 2003, government accounted for 31 percent of all jobs in Lincoln County, compared to 8 percent in farming and 61 percent in non-farm private industries. Both the number and share of farm and non-farm private jobs declined in White Pine County between 1985 and 2003. By 2003, non-farm private jobs accounted for 59 percent of all local jobs. During that same period, the number of government employees more than doubled and the share of all jobs in the public sector increased to 36 percent. Today, the sparsely populated area continues to rely on a

mining, ranching, and agricultural economy as well as tourism, recreational resources, and an emerging potential for renewable energy production

Agriculture has struggled to remain viable in an environment characterized by increasing production costs, productivity gains, weak prices, and the effects of extended drought. Nevertheless, agriculture and its strong links to the use of public lands, primarily in the form of grazing, remains an important dimension of the socioeconomic environment in the planning area. However, recent data indicate that the agricultural sectors of Lincoln and White Pine counties have experienced economic contractions mirroring the overall trend statewide. Every 5 years, agriculture is the subject of a national economic census. Data from the 2002 agriculture census tallied 230 farms and ranches (collectively termed farms in the census) operating in Lincoln and White Pine counties, 6 fewer than five years earlier in 1997. Farms in White Pine County comprised 203,106 acres in 2002, down from 247,446 acres in 1997. The total farm acreage in Lincoln County was not disclosed for 2002, but is estimated at about 46,500 acres, down from 48,497 in 1997. Thus, the combined area of farmed land in Lincoln and White Pine counties declined by an estimated 46,391 acres, or approximately 16 percent, between 1997 and 2002.

Although small or corporate classes of livestock operations both contribute social and economic benefits to northern Nevada, economic challenge to smaller family operations is probably most likely to harm the social fabric of small communities. This would be especially true if permittees were forced to leave the area because of financial stress. Family operations are typically of great importance to county governments and even to some of the general public. BLM is concerned about and aware of the potential socio-economic consequences of rangeland management actions. Nevertheless, rangeland management decisions in the Ely District must balance the need to reasonably support the social fabric and economies of small communities as well as maintain the public land natural resource base upon which the livestock industry relies. Thus, BLM decisions must be made in light of the public land's capacity to support wild horses and livestock herds. And where carrying capacity is limited by drought conditions, BLM is compelled by law and by federal regulation to take actions that would result in sustainable grazing use and functioning rangelands, according to the S&Gs and 43 CFR § 4180.

BLM has no access to individual permittee financial records. Further, the ELY District does not intend to request financial records from ranchers for socio-economic analysis purposes. Consequently, this EA section estimating socio-economic impacts of the Proposed Action and Alternatives will only address animal unit month (AUM) changes and costs associated installing temporary range improvement projects (i.e., water troughs, pipelines, fencing).

Because BLM cannot conduct a thorough and accurate analysis of how permitted AUMs may affect individual ranchers economically, it is also not possible to predict accurately the consequences to ranches under AUM reductions. This may or may not lead to existing ranches becoming economically unviable. The BLM also assumes that if existing ranches fail, some other corporation or individual could purchase the base property and grazing privileges. It is not possible to foresee which base properties, if any, may change out of livestock production and into some other form of business. If base properties remain active for livestock production, the industry as a whole would continue to exist but under different ownership and likely with reduced income. It is important to note that the Taylor Grazing Act directs BLM to take actions that would stabilize the livestock industry that is dependent upon public rangeland forage. However, it is not possible for Ely District BLM to guarantee that every existing livestock permittee would survive as an economic unit or in a manner to which existing ranchers are accustomed in the event that BLM must reduce AUMs to mitigate rangeland impacts due to drought conditions.

For smaller family operations, economic setbacks or other production limitations could greatly challenge their ability to remain viable and a part of the community in which they choose to live. The livestock industry is not alone in facing potential changes to preferred lifestyles and ways of generating income. The same type of economic pressures and concerns about maintaining a way of life that are affecting permittees, are also affecting other commodity producers and businesses.

Aside from the AUM changes described in this EA, ranch viability (e.g., sustainable ranching operations capable of supporting families and paying for necessary additional help) would likely be influenced by factors beyond BLM control. These factors may involve livestock price fluctuations, foreign competition, transportation and fuel costs, public land forage limitations due to drought, winter livestock feeding costs, private pasture rental fees, and other similarly unpredictable factors.

### **1. Environmental Consequences of the Proposed Action**

BLM has designed the Proposed Action to prevent degradation of rangeland resources and protect uplands and riparian areas during drought, which would promote rangeland sustainability for wild horses, livestock, and wildlife. Providing for sustainable grazing management that prevents degradation of habitat conditions for wildlife and wild horses would in turn increase economic opportunities for livestock operations, help sustain livelihoods for the multiple families employed by these ranching operations, and foster more desirable social opportunities.

Continuing viable ranching operations would also enhance the economies of Lincoln, White Pine and Nye Counties through taxes and goods and services purchased by the ranches and people employed by these ranches. By maintaining viable ranching operations and protecting rangeland conditions in the Ely District, BLM would maintain traditions associated with the ranching communities within the Ely District.

Under the Proposed Action, public lands within the Ely District would continue to contribute environmental amenities such as open space, scenic quality, and recreational opportunities (including hunting, bird watching, sightseeing, hiking, Native Plants and OHV). These amenities would remain but could be reduced if rangeland resources are not protected during drought so that they may provide recreational opportunities such as wildlife viewing and hunting.

Costs associated with the materials, labor, and transportation necessary to implement temporary range improvement projects (i.e., water troughs [water hauls], above ground pipelines, fencing) under the Proposed Action could adversely impact permittees. Conversely, the goods and services purchased by permittees to implement temporary range improvements could enhance the economies of local communities and counties. These economic impacts would be expected to be of short-term duration; however, protecting degradation of rangeland resources (through the use of temporary range improvements) would promote rangeland sustainability thereby providing available forage resource to support livestock grazing in the future.

Under the Proposed Action, temporary reductions in authorized AUMs could adversely impact permittees. As directed in BLM Washington Office instruction memorandum (IM) No. 2012-070, the cost to permittees to find alternative forage in Nevada is estimated at \$13.00 per AUM to place livestock on private pasture, which does not include labor, fuel, and equipment for hauling livestock if only distant pasture is available. According to BLM WO IM No. 2012-070 the BLM charges permittees \$1.35 per graze livestock on BLM lands; a difference of \$11.65 per AUM. The cost of providing hay is variable based upon annual supply and demand, but is likely to be much higher than pasture. Additionally, ranches within the Ely District may not be able to support their

current number of employees, which could have an adverse impact on local economies. Viability and sustainability of the ranches holding grazing permits within the Ely District could decline in periods of prolonged drought, potentially affecting their way of life.

Changes in livestock grazing management practices (i.e., reduced grazing duration, change in season of use, targeted grazing of invasive, annual communities, etc.) under the Proposed Action would likely have minimal social and economic impacts to permittees or local economies within the Ely District. Implementing changes in livestock grazing practices would not necessarily include a reduction in AUMs; therefore, minimal material, labor, or transportation cost would be incurred by permittees. It should be noted, however, that if a temporary change in kind or class of livestock is implemented to mitigate drought impacts, and the BLM would assess a \$4.08/AUM surcharge (BLM WO IM No. 2012-070) if the permittee leases livestock.

If wild horses were gathered under the Proposed Action, impacts to socioeconomics would be temporary in nature and would cease upon gather completion. These impacts would consist of hiring contractors to conduct the gather operations, and contributions to local economies/towns for food and lodging during gather operations. There would be no permanent changes in employment or population from the proposed action or alternatives. Removing wild horses during drought would prevent additional degradation of rangeland resources thereby promoting rangeland sustainability and providing available forage resource to support wild horse populations in the future.

## **2. Environmental Consequences of the Grazing Closure Alternative**

Under this alternative, grazing closure of drought afflicted areas would likely result in short-term adverse impacts to grazing permittees. As referenced above, the cost to permittees to find alternative forage in Nevada is estimated at \$13.00 per AUM (BLM WO IM No. 2012-070) to place livestock on private pasture, which does not include labor, fuel, and equipment for hauling livestock if only distant pasture is available. The Ely District currently authorizes permits for livestock grazing totaling 362,869 AUMs. Under this alternative, the projected annual cost to permittees to graze private land may total up to \$4,717,297.00 (assuming 2012 estimated rates). Additionally, the BLM Ely District would not collect up to \$489,873.15 (2012 BLM grazing rates are \$1.35/AUM) annually in grazing fees from permittees. The cost of providing hay is variable based upon annual supply and demand, but is likely to be much higher than pasture.

Ranches within the Ely District may not be able to support their current number of employees during periods of drought, which could have temporary adverse impacts on local economies. Viability and sustainability of the ranches holding grazing permits within the Ely District could decline in periods of prolonged drought, potentially affecting their way of life.

Closing drought-afflicted areas to livestock grazing under this Alternative, however, would prevent degradation of rangeland resources and protect uplands and riparian areas during drought. This would have long-term beneficial impacts for livestock grazing permittees by providing for sustainable grazing management, which would in turn increase economic opportunities for livestock operations, help sustain livelihoods for the multiple families employed by these ranching operations, and foster more desirable social opportunities.

Continuing viable ranching operations would also enhance the economies of, Lincoln, White Pine, and Nye Counties through taxes and goods and services purchased by the ranches and people employed by these ranches. By maintaining viable ranching operations and protecting

rangeland conditions in the Ely District, BLM would maintain traditions associated with the ranching communities within the Ely District.

### **3. Environmental Consequences of the No Action Alternative**

Under the No Action Alternative, BLM would not implement the DRAs contained within the Proposed Action and the Grazing Closure Alternative. Additionally, BLM would not implement changes to the current livestock grazing and wild horse management activities.

Continuation of current livestock and wild horses management during drought would likely lead to the degradation of upland and riparian health. It would also likely lead to degraded and reduced recreation and hunting opportunities. If drought conditions persist for prolonged periods, cumulative degradation of rangeland health could result in grazing allotments failing to meet rangeland S&Gs in the future. If S&Gs for rangeland health are not met, the BLM is mandated to implement changes to management activities so that rangeland "...are, or are making significant progress toward..." meeting rangeland health S&Gs (43 CFR § 4180, Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration). Additionally, the BLM could cancel portions of or entire permits on allotments that fail to meet S&Gs, which could adversely impact affected permittees.

The No Action Alternative could also adversely affect permittees who are required to implement rangeland improvement projects so that degraded rangelands "...are, or are making significant progress toward..." meeting rangeland health S&Gs. Economic setbacks or other production limitations may greatly challenge the ability of livestock producers to remain viable. As previously stated, it would not be possible for Ely District BLM to guarantee that every existing livestock permittee would survive as an economic unit or in a manner to which existing ranchers are accustomed in the event that BLM must cancel portions of or entire permits due to a failure to meet S&Gs.

## **L. Soils**

### **Affected Environment**

The extremes of climate, relief, aspect, and geologic type combine to form a wide variety of soil types. Soils vary with differing parent materials, position on the landscape (landform), elevation, slope, aspect, and vegetative cover. Soils range from those on the valley floors that are frequently deep, fine-textured, poorly drained, and alkaline with a high salt content to shallow mountain soils formed over bedrock.

Information obtained from soil surveys is used in evaluating land-use potential, potential natural plant communities, and developing reclamation and rehabilitation plans. Soils found in the EYDO are primarily Aridisols, Entisols, and Mollisols.

The soils in the valleys are mainly mineral soils of two types: those that do not have water continuously available for three months when the soil is warm enough for plant growth (Aridisols); and soils showing little evidence of the soil forming process, the development of horizons or layers (Entisols). Aridisols dominate deserts and xeric shrub lands and have a very low concentration of organic matter. Water deficiency is the major defining characteristic of aridisols. Entisols accumulate on land surfaces that are relatively young (alluvium), extremely hard rocks or disturbed material, mined land, and highly compacted soils.

The mountain sides consist of Aridisols and Entisols, and some deeper mineral soils with grass cover and darker surface horizon (Mollisols). Generally, Entisols occur on steep mountain slopes where erosion is active. They also occur on flood plains and alluvial fans where new material is deposited. Aridisols and Mollisols are older and occur on more stable alluvial fans and terraces.

Average annual soil loss varies by soil-type which is related to soil texture and landscape location. Some soils exhibit high rates of erosion while others exhibit much lower erosion rates. In general, as disturbance increases and/or soil cover is reduced, soil loss increases compared to undisturbed locations. Management actions which maintain or improve vegetation cover and reduce disturbance are expected to reduce the risk and rate of wind and water erosion.

## **1. Environmental Consequences of the Proposed Action**

Soil stability is an important rangeland health consideration. Stability is important for soil biotic development and resistance to erosion. Under the Proposed Action, BLM would implement DRAs to maintain vegetation within the EYDO, which would minimize the potential for accelerated erosion events. A healthy, productive, and diverse plant community plays an important role in the improvement and/or maintenance of soil processes such as permeability and infiltration rates and soil stability.

Drier than normal soils, typically encountered during drought, are at increased risk of erosion. The erosion hazard during a drought is increased when prolonged grazing pressure has further reduced plant cover (Thurow and Taylor 1999). Inadequate plant cover can lead to substantial wind or water erosion of valuable top soil (Reece et al. 1991). Crusting of surface soils is another problem associated with low vegetation cover. When wind strikes exposed soil particles are detached and are likely to lodge in the remaining soil pores, making them smaller or sealing them completely resulting in a crust (Thurow and Taylor 1999). Size of materials susceptible to movement is related to wind velocity. This condition potentially reduces water infiltration rate, when precipitation occurs, and increases erosion potential. Standing dead vegetation and litter reduce the effects of erosional energy and promotes water infiltration in the case of rainfall. Soil cover also inhibits crusting by reducing raindrop impact which in turn reduces water erosion (Gates et al. 2003). The prevention of accelerated erosion depends on the ability to respond to reduced vegetative growth quickly, so that adequate plant and litter cover remain (Reece et al. 1991). The Proposed Action would provide for prompt detection of drought conditions through a management plan. The triggers defined in the plan would be used to activate the DRAs described in the Proposed Action. These actions are designed to promote proper utilization of vegetation by livestock and wild horses. As stated earlier, proper utilization would provide for adequate cover needed for soil protection during drought. The specific DRAs selected would depend on the situation. Forage and water conditions would be assessed and monitored.

A majority of the DRAs are intended to improve livestock and/or wild horse and distribution and prevent the over grazing of vegetation during drought. DRAs intended to improve distribution include: temporary range improvement projects; change in livestock management practices; and temporary change in kind or type of livestock. The remainder of the actions brought would be used to address timing and duration of grazing and adjust stocking rates to match forage and water supplies. Other actions include: include change in season of use; change in grazing duration; partial reduction in AUMs; partial closure of an allotment(s); and wild horse removal.

Actions designed to improve distribution would limit soil erosion by ensuring grazing pressure is distributed across an allotment(s) or HMA/HA(s). Temporary range improvement projects such as water hauls, above ground pipelines, or electric fences would result in a temporary

congregation of livestock and/or wild horses within certain areas (i.e., the immediate area near the improvement). The congregation of livestock and/or wild horses near temporary rangeland improvements could lead to an increase in soil compaction, a reduction in vegetative cover, and an increased potential for soil erosion. The use of temporary range improvement projects would improve the overall distribution of livestock and/or wild horses and thus limit the overuse of vegetation by evenly distributing grazing pressure across and allotment(s) or HMA/HA(s). Proper utilization of vegetation, especially during drought would provide adequate vegetative cover needed to reduce soil erosion. Temporary electric fences could be used to exclude livestock from critical areas such as riparian areas, meadows, critical areas for wildlife, or areas where soil increased erosion is likely.

Livestock and wild horse use around temporary improvement projects would be monitored. Once utilization triggers are met, livestock and the temporary range improvement projects would be removed from the area. In circumstances where wild horses are the primary grazers, conditions would be assessed to determine if an adequate amount of forage and water remain to support the animals. The use of temporary range improvement projects would only be used when it is determined that adequate forage resources exist to allow for continued grazing of an area in a manner that would not further impact rangeland resources.

DRAAs that address the timing and duration of grazing would ensure that grazing occurs at the appropriate time and for the appropriate duration during drought. Reduction of AUMs would adjust livestock grazing to a level consistent with available forage and water supplies. Changing the season of use can reduce adverse grazing impacts during drought. Adjustments would be made according to the availability of water and forage and rangeland condition. In most areas, shifting the season of use to a time outside of the critical growth period would allow forage plants to take full advantage of available soil moisture. Allowing plants the opportunity to grow would increase ground cover and reduce soil erosion.

Reductions in grazing duration are often needed during drought to protect rangeland resources from further degradation. Grazing durations, as currently permitted, may result in plants being grazed multiple times. Plants that are grazed repeatedly may have little or no opportunity to regrow between successive uses and may become stressed (Howery 1999). Reduced grazing durations would provide for an increased amount of rest for plants already stressed by drought and thereby, increase ground cover and protection from soil erosion.

Targeted grazing of cheatgrass and other non-native annual species could be used to provide forage while providing rest for native species and reduce undesirable plants and hazardous fine fuels. Annual bromes such as cheatgrass can provide a valuable forage resource under drought conditions (Reece et al. 1991). Targeted livestock grazing on monotypic annual communities can help reduce fire hazards by disrupting fine fuel continuity and reducing fuel loads (Peischel and Henry 2006). According to Reece et al. (1991), moderate defoliation of annual species can enhance the production of perennial grasses by reducing plant competition and minimizing soil moisture depletion. This would reduce the risk of soil erosion by increasing perennial plant cover.

Partial reduction in AUMs, partial or complete closure of an allotment, and/or wild horse and removal are all intended to balance animal stocking rates with forage supply and water availability. Since drought often results in a reduction of forage and water resources a determination that forage and/or water supplies are insufficient to meet livestock and/or wild horse needs could result in temporary AUM reductions. DRAs that improve livestock and/or wild horse distribution are only viable when adequate forage and water resources exist within an allotment or HMA/HA

therefore, when resources are insufficient to meet livestock and wild horse needs, continuation of pre-drought stocking rates would result in overutilization of plants and a potential increase in soil erosion.

During wild horse drought gathers, direct impacts such as soil displacement and compaction would occur at trap sites (usually less than 1 acre in size). Trap sites are ideally located in areas previously disturbed. Precautions would be taken during the gather to limit the impacts to soils during gather operations.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would provide rest for all areas afflicted by drought. Resting these areas would provide vegetation an opportunity to take full advantage of available soil moisture and nutrients without interruption from livestock. This would ensure adequate cover remains and the potential for soil erosion would be reduced. Grazing closure would also provide one growing season of rest for plant recovery following the cessation of the drought.

## **3. Environmental Consequences of the No Action Alternative**

Wind velocity and its potential to detach and transport dry soil, exponentially increases as vegetation cover is reduced (Marshall 1973). Proper use of range forage allows plants to survive dry periods, recover quickly, and provide cover to protect the soil and promote water infiltration (Hanselka and White 1986). Protection of range plants during drought years allows for quick recovery following a drought (Howery 1999). The No Action Alternative would negatively impact soils resources during times of drought due to an increased likelihood of erosion.

## **M. Vegetation (Including Special Status Species)**

### **Affected Environment**

#### **Dominant Vegetation Communities**

The following description of dominant vegetation communities occurring within the EYDO has been adapted from information provided by Weisberg (2010).

The geography and rugged topography within the EYDO have given rise to a diversity of vegetation types. Mojave Desert vegetation dominates the southern portion of the EYDO. Great Basin vegetation occupies the northern part of the district, which is characterized by high, sagebrush-dominated valleys and numerous mountain ranges with the boundary between these two main ecological zones occurring roughly between Caliente and Alamo. The Mojave Desert is known for extremely hot summers, but it has cool winter temperatures. The Great Basin is considered a “cold desert” because of its snowy winters, although summers can be quite hot and dry.

#### **Mojave Desert**

Much of the Mojave Desert is dominated by creosote bush (*Larrea tridentata*), a widely distributed shrub with olive-colored foliage that is resinous and exudes a strong creosote odor. Creosote bush occurs with white bursage (*Ambrosia dumosa*) on deep, sandy soils and with shadscale (*Atriplex confertifolia*) on shallower soils. The shallow soils often have “desert pavement” on the surface or are underlain by caliche (hard layers of calcium carbonate that are

nearly impervious to water penetration). At higher elevations, creosote bush diminishes, and blackbrush (*Coleogyne ramosissima*) becomes more abundant.

The overall structure of Mojave vegetation is dominated by desert shrubs, generally of short to medium height and somewhat evenly spaced. However, other plant life forms are important including grasses, herbaceous flowering plants, succulent (water-storing) species such as cacti and yucca, and even some trees. Many annual plant species in the Mojave emerge only in years with strong winter rains (winter annuals) or summer rains (summer annuals), causing the “desert to bloom” during irregular, favorable periods. Annual plants germinate, grow to reproductive maturity, flower, set seed, and die within a single growing season. Some annual plant species in the desert complete their entire life cycles in 6-8 weeks or less (desert ephemeral species), thus avoiding the hot temperatures of the summer months.

### Desert Oases (Riparian Zone)

Desert oases surround spring-fed pools or occur where groundwater is sufficiently close to the surface. Such ecosystems do not suffer the same water limitations as the surrounding landscape and so include a diversity of plant species not found elsewhere. Tree species include screwbean mesquite (*Prosopis pubescens*), western honey mesquite (*Prosopis glandulosa*), velvet ash (*Fraxinus velutina*), several willow species including *Salix exigua* and *Salix gooddingii*, and Fremont's cottonwood (*Populus fremontii*). Woodland, wet meadow, marsh, and shrub thicket plant communities occur in complex mosaics, and due to the vast distances separating many desert spring ecosystems, often include species that have evolved or persisted in isolation and occur nowhere else (endemic species).

### Joshua Tree

The Joshua tree (*Yucca brevifolia*), is an unusual member of the lily family that grows to 30 feet in height and occurs in extensive, open stands, grows on high alluvial fans and marks the transition zone between the Mojave and Great Basin deserts. Its northernmost occurrence is in the vicinity of Tickaboo Valley and Dry Lake Valley, although it reaches its greatest abundance far to the south.

### Great Basin

Nevada's other important vegetation types are characteristic of the Great Basin and vary according to elevation zone. Rainfall increases and temperature decreases with increasing elevation from valley bottom to mountain peak. In an average year, many of EYDO's higher mountain ranges are covered in snow all winter, while many valley bottoms are snow-free for much of the season. The distribution of plant species tracks these climatic differences, resulting in a similar zonation of vegetation types in the various mountain ranges. For simplicity, the Great Basin's vegetation zones can be lumped into several distinct types: Salt Desert (Shadscale Zone), Sagebrush Grassland, Pinyon-Juniper Woodland and Mountain Shrub. Salt Desert and Sagebrush Grassland are characteristic of valley bottoms.

### Salt Desert Shrub

Salt Desert is most prevalent in the low, saline valleys. In the poorly drained playas characteristic of this vegetation type, the water table fluctuates periodically. This results in the development of a salty crust on the surface, as well as extensive wind erosion during dry periods. Plant species that occur in the Salt Desert, such as shadscale and greasewood (*Sarcobatus vermiculatus*), are well adapted to high salt levels and drought conditions. Although there is more biodiversity than what

is always apparent to the observer, the general aspect of this vegetation type is one of uniformity, as it is dominated by low, nondescript shrubs that are often spiny and of a greenish-gray hue. Vegetation cover is typically only about 10–15% of the ground surface.

### Sagebrush Grassland

At somewhat higher elevations and on well-drained soils, Salt Desert transitions into Sagebrush Grassland. Shrubs here are taller and less spiny than in the Salt Desert zone, and vegetation cover is typically 15–40%. Annual precipitation of at least eight inches is typically required to support this vegetation type. Dominant shrub species include big sagebrush, low sagebrush (*Artemisia arbuscula* var. *arbuscula*), black sagebrush (*Artemisia arbuscula* var. *nova*), *Ephedra* species, antelope bitterbrush (*Purshia tridentata*), spiny hopsage (*Grayia spinosa*), desert gooseberry (*Ribes velutinum*), snowberry, (*Symphoricarpos* spp.), littleleaf horsebrush (*Tetradymia glabrata*), and rabbitbrush (*Chrysothamnus* spp.). Also important in the Sagebrush Grassland are a variety of forbs (flowering herbaceous plants) and perennial bunchgrasses such as Great Basin wild rye (*Leymus cinereus*), squirreltail (*Elymus elymoides*), needle-and-thread (*Heterostipa comata*), and Indian rice grass (*Oryzopsis hymenoides*). Such grasses are referred to as “perennial” because plants survive over multiple seasons, and with proper management, they can develop deep root systems for surviving drought.

The balance between shrub and grass dominance in the Sagebrush Grassland zone depends upon the timing and overall amount of precipitation, land use history, and grazing practices. More abundant precipitation favors bunchgrasses, particularly if it occurs as rainfall in summer months (i.e., a more monsoonal climate). Over-grazing favors shrubs of low palatability, such as big sagebrush and can lead to an increase in bare ground.

Invasion by exotic plant species such as cheatgrass (*Bromus tectorum*) is also prevalent in this vegetation zone and can be exacerbated by overgrazing. Because it dries out in early summer and becomes highly flammable, cheatgrass changes the fire frequencies in sagebrush communities from 50 or more years to 10 or fewer years between burns. After a few fires, slow-growing, fire intolerant shrubs are eliminated, perennial grass species decline, and a cheatgrass monoculture becomes established. Such a vegetation type is of little use to wildlife, wild horses or livestock.

### Riparian Zones

The mountain ranges of the Great Basin are dissected by innumerable canyons, which often contain Sagebrush Grassland vegetation at their bottoms. Riparian plant communities occur where perennial streams flow through canyon bottoms. Such communities may be dominated by grassy meadows, shrubs, or trees, depending upon the physical setting, geology, flood regime, and history of human disturbance characteristic of a particular canyon. Narrow stringers of flood-adapted tree and shrub species occur along steep, confined reaches. Stately groves of quaking aspen (*Populus tremuloides*) and narrowleaf cottonwood (*Populus angustifolia*) can be found in deep canyons of some of the mountain ranges within the EYDO. Common shrubs of the Great Basin riparian zone include water birch (*Betula occidentalis*), wild rose (*Rosa woodsii*) and several willow species (*Salix* spp.) Finally, geomorphic features such as debris fans sometimes create areas of elevated water tables in the riparian zone, giving rise to springs and wet meadows dominated by graminoids (grasses, sedges and rushes).

### Pinyon-Juniper Woodland

Above the canyon floors lies the Pinyon-Juniper Woodland, often a broad belt that begins at the margin of mountain and valley and extends upwards to approximately 7000 feet in elevation. Development of substantial tree cover generally requires annual precipitation of at least 12 inches. This zone is typically a complex mosaic of shrub- and tree-dominated patches, intergrading into mountain shrub communities at higher elevations and on north-facing aspects. Dominant tree species are singleleaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*).

### Mountain Shrub

Many of the mountain ranges within the EYDO lack subalpine forest vegetation. Instead, Pinyon-Juniper Woodland gives way to a diverse Mountain Shrub community at higher elevations and on moister sites. The Mountain Shrub community occurs as a band above the cold tolerance limit of pinyon and juniper, over extensive areas in the EYDO between 7,500 and 10,000 feet in elevation. Mountain big sagebrush (*Artemisia tridentata* subsp. *vaseyana*) dominates mountain shrub communities together with a diverse mixture of other shrub species, grasses, and flowering herbaceous plants. Many important shrub species in this vegetation type are members of the rose family, including bitterbrush, cliffrose (*Purshia mexicana* var. *stansburiana*), western serviceberry (*Amelanchier alnifolia*), dwarf ninebark (*Physocarpus alternans*), western chokecherry (*Prunus virginiana* var. *demissa*), and wild rose. Interspersed within the montane sagebrush grassland are patches of curleaf mountain mahogany (*Cercocarpus lediofolius*) along ridge tops and groves of quaking aspen in canyon bottoms and bedrock hollows.

Lower temperatures and higher precipitation allow the mountain shrub communities to be much more productive than structurally similar sagebrush communities at lower elevations. As a result, they provide abundant forage for a great number of animal species. Mule deer, pronghorn, bighorn sheep, and elk undertake seasonal migrations up the mountains in summer and early fall where they concentrate their foraging activities in mountain shrub communities. Several of the shrub and tree species (bitterbrush, cliffrose, mountain mahogany, aspen) are preferred mule deer food sources.

### Federally Listed and Special Status Species

The Ely District contains one federally listed plant species, the threatened Ute ladies'-tresses (*Spiranthes diluvialis*).

In addition to federally listed species, BLM also protects by policy (see BLM Manual 6840), other special status plant species, most notably species designated as "sensitive" by the Nevada BLM State Director. Table 6 identifies those sensitive plant species for the EYDO.

Table 6: EYDO SSS Plants

Scientific Name	Common Name
<i>Arctomecon merriamii</i>	White bearpoppy
<i>Asclepias eastwoodiana</i>	Eastwood milkweed
<i>Astragalus calycosus</i> var. <i>monophyllidius</i>	Torrey milkvetch
<i>Astragalus ensiformis</i> var. <i>gracilior</i>	Veyo milkvetch
<i>Astragalus eurylobus</i>	Needle Mountains milkvetch
<i>Astragalus geyeri</i> var. <i>triquetrus</i>	Threecorner milkvetch
<i>Astragalus lentiginosus</i> var. <i>stramineus</i>	Straw milkvetch
<i>Astragalus oophorus</i> var. <i>lonchocalyx</i>	Long-calyx eggvetch
<i>Astragalus uncialis</i>	Currant milkvetch
<i>Botrychium crenulatum</i>	Dainty moonwort
<i>Castilleja salsuginosa</i>	Monte Neva paintbrush

Scientific Name	Common Name
<i>Cymopterus basalticus</i>	Intermountain wavewing
<i>Epilobium nevadense</i>	Nevada willowherb
<i>Ericameria cervina</i>	Antelope Canyon goldenbush
<i>Erigeron ovinus</i>	Sheep fleabane
<i>Eriogonum corymbosum</i> var. <i>nilesii</i>	Las Vegas buckwheat
<i>Eriogonum pharnaceoides</i> var. <i>cervinum</i>	Deer Lodge buckwheat
<i>Eriogonum microthecum</i> var. <i>phoeniceum</i> ( <i>Eriogonum microthecum</i> var. <i>arceuthinum</i> )	Scarlet buckwheat
<i>Eriogonum viscidulum</i>	Sticky buckwheat
<i>Frasera gypsicola</i>	Sunnyside green gentian
<i>Grusonia pulchella</i>	Sand cholla
<i>Ivesia arizonica</i> var. <i>saxosa</i>	Rock purpusia
<i>Jamesia tetrapetala</i>	Waxflower
<i>Lewisia maguirei</i>	Maquire's bitterroot
<i>Mentzelia argillicola</i>	Pioche blazingstar
<i>Mentzelia tiehmii</i>	Tiehm blazingstar
<i>Penstemon concinnus</i>	Tunnel Springs beardtongue
<i>Penstemon leiophyllus</i> var. <i>francisci-pennellii</i>	Pennell beardtongue
<i>Phacelia parishii</i>	Parish phacelia
<i>Sclerocactus blainei</i>	Blaine pincushion
<i>Sclerocactus pubispinus</i>	Great Basin fishhook cactus
<i>Sclerocactus schlesseri</i>	Schlessler pincushion
<i>Silene nachlingerae</i>	Nachlinger catchfly
<i>Sisyrinchium radicum</i>	St. George blue-eyed grass
<i>Sphaeralcea caespitosa</i> var. <i>williamsiae</i>	Railroad Valley globemallow
<i>Trifolium andinum</i> var. <i>podocephalum</i>	Currant Summit clover
<i>Viola lithion</i>	Rock violet

## 1. Environmental Consequences of the Proposed Action

Any action in listed species habitat would be subject to Section 7 consultation under the Endangered Species Act with the level of consultation to be determined based upon the project site specific proposed action. BLM would complete consultation prior to signing a decision for any specific action which may have an effect on a listed species.

To survive, perennial plants must accumulate both above ground (shoot growth) and below ground (root growth) biomass through the process of photosynthesis, transpiration, and respiration (Howery 1999). Excessive removal of above ground biomass during the growing season reduces root growth. A healthy root system is paramount in the growth of any range plant, especially during dry years when competition for water and nutrients is most severe (Bedell and Ganskopp 1980). Proper use of range forage allows plants to survive dry periods, recover quickly, and provide cover to protect the soil and promote water infiltration (Hanselka and White 1986). Rangeland conditions and vegetation types vary throughout the EYDO. Differences in vegetation communities and the condition of those communities would determine their ability to withstand drought. The Proposed Action defines drought response triggers for each major vegetation community known to occur within the EYDO. The utilization triggers were developed using the utilization guidelines proved by Holechek et al. (1988) and would be used to activate DRAs to ensure that proper utilization occurs for each vegetation type within the EYDO.

The degree to which drought impairs the range's potential for future forage production depends on the intensity, frequency and timing of grazing (Howery 1999). The DRAs described in the Proposed Action would implement management strategies intended to limit the impacts of

livestock and wild horses on vegetation including special status species during drought. BLM would implement these actions in combination or separately once drought response triggers are met.

The concentrated use of preferred areas in the landscape results in uneven distribution of animal impact, and drought compounds the effects of herbivory, providing periods of accelerated deterioration (Teague et al. 2004). Many of the DRAs described within the Proposed Action are designed to improve livestock distribution and prevent the overuse of vegetation during drought. DRAs intended to improve livestock distribution include temporary range improvement projects; change in livestock management practices; and temporary change in kind or class of livestock.

Temporary range improvement projects such as water hauls, above ground pipelines or electric fences would result in a temporary congregation of livestock and/or wild horses within certain areas (i.e., the immediate area near the improvement) but would improve the overall distribution of livestock and/or wild horses. This would limit the overuse of vegetation by evenly distributing grazing pressure. BLM would monitor livestock and wild horse use around temporary improvement projects. Once utilization triggers are met, BLM would remove the temporary projects from the area. In circumstances where wild horses are the primary grazers, BLM would assess conditions to determine if an adequate amount of forage and water remain to support the animals. The use of temporary water hauls and/or temporary above ground pipelines would only be used when it is determined that adequate forage resources exist to allow for continued grazing of an area in a manner that would not further impact rangeland resources. Temporary electric fences would facilitate targeted grazing within monotypic annual plant communities. BLM could also use temporary electric fences to exclude livestock from critical areas such as riparian areas, meadows, critical areas for wildlife or areas where sensitive plant species are likely to occur.

Changes in livestock management practices such as strategic placement of salt and/or mineral supplements increased herding and concentrating livestock into a single heard can be used to improve livestock distribution. Strategic placement of low moisture blocks is effective in attracting cattle to graze high and rugged rangeland (Bailey et. al 2008a). Low-stress herding is effective in focusing grazing in an area that typically receives little grazing use (Bailey et. al 2008b). Bradford (1998) observed that managing with a single herd strongly affects livestock distribution and grazing patterns. It was found that “bunching” the cattle created a more even utilization pattern and resulted in cattle moving into areas that had not been used before.

A temporary change in kind or class of livestock can provide opportunities to improve livestock distribution and protect vegetation from over utilization. Yearling cattle utilize pastures more uniformly over variable terrain than cows with calves or mixed classes; cows and calves utilize forages nearest the water much more heavily than yearlings (Volesky et al. 1980). Selecting yearlings would improve grazing distribution and limit impacts to riparian areas. Choosing a different kind of livestock would also affect how a range can be utilized. With their large mouths, cattle and horses may not select annual grasses as readily as sheep or goats because livestock prefer plants they can eat quickly and efficiently. Sheep or goats can get a full bite of annual grasses more easily than cattle or horses, especially when annual grass plants are small (Peischel and Henry 2006). Sheep and goats can be herded more effectively which allows for greater control and provides an opportunity to limit impacts to critical areas such as riparian areas, meadows, aspen stands, critical wildlife habitat etc.

During drought, growth slows and plants should be rested longer (Hanselka and White 1986). A significant impact of drought on rangelands is a severe reduction in herbage production (Bedell

and Ganskopp 1980). DRAs that address timing, duration and stocking rate have been developed. These include change in season of use, change in grazing duration, partial reduction in AUMs, partial or complete closure of an allotment(s), and wild horse removal from drought afflicted areas.



A winterfat ( <i>Krascheninnikovia lanata</i> ) site during drought in 2000. Note lack of production of the vegetation.	The same monitoring location the following year following normal precipitation.
---	---

Changing the season of use in which livestock are grazed can reduce grazing impacts during drought. Excessive removal of plant material during the growing season reduces root growth and replacement; thereby, reducing a plant’s ability to harvest solar energy and soil moisture needed for maintenance and growth (Howery 1999). BLM would select the specific season of use chosen dependent upon local conditions. In most areas, shifting the season of use to a time that is outside of the critical growth period would allow forage plants to take full advantage of available soil moisture and nutrients. Permitted livestock can then graze plants after sufficient growth or dormancy occurs. In areas dominated by cheatgrass, spring grazing, and/or fall grazing may be appropriate to take advantage of the annual forage while it is green.

Reductions in grazing duration are often needed during drought to protect rangeland resources from degradation. Grazing durations, as currently permitted, could result in plants being grazed multiple times. Plants that are grazed repeatedly may have little or no opportunity to regrow between successive defoliations and may become stressed (Howery 1999). Reduced grazing durations would provide for an increased amount of rest for plants already stressed by drought and lead to an increase in ground cover and protection from soil erosion.

BLM could use targeted grazing of cheatgrass and other non-native annual species to provide forage while providing rest for native species and reduce undesirable plants and hazardous fine fuels. Annual bromes such as cheatgrass can provide a valuable forage resource under drought conditions (Reece et al. 1991). Targeted livestock grazing can help reduce fire hazards by disrupting fine fuel continuity and reducing fuel loads (Peischel and Henry 2006). According to Reece et al. (1991), moderate defoliation of annual species can enhance the production of perennial grasses by reducing plant competition and minimizing soil moisture depletion.

BLM may use partial reduction in AUMs, partial closure of an allotment, and wild horse removal to match stocking rates to forage supply and water availability. Drought often results in a reduction of forage and water resources. If it is determined that forage and/or water supplies are not sufficient to provide for livestock and/or wild horses, temporary AUM reductions could occur. DRAs intended to improve livestock and/or wild horse distribution are only viable when adequate resources exist within an allotment or HMA. A continuation of current stocking rates would result in overutilization of plants and degradation of rangeland resources. Heavy use of plants during drought results in permanent damage and high death loss of forage plants (Hanselka and White 1986). If necessary a drought gather could occur. Some disturbance to vegetation as a result of a drought gather would occur localized the gather trap and holding corrals. However, overall improvement and/or maintenance of vegetation is expected to occur due to a decrease in use (matching animal population to forage supply) and improved distribution as a result of fewer animal numbers.

## **2. Environmental Consequences of the Grazing Closure Alternative**

The Grazing Closure Alternative would provide rest for all areas afflicted by drought. Resting these areas would allow vegetation to take full advantage of available soil moisture and nutrients without interruption. Protection of range plants during drought years allows for fast recovery following a drought (Howery 1999). The Grazing Closure Alternative would remove livestock grazing from the public lands to eliminate the adverse impacts of grazing during the drought and provide one growing season of rest for plant recovery following the cessation of the drought.

The Grazing Closure Alternative would not provide for the targeted grazing of invasive annual species and would limit the BLM's opportunity to reduce the vigor of invasive species that may compete with native vegetation. Closing drought-afflicted areas to livestock grazing under this Alternative would prevent degradation of rangeland resources and protect upland and riparian vegetation communities as well as sensitive plant species during drought. This would have long-term beneficial impacts to vegetation within the EYDO.

## **3. Environmental Consequences of the No Action Alternative**

“It is obvious that when it comes to drought, it is not a question if drought will occur, but rather when it will occur, how long will it last, and are we prepared?” (Howery 1999). Drought or water stress affects virtually every physiological and biochemical process in plants (Hanselka and White 1986). Grazing management practices before, during, and following a drought would influence the ability of native rangeland vegetation to recover (Encinias and Smallidge 2009). Lagged responses toward drought pose a threat to sustainable management of rangelands (Thurow and Taylor 1999). The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and potentially result in a continuation of current management practices, which are often poorly suited to drought. Livestock and wild horses would be concentrated around remaining water sources and riparian areas. This would result in an uneven or patchy distribution of grazing pressure with areas of heavy use, leaving other

areas far from water unused. Without the prompt implementation of management strategies, improper livestock and wild horse use can compound the effects of drought. The No Action Alternative would negatively impact vegetation resources within the EYD directly affecting the present condition and limiting the ability of vegetation to survive and recover from dry periods in future years. Unsustainable range use can cause an increase in the frequency and consequences of drought (Thurow and Taylor 1999). Hanselka and White (1986) found that weakened root systems affect the ability of plants to pull moisture from the soil and that closely grazed plants will permanently wilt when there is still 6-8 percent moisture in the soil.

## N. Wild Horses

### Affected Environment

The EYDO administers 6 Herd Management Areas (HMAs) encompassing over 3.7 million acres of public lands. The EYDO also cooperatively manages two US Forest Service Wild Horse Territories (WHT), and manages five HMA's as complexes with neighboring BLM districts. The 2012 estimated population within the EYDO is approximately 3,158 wild horses. The following table outlines population estimates per HMA administered by the EYDO. HMAs are land areas designated through the Land Use planning process for the long term management of wild horses. The EYDO does not manage for any wild burros.

Table 7: EYDO Wild Horse Herd Management Areas Populations effective March 1, 2013

Herd Area Number	Herd Management Area Name	Estimated Total Acres	AML	Population Estimate
401	Antelope (HMAP)	331,000	150-324	344

The EYDO also has horses in 16 Herd Areas which encompasses over 1.8 million acres. The EYDO established 15 herd areas through the Ely District ROD and Approved Resource Management Plan (August 2008) at management action WH-5 states: "Remove wild horses and drop herd management area status for those ... as listed in Table 13." The BLM changed the Mormon Mountains from HMA status to HA status in the 2000 Approved Caliente Management Framework Plan (MFP) Amendment and Record of Decision for the Management of Desert Tortoise Habitat.

The management action of wild horses within these HAs reflects the recent evaluation using multi-tiered analysis from the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) table 3.8-2 and page 4.8-2. The EIS (November 2007) evaluated each herd management area for five essential habitat components and herd characteristics: forage, water, cover, space, and reproductive viability. If one or more of these components were missing or there was no potential for a stable shared genetic pool, BLM considered the herd management area as unsuitable.

The 2012 estimated population of wild horses in herd areas within the EYDO is approximately 708 wild horses. The following table outlines population estimates per HAs administered by the EYDO.

Ely District Wild Horse Herd Areas				
Herd Area Number	Herd Area Name	Estimated Total Acres	AML	Population Estimate
406	Cherry Creek	27,448	0	27

\*Combined into the Silver King HMA

In drought years, reduced winter snow and spring precipitation limits the recharge of springs and streams, as well as the overall availability of water to wild horses. HMAs/HAs vary widely in the abundance and productivity of water sources. Some HMAs/HAs have many productive water sources available that drought marginally impacts. Other HMAs/HAs have few water sources or water sources that are more reactive to drought. The number and productivity of waters in relation to the population of wild horses is an important consideration as well. The effects of drought in HMAs/HAs that are over AML and support limited waters would be more substantial when compared to HMAs/HAs with normally plentiful water and populations within AML.

**Aarby Spring Antelope Valley HMA 2012**



**Pot Spring Triple B HMA 2011**



**During drought periods, water sources and range improvements receive heavier use due to the lack of water resources and the amount of water produced from a source. The heavy use typically leaves a negative impact on the spring source or associated range improvements.**

Wild horses travel between water sources and foraging areas. They usually travel several miles back and forth from water and forage. During drought years, forage productivity can be a fraction of normal. In areas where forage is limited and/or wild horses are overpopulated, animals have to move increasing distances from water to obtain adequate forage and go into less desirable areas that support lower quality forage.

In general, wild horses are very resilient and adaptable animals with a metabolism that has evolved to allow them to survive and thrive in poor quality habitat (compared to their domestic counterparts). These wild animals are typically in top physical condition, have strong bones and hooves, and rarely succumb to ailments that plague domestic horses. Wild horses typically do not begin to show signs of body condition decline until the habitat components are severely deficient. Once the decline begins, their health deteriorates rapidly. As the horses consume the resources, and travel distances become longer the animals deteriorate in body condition.

The health of the range and the recovery of the vegetation and waters from drought are also concerns. With reduced productivity of rangeland forage plants, the existing population of animals can cause excessive utilization of the range especially where populations of wild horses are above the AML. Wild horses also cause damage through excessive trailing and hoof action,

which causes destruction of vegetation and increases erosion and trampling of riparian areas; thereby, causing bank shear, contaminating water quality and affecting riparian function.

The majority of wild horse foals are born annually between March 1 and July 1. Throughout the EYDO, populations increase by 10-22% annually. Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes and do not have the ability to self-regulate their population size. Predation and disease have not substantially regulated wild horse population levels. Throughout the EYDO, there are few predators to control wild horse populations. Some mountain lion predation occurs, but expert opinion is that it is not substantial. Coyote are not prone to prey on wild horses unless young or extremely weak. Other predators such as wolves or bears do not exist.

The BLM is responsible for the protection, management, and control of wild horses on public lands in accordance with the WFRHBA as amended (Public Law 92-195 Act) which states that BLM, "...shall manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a TNEB on the public lands."

BLM collects monitoring data annually within EYDO HMAs. During times of drought the focus of monitoring is on the assessment of forage and water availability for wild horses (see DDMP, Attachment 2). Reduced precipitation associated with drought often results in substantially reduced forage growth and a lack of water due to reduced flows and/or drying up of springs and streams. These factors typically lead to concentrated wild horse use on riparian areas, resource degradation and ultimately the reduced health and/or death of wild horses. When a drought occurs the EYDO would collect site-specific data and consider wild horse population levels and past drought related issues to select appropriate DRAs.

## **1. Environmental Consequences of the Proposed Action**

### **A. Drought Response Actions**

#### **1. Livestock**

The BLM developed DRAs identified within the Proposed Action, in order to reduce the impacts of authorized uses and activities on natural resources that are at risk of adverse drought effects. The DRAs pertaining to livestock management would have minimal direct impacts on wild horses. Actions implemented within HMAs/HAs would indirectly affect wild horses. Temporary water hauls, or pipelines would improve distribution of livestock and wild horses as well as reduce impacts to drought affected water sources.

Additionally, the DRAs implemented within HMAs/HAs would indirectly affect wild horses by reducing competition among wild horses, wildlife and livestock as additional water sources would be available to offset the reduced water supply due to drought.

Changes in season of livestock use, grazing duration or livestock management practices would also result in indirect effects to wild horses. The moderation of utilization levels, improvement of distribution and protection of forage resources from concentrated use would ensure the long term productivity and health of the range. The degree to which drought impairs the range's potential for future forage production depends on the intensity, frequency and timing of grazing (Howery 1999). Therefore the aforementioned DRAs would also provide for quicker recovery from drought.

The DRAs also include reductions in livestock AUMs and the partial or complete closure of an allotment(s). Pursuant to 43 CFR §4170.5(a), the authorized officer may close appropriate

areas of the public lands inhabited by wild horses if necessary to protect for wild horses. These actions implemented either separately or in combination with other DRAs would help ensure that adequate forage and water are available for wild horses and wildlife. Additionally, these DRAs would promote the recovery of rangelands afflicted by drought.

Other actions include temporary fencing, targeted livestock grazing of monotypic invasive annual communities and change of class of livestock, which would have minimal indirect effects to wild horses, and would ultimately benefit forage and riparian resources both in the short and long term.

## **2. Wild Horse Response Actions**

### **Temporary Water Hauls**

In order to augment water sources for wild horses until BLM could complete a drought gather or until normal precipitation and water availability resume, BLM could authorize temporary water hauls at select locations within HMAs/HAs or at existing water sources. Large (500 gallon or larger) water trucks or trailers would be used to replenish waters in tanks, ponds or other available catchments. In most cases, BLM would use existing roads, and place water haul tanks in disturbed locations following a cultural resources inventory. Where possible, BLM would place supplemental water troughs on existing wild horse trails to encourage use. All water troughs would be equipped with bird ladders to protect avian species.

One could expect minor soil disturbance depending upon the number of animals using the water source. BLM does not expect adverse impacts to wild horses; however, temporary water hauls would help maintain animal health and aid in preventing death due to dehydration. The use of water hauls would continue until natural or developed water becomes available that is adequate to support the existing population, or a drought gather occurs to reduce the existing population to levels that can be sustained with the existing resources.

### **Wild Horse Removal**

If BLM determines that wild horse removal is warranted, BLM would address the presence of livestock within the HMA prior to the commencement of a gather. The removal of excess and drought affected animals would improve herd health and prevent widespread suffering and death of individual wild horses or wild horse populations. Decreased competition for remaining forage and water resources would reduce stress and promote healthier animals, as the actual population numbers balance with available forage and water resources.

Further deterioration of drought stressed rangeland and riparian resources would be avoided which would also promote range recovery (and healthy animals) over the long-term. The following discussion outlines the impacts of specific elements of gathers on wild horses.

### **Helicopter Capture**

The BLM has been gathering excess wild horses from public lands since 1975. Since 2004, BLM Nevada has gathered over 26,000 excess animals. Of these, mortality has averaged only 0.5%, which is very low when handling wild animals. BLM humanely euthanized another 0.6% of the animals captured due to pre-existing conditions and in accordance with BLM policy. 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 from the range. BLM staff is on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor. BLM would conduct gathers in a safe and humane manner,

and to minimize potential impact or injury to the wild horses. In their August 2012 BLM Task Force Report, the American Association of Equine Practitioners concluded that the care, handling and management practices utilized by the BLM are appropriate for this population of horses and generally support the safety, health and welfare of the animals.

Over the past 35 years, BLM has observed various impacts to wild horses from gathers. Individual, direct impacts 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. Observations made through the completion of gathers show that the majority of the wild horses captured acclimate quickly to the holding corral environment, and become accustomed to water tanks and hay, as well as to human presence. The BLM Wild Horse and Burro Specialists and the gather contractor and crew are very attentive to the needs of all animals captured during gathers, ensuring their health and safety.

Accidental death or the need to humanely euthanize animals as a direct result of gather activities is infrequent and averages less than one half to one percent of the animals gathered (0.5-1.0%). 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. Rarely, wild horses could encounter barbed wire fences and receive wire cuts. These injuries are generally not fatal and BLM staff treats the animals with initial medical care at the holding corrals until a veterinarian can examine the animal. On some gathers, injuries to horses occur more frequently due to animal temperament and/or body condition. However, on other gathers, no animals are injured or die.

Most injuries horses sustain occur once BLM has captured the animal and occur within the gather corrals, holding corrals, or during sorting. These injuries result from kicks and bites or from collisions with corral panels or gates. Transport and sorting is 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. Wild horses could sustain similar injuries if they 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.

During summer gathers, environmental conditions come into play as the temperatures are higher, roads and corrals dusty, and water more limited on the range. During times of drought, water could be greatly limited or nearly non-existent. Animals could have to travel long distances to find water, which may lead to animal dehydration or water stress. The exertion of a gather can exacerbate already debilitated conditions, leading to heat exhaustion or other complications. Wild horses may be located at higher elevations and in areas with dense tree cover during summer months, increasing the difficulty of the gather. The helicopter pilot, regardless of season, allows horses to travel slowly at their own pace. During gathers of drought affected animals, the pace would be slowed to allow weak or debilitated animals to travel to the trap corrals as a group. If necessary, crew members may be instructed to capture the animals by roping and loading the animals into stock trailers for transport in order to reduce the stress on the animals. Weak mares and small foals are especially vulnerable to drought stress and may become weak; therefore, extra care would be taken to ensure their safe capture and recovery.

Heat stress does not occur often but if it does, death may result. If wild horses are in a weakened state due to a shortage of water or forage, higher mortality could occur. In these cases, the BLM

would take extra precautions to ensure the safe capture and post-gather care of these animals. Special care would be taken to ensure the health of the animals by limiting the distance horses must travel to a trap, not gathering during the heat of the day, etc... An Animal Plant Health Inspection Service (APHIS) veterinarian or other contract veterinarian would be available to examine animal condition and provide recommendations for care. BLM may add electrolytes to the drinking water during summer gathers that involve animals in weakened condition.

The BLM and the contractor are also proactive in controlling dust in and around the holding facility and gather corrals. These areas are sprayed down to reduce dust and limit wild horse exposure to dust during summer months. Additionally, moderate travel speeds on roads reduce dust exposure during transport. BLM could spray the horses in an effort to reduce body temperature and improve overall comfort of the horses. In cases of extreme heat, the gather operations would be suspended once high temperatures are reached. Temperatures vary across the EYDO on a daily basis during summer months. During summer gathers, operations often conclude between noon and two pm, and can be suspended earlier if the COR deems it necessary to ensure animal health.

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 be held off of full 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 individual impacts are those impacts that occur to individual animals after the initial stress event. These impacts, like direct individual impacts, are known to occur intermittently during gather operations. An example of an indirect individual impact would be a brief skirmish amongst older stallions following sorting and release into the stud pen. Traumatic injuries usually do not result from these conflicts. Spontaneous abortion events among mares following capture is very rare. Observations following capture indicate the rate of miscarriage varies, but can occur in about one to five percent of the captured mares, particularly if the mares are in very thin body condition or in poor health.

Through the capture and sorting process, BLM examines wild horses for health, injury and other defects. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals should be euthanized (refer to SOPs in Appendix A of Attachment 2). Animals that are euthanized for non-gather related reasons include those with old injuries (e.g., broken hip or leg) that have caused the animal to suffer from pain or prevents them from being able to travel or maintain adequate body condition; old animals that have lived a successful life on the range, but now have few teeth remaining, are in poor body condition, or are weak from old age; and wild horses that have congenital (genetic) or serious physical defects such as club foot or sway back. During drought situations animals could be gathered that could be severely debilitated or emaciated and following examination, the APHIS could determine that the animal would unlikely recover and should be euthanized as a humane act of mercy.

It should be noted that drought gathers are not intended to be a mechanism to achieve TNEB or meet long-term management goals (e.g., managing healthy wild horses within the productive capacity of the range). However, not all HMAs/HAs within the EYDO are within their AML range. Additionally, extreme drought conditions could warrant action within HMAs that are within their AML. It is the intent of BLM to intervene during drought or other emergencies to

remove wild horses if necessary, before body condition declines and animals become weak from starvation or dehydration.

Unless emergency conditions exist, the BLM does not gather wild horses by helicopter during the foaling season. (i.e., the six weeks before or after the peak of foaling (April and mid-May)). Most foals are born during the aforementioned period, however, it is not uncommon for a very small number of wild horse foals to be encountered during any month of the year. If foals too young to wean are gathered, they are matched up with the dams. In summer months, young foals may be more prone to dehydration and complications from heat stress. Additionally, the handling, sorting, and transport can be stressful for young animals; however, on-site BLM staff is attentive to the condition and needs of the animals and take precautions to limit stress.

On occasion, foals become orphaned during a gather, or 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. BLM makes every effort to provide appropriate care to orphaned foals. Veterinarians could administer electrolyte solutions to aid in hydration and overall health or orphan foals be fed milk replacer as needed to support their nutritional needs. BLM could place orphaned foals in a foster home to receive additional care. Although fostering is usually successful, despite these efforts, some orphaned foals could die or be humanely euthanized as an act of mercy if the prognosis for survival is very poor.

### **Bait or Water Trapping**

In cases where water is the most limiting factor, it may be practical to remove wild horses through water trapping. BLM could use hay or supplements to trap animals targeted for removal due to drought conditions. Impacts of this method of removal are similar to impacts of helicopter gathers and include ground disturbance at the trap location, and minor displacement of wildlife. BLM would place the traps on disturbed locations when possible after an archeologist conducts a survey. In the case of water trapping, BLM would place the pens 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 to remove drought affected animals verses the use of a helicopter which would be accomplished in a matter of days. As a result, animals debilitated from lack of forage and water would persist for a longer time before being gathered and cared for properly.

Injuries to wild horses through bait or water trapping are similar to those described for helicopter removals. Animals would not endure the exertion from being herded several miles to a trap location (by helicopter) but may experience injuries associated with bites and kicks while in the trap, during loading into stock trailers and transportation to BLM preparation facilities. If foals enter the trap with adult animals, they could be injured or killed by adult wild horses 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.

BLM would accomplish bait and water trapping through the gate cut method, and not return wild horses to the range. The effects would be similar to those described for gate cut removals below. BLM could employ various removal strategies with the use of bait or water trapping as described in the section titled "Removal Numbers".

### **Wild Horses Remaining (or Released into the HMAs following complete removal)**

Following a wild horse drought gather, deterioration of the range would be reduced (associated with wild horses) and rangelands would have the opportunity to recover from the impacts of drought. Protecting rangeland resources from severe use during drought would improve sustainability and enhance resiliency so that rangelands can support future generations of healthy wild horses. Goals of a drought gather would include: the management of wild horse populations in balance with the available forage and water resources and other rangeland uses, and allowing individual animals to better maintain optimum body weight and overall health during future drought years. This would lessen the potential for effects on individual animals and/or herds by drought, and avoid or minimize the need for future emergency actions.

Depending upon the gather objectives, some wild horses (whether escaped from capture or intentionally left undisturbed) would remain on the range following the gather. The wild horses that BLM does not capture may be temporarily disturbed and moved to another area during gather operations. Over the last 20 years, Researchers have proven that, with the exception of changes to herd demographics, direct population-wide impacts are usually temporary in nature and most if not all impacts to individual wild horses disappear within hours to several days after the gather is completed. BLM would not expect observable effects associated with these impacts within one month of release except for a potential heightened awareness of human presence.

Primary direct impacts to the wild horse populations related to gather activities include changes to herd population dynamics, age structure, and/or sex ratio, and subsequent changes to growth rates and population size over time.

BLM would use site-specific data to determine the need for a drought gather. They would thoroughly document justification for a drought gather within a site-specific decision and gather plan. Should it be determined that a drought gather is necessary, HMA/HA-specific gather and removal objectives would be developed based on detailed environmental and animal conditions. This information would be included in the decision and gather plan issued prior to the gather commencing. Depending on the gather objectives, one could expect numerous outcomes. BLM discusses these by gather type below.

### **Gate Cut**

BLM would gather and remove wild horses as encountered until removal and post-gather population objectives were achieved. Typically few or no wild horses would be released and no population controls implemented. The animals may be removed from specific portions of an HMA/HA or Complex where resources are most limiting, leaving all animals in the remainder of the HMA/HA alone. A gate cut removal would be typical in emergency cases or in a herd area where BLM would not release horses back into the area.

BLM would expect minimal impacts to wild horses that are not gathered 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 un-gathered 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, but based upon population monitoring should be comparable to pre-gather conditions.

Utilizing the gate cut method could distort the distribution within an HMA 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). In the case of drought gathers, the emphasis for gather and removal would be for the horses 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 HMA/HA to avoid disproportionate removal.

Because BLM would not release many wild horses back onto the range, adjustment to sex ratios or application of fertility control would not be likely. BLM would not hold wild horses at the holding corrals for extended lengths of time while waiting to apply fertility control, and horses would not be stressed by additional handling to apply fertility control.

### **Removal Numbers**

Because site-specific data would be evaluated prior to conducting a drought gather, removal numbers would be detailed in the site-specific decision and gather plan. The following scenarios are provided for analysis:

Removal of sufficient numbers of animals to achieve the low range of AML

Under this strategy, BLM would remove only sufficient numbers of wild horses to achieve the low range of AML for applicable, drought affected HMAs/HAs. This strategy is consistent with most gathers conducted throughout the District, where BLM removes excess wild horses to low AML and through the following years BLM allows the population to increase to the high AML at which time another gather is scheduled. All HMAs/HAs in the EYDO have had gathers completed within the past 10 years. BLM completed comprehensive EAs, which analyzed environmental impacts of the gathers, for each gather conducted. If BLM determines the need for a drought gather(s), BLM would provide site-specific details in the decision, and gather plan documents for the drought gather(s).

### **Removal of animals to a point below the low AML**

Removal of wild horses to achieve a population below the low AML would occur when drought severely limits water and forage resources and BLM determines the need to remove for animals to prevent further suffering or death. HMA-specific data and animal health analysis would be used to estimate how many animals could be supported on the range, and where animals should be removed to ensure animal health and resource recovery. This data along with other site-specific data would be included in a site-specific Decision and gather plan.

In order to safeguard genetic variability of the animals remaining on the range, BLM would consider genetic analysis of the horses within an HMA as well as known movement between HMAs. Due to the number of animals that BLM could remove under this option, genetic variability could be negatively impacted. However, the immediate welfare of the wild horses and their habitat take precedence over the long-term genetic variability. BLM would collect hair samples for genetic analysis, and should future analysis indicate that BLM needs to take action to enhance or maintain the genetic variability of the herd; BLM would develop a strategy to address the specific issues. Strategies may include introducing animals from one HMA into another.

BLM would not permanently adjust AML. BLM would allow the population to increase to the high AML before BLM scheduled another gather, as long as resource conditions and animal health allow such growth.

### **Complete removal of all animals in an HMA**

BLM would employ this option only under extreme circumstances and is, therefore, unlikely in an HMA. To achieve management objectives the complete removal would be likely for an HA. BLM would make the decision to remove all animals after analysis of the environmental and animal data, and only done in an HMA/HA in order to prevent suffering of animals due to the absence of forage and/or water and reduce negative impacts to rangeland resources. It is possible that a portion of the animals could be held in a contract facility until conditions recover and then be returned to the range. It may also be possible to gather animals and release them into another HMA that has adequate resources to support additional animals. If it is determined that resources are adequate, BLM could repopulate the HMA in future years with horses transplanted from another HMA.

In the extreme case of a complete removal of animals from an HMA, one could expect impacts to the genetic health of the wild horses. BLM cannot quantify the exact impacts, as each wild horse herd has specific genetics and the herds are comprised of animals of diverse characteristics and genetic backgrounds. If BLM were to hold animals in a contract facility and later return them to the HMA, BLM would not expect effects to the genetic variability of the population.

#### Population Growth Controls (Fertility Control treatments and sex ratio adjustments)

BLM could apply fertility control or sex ratio adjustments if conditions warrant the complete removal of all animals within an HMA and those animals are to be returned to the range after drought recover has occurred. Population Growth Controls would not be applied to horses in a HA because the horses would not be released back to the HA. The following discussion analyzes the impacts of population control methods on wild horses:

#### **Fertility Control**

Fertility control would include the application of fertility control drugs to all mares released back to the range. All mares selected for release would be treated with a two-year Porcine Zona Pellucida (PZP) or similar vaccine/fertility control and released back to the range. Immuno-contraceptive (fertility control) treatments would be conducted in accordance with the approved standard operating procedures (SOPs, outlined in Appendix A of Attachment 2).

Each released mare would receive a single dose of the two-year PZP contraceptive vaccine. When injected, PZP (antigen) causes the mare's immune system to produce antibodies; these antibodies bind to the mare's eggs and effectively block sperm binding and fertilization (Zoo Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and can be easily administered in the field. In addition, among mares, PZP contraception appears to be completely reversible. The vaccine has also proven to have no apparent effect on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner et. al, 1997). Available data from 20 years of application to wild horses contradicts the claim that PZP application in wild mares causes mares to foal out of season or late in the year (Kirkpatrick and Turner 2003). The PZP vaccine is currently being used on over 75 HMAs for the BLM and its use is appropriate for all free-ranging wild horse herds. The long-term goal is to reduce or eliminate the need for gathers and removals (Kirkpatrick et al. 2010).

BLM has achieved the highest success for fertility control when applied during the November through February timeframe. The efficacy for the application of the two-year PZP vaccine based on summer application (August through October) is as follows:

Table 8: Fertility Control Efficacy (Effectiveness)

Year 1	Year 2	Year 3	Year 4
Normal	80%	65%	50%

The PZP treatments would be controlled, handled, and administered by a trained BLM employee. Mares receiving the vaccine would experience slightly increased stress levels associated with handling while being vaccinated and freeze-marked. Serious injection site reactions associated with fertility control treatments are rare in treated mares. Any direct impacts associated with fertility control, such as swelling or local reactions at the injection site, would be minor in nature and of short duration. Most mares recover quickly once released back to the HMA, and none are expected to have long term impact from the fertility control injections. Injuries through fighting and other behaviors may occur within the holding pens prior to release, but rarely result in death.

As the sole approach, contraception would not allow the BLM to maintain populations at AML; however, in conjunction with other techniques (e.g., removals of excess animals and adoption) and through incorporation of other population control techniques (e.g., sex ratio adjustments, sterilization), it now provides a valuable tool in a larger, adaptive management approach to wild horse management.

Contraception may be a cost effective and humane treatment to employ in horses to prevent increases in populations, or with other techniques, to reduce horse populations (Bartholow 2004). In general, contraception would not remove horses from an HMA's population which would result in some continuing environmental effects by those individuals. Horses are long-lived reaching 20 years of age in the wild and those horses returned to the HMA could continue exerting, throughout their life span, negative effects on the environment as described above, as opposed to the removal of a horse. Contraception, if effective, reduces future reproduction. Limiting future population increases would limit increases in environmental damage from higher densities of wild horses. It could also reduce the effect of wild horse gather activities on the environment (if it limits the numbers of wild horse gathers required). If application of contraception to wild horses requires capturing and handling horses, the risks and costs associated with capture and handling of horses may be roughly equivalent (not counting the cost of adoption). Application of contraception to older animals and returning them to the HMA may reduce risks associated with horses that are difficult to adopt or handle in captivity.

Ransom et al. (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in three populations of wild horses, which is consistent with Powell's (1999) findings in another population. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom et al.'s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control mares in another population, presumably because the absence of pregnancy and lactation reduced energy expenditure.

In two studies involving a total of four wild horse populations, both Nunez et al. (2009) and Ransom et al. (2010) found that PZP-treated mares were involved in reproductive interactions with stallions more often than control mares, which is not surprising given the evidence that PZP-treated females of other mammal species can regularly demonstrate estrus behavior after receiving contraceptives (Shumake and Wilhelm 1995, Heilmann et al. 1998, Curtis et al. 2002). Ransom et al. (2010) found that control mares were herded by stallions more frequently than PZP-treated mares, and Nunez et al. (2009) found that PZP-treated mares exhibited higher infidelity to their band stallion during the non-breeding season than control mares. Madosky et al. (in press) found this infidelity was also evident during the breeding season in the same population that Nunez et al. (2009) studied, resulting in PZP-treated mares changing bands more frequently

than control mares. Long-term implications of these changes in social behavior are currently unknown. Kirkpatrick et al. (2010) conclude by stating that “the larger question is, even if subtle alterations in behavior may occur, this is still far better than the alternative” and that the “other victory for horses is that every mare prevented from being removed, by virtue of contraception, is a mare that would only be delaying her reproduction rather than being eliminated permanently from the range. This preserves herd genetics, while gathers and adoption do not.” (Kirkpatrick and Turner 2002, 2008; Turner and Kirkpatrick 2002, 2003; Willis et al. 1994.)

Population-wide indirect impacts are more difficult to quantify and would occur over time. A large percentage of inoculated mares would experience reductions in fertility. Recruitment of foals into the population would be reduced over a two-year period. Any multi-year reprieve from foaling would increase overall health and fitness of the mares, as well as the health of the foals born after fertility returns, particularly during times of drought or other environmental stress.

Following resumption of fertility, the proportion of mares that conceive and foal could be increased (rebound effect) due to the increased fitness. Additionally, fertility control treatment could cause breeding and foaling seasons to become “out of sync” with foals born earlier or later in the year, or throughout the year but is generally associated with the timing of the treatment and not the vaccine itself. These effects are based on anecdotal information, and currently undocumented through studies. Research is continuing to document and quantify these effects.

Application of fertility control (and/or adjustment of sex ratios to favor stallions) could increase the intervals between future gathers, and reduce disturbance to individual animals as well as to the herd social structure over the foreseeable future when compared to a gather without implementation of either population growth control method. The BLM could return to these areas every 2-3 years to re-apply fertility control in order to maintain its effectiveness in controlling population growth rates. By completing follow-up gathers on a regular basis (every 2-3 years) in future years, it is possible that the population control measures may be adequate to maintain the population within the existing AMLs if implemented successfully, with the need to remove few if any wild horses from the range. As a result, few horses would need to be removed that might ultimately be held in long term pastures or entered into the sale program as the adoption demand comes into line with the number of excess wild horses removed from the range.

PZP can safely be repeated in 2 years or as necessary to control the population growth rate. The probability of long-term infertility using PZP is very low, and many mares retreated even after 3 years will return to normal fertility after the second treatment wears off.

Fertility control application would allow the average population size to be maintained at a level consistent with the AML. Reduced population growth rates and smaller population sizes would also allow for improvements to range condition, which would have long-term benefits to wild horse habitat quality and contribute to the achievement and maintenance of a TNEB. This would also improve the recovery of the range from the effects of drought as the population grows more slowly and has fewer impacts on the vegetation, waters and other resources, than would occur without the application of population controls.

### **Sex Ratio Adjustment**

If BLM should apply population controls to animals released to the range, sex ratio adjustments could be included as a management option in wild horse herds. Wild horses would be released to increase the post-gather sex ratio to favor stallions in the remaining herds. Stallions would be selected to maintain a diverse age structure, herd characteristics and body type (conformation).

Adjustment of sex ratios to favor stallions would be expected to have relatively minor impacts to overall population dynamics. Impacts of additional stallions in the population could include: decreased band size, increased competition for mares, and increased size and number of bachelor bands. These effects would be slight, as population ratios of 60% stallions to 40% mares are not considered extreme departures from natural sex ratios. Ratios above 60% would be expected to increase fighting among studs, which would be a consequence of removing additional mares in order to prevent widespread death and suffering. Conversely, a selection criterion, which leaves more mares than stallions, would be expected to result in fewer and smaller bachelor bands, increased reproduction on a proportional basis with the herd, and larger band sizes. With more stallions involved in breeding it should result in increased genetic exchange and improvement of genetic health within the herd.

Modification of sex ratios favoring stallions could also reduce growth rates and subsequent population size, as a smaller proportion of the population would consist of mares that are capable of giving birth to foals. As a result, gather frequency could be reduced as well as the number of horses gathered and removed in future gathers.

It is also well accepted that wild stallions maintain body condition and muscling better than wild mares when resources are limiting. This is most often observed during gathers where the population is very high in comparison to the AML and forage or water are lacking. In these cases, mares with suckling foals or young mares 3-4 years of age are often very thin with Henneke Body Condition Scores of 2 or 3. In such cases, it may be possible to release additional stallions (rather than thinner mares) that otherwise would have needed to be held in Long Term Pastures, thus leaving a larger population on the range, albeit at a higher proportion of studs. Release of studs could occur at the time of the gather if it is determined that due to limited resources, the more vulnerable mares and foals should be removed from the range, but that resources are adequate to ensure health of the studs.

Though this could result in sex ratios with higher than 60% studs, the populations would not be so large that competition and fighting among studs would be much higher than normal levels. The sex ratio would eventually even-out over the course of time and could be further corrected in the next gather cycle if necessary. The release of a level of studs above 60% would only occur in extreme cases when it is determined that additional horses could be left on the range rather than be removed.

### **Temporary Holding Facilities during Helicopter Gathers**

BLM would transport gathered wild horses from the gather corrals (a.k.a. trap sites) to a temporary holding corral within the HMAs primarily in goose-neck trailers; however, BLM could also use straight deck semi-trailers. 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 (refer to previous discussion about care of drought stressed animals). BLM would keep mares and their un-weaned foals (if encountered) in pens together.

At the temporary holding facility, recommendations to the 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**

BLM would transport wild horses removed from the range from the capture/temporary holding corrals to the designated BLM short-term holding corral facility(s) in straight deck semi-trailers or goose-neck stock trailers.

BLM Contracting Officer's Representative or Project Inspector would inspect vehicles prior to use to ensure animal safety. BLM would segregate animals by age and sex and loaded into separate compartments. BLM could ship a small number of mares with foals. Transportation of recently captured animals is limited to a maximum of 8 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 wild horses are in extremely poor condition, it is rare for an animal to be seriously injured or to die during transport.

Upon arrival at the short term holding facility, recently captured wild horses 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 short-term holding facility, a veterinarian would examine each load of horses and provide recommendations to the 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. BLM would sort and place wild horses in hospital pens, or fed separately and/or treated for their injuries as indicated for horse in very thin condition or animals with injuries. 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. Some mares may lose their pregnancies. BLM would make every effort to help the mares make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.

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

At short-term corral facilities, a minimum of 700 square feet is provided per animal. Mortality at short-term holding facilities averages approximately 5% per year (GAO-09-77, 2008, Page 51), and includes 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.

### **Adoption or Sale with Limitations, and Long Term Pastures(LTP)**

Adoption applicants are required 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 5 feet tall for horses younger than 18 months. Applicants are required to provide adequate shelter, feed, and water. The BLM retains

title to the horse 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 after an inspection from an official, veterinarian, or other individual approved by the authorized officer to ensure humane care, at which point the horse becomes the property of the adopter. Adoptions are conducted in accordance with 43 CFR §4750.

Potential buyers (horses only) must fill out an application and be pre-approved before they may buy a wild horse. A sale-eligible wild horse 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. Sales of wild horses are conducted in accordance with BLM policy.

Potential impacts to wild horses from transport to adoption, sale, or LTPs (horses only) are similar to those previously described. One difference is that when shipping animals for adoption, sale, or LTP, BLM may transport animals for a maximum of 24 hours. Immediately prior to transportation, and after every 18-24 hours of transportation, animals are offloaded and provided a minimum of 8 hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of 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 LTPs. Establishment of each LTP is subject to a separate environmental analysis and decision making process. Wild horses in LTPs 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 LTPs in the Midwest for over 20 years.

The LTPs 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. About 28,600 wild horses that are in excess of the current adoption or sale demand (due to age or other factors such as economic recession) are currently located on private land pastures in Oklahoma, Kansas, Iowa, and South Dakota. Located in mid or tall grass prairie regions of the United States, these LTPs are highly productive grasslands compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 10-11 acres per animal). Of the animals currently located in LTP, less than one percent is age 0-4 years, 49 percent are age 5-10 years, and about 51 percent are age 11+ years.

Mares and castrated stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. No reproduction occurs in the LTPs, but some foals are born to mares that were pregnant when they were removed from the range and placed onto the LTP. These foals are gathered and weaned when they reach about 8-10 months of age and are then shipped to short-term facilities where they are made available for adoption. Handling of wild horses at the LTPs 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 or greater due to age or

other factors. Natural mortality of wild horses in LTP averages approximately 8% per year, but can be higher or lower depending on the average age of the horses pastured there (GAO-09-77, Page 52). The savings to the American taxpayer which results from contracting for LTP averages about \$4.45 per horse per day as compared with maintaining the animals in short-term holding facilities.

### **Euthanasia and Sale without Limitation**

While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is required under the WFRHBA, Congress prohibited the use of appropriated funds for this purpose between 1987 and 2004 and again in 2011 and 2012. It is unknown if a similar limitation will be placed on the use of Fiscal Year 2013 appropriated funds.

## **2. Environmental Consequences of the Grazing Closure Alternative**

Similar to the Proposed Action, the Grazing Closure Alternative would have indirect impacts to wild horses that would consist of reduced numbers of grazing animals on the range through the drought period and drought recovery. The impacts would be a degree of increased availability and quality of forage and water dependent upon the specific vegetation and water present throughout the HMA(s) and the inherent overlap of livestock and wild horses of that particular HMA. In any case, the absence of all livestock within drought affected areas would ensure maximum recovery of vegetation and riparian areas especially in HMAs that are at or below the established AML or where wild horse distribution is good as a result of adequate and dispersed available water. In areas where wild horse populations exceed AML or are concentrated, the beneficial impacts to the range from grazing animals would be lessened, yet drought recovery would be enhanced.

## **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and potentially result in a continuation of current management practices, which are often poorly suited to drought.

Implementation of livestock and wild horse drought management actions such as would be delayed which could result in deterioration of animal health and body condition and degradation of rangeland health as water and/or vegetation resources dwindle under continued use by livestock and wild horses.

Concentrated use by livestock and wild horses could affect wild horse habitat. Drought affected forage and riparian resources would be more likely to be degraded or irreparably damaged by overuse or improper timing of use. Trailing, trampling, and erosion of soils and bare ground would increase, as would degradation to riparian areas and utilization of rangeland plants. Excessive utilization of plants and pawing them from the ground would cause plant death, preventing recovery of plant health once drought ceases. Irreparable damage may occur.

Competition for the available water and forage between wild horses, and native wildlife would continue and further increase. Wild horses are a long-lived species with documented survival rates exceeding 92%, and little impact from predation and disease occurs. Experience has shown that once the vegetation and water resources are at critically low levels, deterioration of animal health can happen very quickly, with young foals and mares affected most severely. Without implementation of drought management actions, it is likely that many of these animals would die from starvation and/or dehydration. The resultant population could be heavily skewed towards the stronger stallions which could lead to social disruption in the HMAs. Recovery from drought

could be delayed, and could require many years before pre-drought production is achieved. In the short and long-term, wild horses would have reduced quality and quantity of habitat, which could affect distribution of use within the HMAs, concentration of use and have impacts to animal health as resources are less plentiful.

By managing the public lands in this way, the vegetation and water resources would be severely impacted with little to no potential for recovery. This degree of rangeland degradation could lead to management of wild horses at greatly reduced levels in the future. As a result, the No Action Alternative would adversely impact the health and wellbeing of wild horses in drought afflicted HMAs and would inhibit the recovery of drought stressed habitat important to the future management of these herds. A TNEB would not be maintained or restored under the No Action Alternative.

As populations increase beyond the capacity of the habitat, bands of horses could leave the boundaries of the HMAs in search of forage and water, thereby increasing impacts to rangeland resources outside the HMA boundaries as well (i.e., in areas not designated for their use).

An indirect impact of the No Action Alternative would include animal and/or human deaths due to the increased vehicle collisions as wild horses and cross roadways in specific areas searching for food and water.

The BLM realizes that some members of the public advocate “letting nature take its course”, however, allowing horses to die of dehydration and starvation would be inhumane treatment and clearly indicates that an overpopulation of horses exists in the HMA, and is not consistent with the WFRHBA. Additionally, promulgated Federal Regulations at Title 43 CFR 4700.0-6 (a) state “*Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat*” (emphasis added).

## **O. Wilderness**

### **Affected Environment**

The United States Congress established the National Wilderness Preservation System to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States. Wilderness designation is intended to preserve and protect certain lands in their natural state. Only Congress, with Presidential approval, may designate public lands as Wilderness. The Wilderness Act of 1964 identifies wilderness uses and prohibited activities. Although wilderness character is a complex idea and is not explicitly defined in the Wilderness Act, wilderness characteristics are commonly described as:

- Untrammeled — area is unhindered and free from modern human control or manipulation.
- Natural — area appears to have been primarily affected by the forces of nature.
- Undeveloped — area is essentially without permanent improvements or human occupation and retains its primeval character.
- Outstanding opportunities for solitude or a primitive and unconfined type of recreation— area provides outstanding opportunities for people to experience solitude or primeval and unrestricted recreation, including the values associated with physical and mental inspiration and challenge.

- Supplemental values – complementary features of scientific, educational, scenic or historic values.

A Minimum Requirements Decision Analysis was completed for this EA. Only those actions not requiring additional site-specific NEPA analysis were analyzed (e.g. reduced grazing duration, partial or complete closure of allotment, etc.).

Wilderness Study Areas (WSAs) are designated by the BLM as having wilderness characteristics worthy of consideration by Congress for permanent Wilderness designation. While Congress considers whether to designate a WSA as Wilderness, the BLM manages the area to prevent impairment of its suitability for Wilderness designation. All proposed actions within WSAs must be compliant with BLM Manual 6330 Management of Wilderness Study Areas.

The EYDO administers 22 Wilderness areas and 3 Wilderness Study Areas (WSAs).

Wilderness	Acres	Field Office	District Office	Year of Designation
Becky Peak	18,199	Schell	Ely	2006
Big Rocks	12,997	Caliente	Ely	2004
Bristlecone	14,095	Egan	Ely	2006
Clover Mountains	85,748	Caliente	Ely	2004
Delamar Mountains	111,328	Caliente	Ely	2004
Far South Egans	36,384	Schell	Ely	2004
Fortification Range	30,656	Schell	Ely	2004
Goshute Canyon	42,544	Egan	Ely	2006
Government Peak	6,313	Schell	Ely	2006
Highland Ridge	68,627	Schell	Ely	2006
Meadow Valley Range	123,488	Caliente	Ely & Las Vegas Southern Nevada	2004
Mormon Mountains	157,938	Caliente	Ely & Las Vegas Southern Nevada	2004
Mount Grafton	78,754	Schell	Ely	2006
Mt. Irish	28,334	Caliente	Ely	2004
Mt. Moriah	8,708	Schell	BLM – Ely & USFS - Ely	1989 & 2006
Parsnip Peak	43,693	Schell	Ely	2004
South Egan Range	67,214	Schell	Ely	2006
South Pahroc Range	25,800	Caliente	Ely	2004
Tunnel Spring	5,371	Caliente	Ely	2004
Weepah Spring	51,480	Caliente	Ely	2004
White Rock Range	24,413	Schell	Ely	2004
Worthington Mountains	30,664	Caliente	Ely	2004
WSA				
Park Range	47,268	Egan & Tonopah	Ely & Battle Mountain	n/a
Riordan's Well	57,002	Egan & Tonopah	Ely & Battle Mountain	n/a
Goshute Canyon	362	Wells	Elko (administered by Ely)	n/a

## 1. Environmental Consequences of the Proposed Action

As BLM implements the above actions during times of drought outside wilderness or WSAs, rangeland and riparian resources within the units would improve. Livestock and wild horses

would be provided with alternative water sources alleviating pressure on resources inside wilderness/WSAs. This would minimize the impacts that could occur, including: vegetation trampling, soil compaction, erosion, and water contamination that could occur when livestock and wild horses utilize rangeland and riparian resources for forage and water.

Changes in livestock management practices within wilderness or WSAs (e.g., change in season of use, reduced grazing duration, partial reduction in AUMs, partial or complete closure of an allotment(s), targeted grazing of invasive annual communities, and temporary change in kind or class of livestock) under the Proposed Action would have a beneficial impact on Wilderness and WSAs. These actions would allow the rangeland and riparian resources to temporarily recover from the impacts of livestock grazing including: vegetation trampling, soil compaction, erosion, and water contamination. These impacts could impair the natural character within wilderness, and if severe, may not meet the non-impairment criteria of WSAs. Reduction thereof would benefit the unit. Further, the changes in livestock management, in part or in whole, would alleviate human-influenced trammeling activities on the landscape during times of drought by reducing impacts to natural resources as a result of livestock grazing and wild horse use. These actions would reduce the trammeling effect on the wilderness resource.

Wild horse removal under the Proposed Action would have a beneficial impact on the rangeland and riparian resources within Wilderness/WSAs. Wild horses utilize rangeland and riparian resources for forage and water. If unmanaged under drought conditions, this usage can cause impacts. Impacts could include, but are not limited to, vegetation trampling, soil compaction, erosion, and water contamination.

The above actions would improve the untrammeled, and natural characters of wilderness. Indirectly, the opportunities for primitive and unconfined recreation qualities of wilderness would improve with better habitat, and therefore, better hunting opportunities. No effects would result on the undeveloped or the outstanding opportunities for solitude values.

Regarding water hauling to wildlife water developments, the Amendment to Memorandum of Understanding between the Bureau of Land Management and the Nevada Department of Wildlife Supplement No. 9 regarding Wildlife Management in Nevada BLM Wilderness Areas (BLM MOU 6300-NV930-0402) in Part VII. Immediate Actions and Procedures states, "Actions requiring immediate attention due to unanticipated natural or human-caused circumstances (e.g., flood, vandalism, sick animal), that directly and immediately jeopardize the survival of fish and wildlife under the NDOW's jurisdiction, may be permitted if the following procedure is adhered to..."

However, as seasons of drought compound, or there is likelihood of the developments being depleted of water within a fiscal year, the following would apply: "To the extent feasible, the NDOW will submit as part of their annual Operations and Maintenance Schedule, immediate action scenarios that may be possible or probable in connection with a given proposed activity, project or development. In doing so, the BLM will then be in a position to analyze potential impacts to wilderness resources in advance of occurrence."

## **2. Environmental Consequences of the Grazing Closure Alternative**

The grazing closure alternative would beneficially affect wilderness/WSAs within the EYDO. Rangeland and riparian resources within the wilderness/WSA would be allowed to temporarily recover from livestock grazing. This recovery would last for the duration of the drought and one additional growing season following the cessation of the drought. During this period, rangeland

and riparian resources (i.e. naturalness) within the unit would not be negatively affected by livestock grazing (e.g., vegetation trampling, soil compaction, erosion, and water contamination).

Similar to alternative A above, removal of grazing from the wilderness would remove a trammel. This would be a net benefit to the untrammelled character of wilderness for the duration of the closure. This alternative would neither detract from nor benefit the undeveloped character, as no new developments are proposed nor would any be removed. Effects to the outstanding opportunities for solitude or a primitive and unconfined type of recreation would be the same as under the Proposed Action.

### **3. Environmental Consequences of the No Action Alternative**

The No Action Alternative would negatively impact the wilderness characteristics of the WSAs within the EYDO. The No Action Alternative would not allow for changes in livestock grazing management to adjust to drought conditions. Over time, this could impair the same qualities that the WSAs originally met for suitability as wilderness. During drought conditions, livestock, wild horses, would congregate in areas that receive a higher abundance of moisture, especially riparian areas. Riparian areas that are within WSAs could be degraded. This degradation could include, but is not limited to, vegetation trampling, soil compaction, erosion, and water contamination.

In designated wilderness, delayed implementation times or continued grazing and wild horse use during times of drought would not have an additional trammeling effect, but a continued trammeling effect. Naturalness may be more drastically impacted by the continuation of the human-caused uses (livestock grazing and wild horse use). While the effects of drought are natural phenomenon, the additional impacts created by livestock and wild horse use would further impact naturalness: vegetation impacts, depletion and degradation of water resources, both of which degrade wildlife habitat and wildlife species themselves. Opportunities for hunting may be degraded as wildlife and its habitat are further degraded during times of drought by the added impacts of livestock and wild horses. No effect to the undeveloped character or to opportunities for solitude would be expected under this alternative.

# **Chapter 4. CUMULATIVE EFFECTS**

This page intentionally  
left blank

The Council on Environmental Quality (CEQ) regulations implementing NEPA defines cumulative impacts as: “The impact on the environment which results from incremental impact of the action when added to other past, present or reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR 1508.7). For the purposes of this EA, cumulative impacts are the sum of all past and present actions, the Proposed Action and reasonably foreseeable future actions (RFFAs) resulting from public land uses. The purpose of the cumulative analysis in this EA is to evaluate the significance of the Proposed Action’s contributions to cumulative impacts.

As required under NEPA and the regulations implementing NEPA, cumulative impacts have been addressed for each resource brought forward for analysis. The extent of impacts to each resource would vary based on geographical and biological limits of that resource. Additionally, the length of time for cumulative effects analysis would vary according to the duration of impacts from the Proposed Action on the particular resource. The Cumulative Effects Study Area (CESA) for the Proposed Action is the entire EYDO and administered allotments.

#### 4.0 Past, Present and Reasonably Foreseeable Future Actions

The Past, Present and Reasonably Foreseeable Future Actions applicable to the assessment area are identified as the following:

Table 9: Past, Present and Reasonably Foreseeable Future Actions

Project Name or Description	Status (X)		
	Past	Present	Future
Issuance of multiple use decisions and permits through the allotment evaluation process	X	X	X
Wild horse gathers	X	X	X
Fence construction for resource protection and management	X	X	X
Mining exploration, extraction and reclamation	X	X	X
Geothermal exploration and development			X
OHV use and trail system	X	X	X
Woodcutting and pine nut and Christmas tree harvesting	X	X	X
Habitat and vegetation improvement treatments and projects	X	X	X
Wildfire suppression and rehabilitation	X	X	X
Invasive and noxious weed treatments	X	X	X

BLM would analyze any future proposed projects within the assessment area in an appropriate environmental document following site-specific planning. Future project planning would also include public involvement.

#### 4.1 Effect of Past, Present and Reasonably Foreseeable Future Actions

##### A. Air Quality

##### Cumulative Effects of the Proposed Action

Past, present, and RFFAs cumulatively affecting air quality on the BMD have been identified as smoke, ash, and debris from wildland fires/prescribed burns, fugitive dust from mining activities and (OHV) use of unimproved roads, combustion engine emissions, wind erosion of disturbed areas, and herbicide applications.

Under the Proposed Action, DRAs would be implemented to maintain vegetation to minimize the potential for accelerated erosion events. DRAs such as temporary water hauls could result in the short-term increase of wind born particulate matter and vehicle emissions during the hauling of water. Any airborne particulate matter caused by the implementation of DRAs coupled with past, present and RFFAs would be negligible and are not expected to cumulatively impact air quality.

The DRAs described in the Proposed Action are designed to protect vegetation and stabilize soils and would decrease wind born particulate matter in the long-term. Therefore, it is expected that the cumulative effects of the Proposed Action, would be beneficial and not significant in regards to air quality.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative are similar to those of the Proposed Action.

### **Cumulative Effects of the No Action Alternative**

Marshal (1973) found that wind velocity, and its potential to detach and transport dry soil, exponentially increases near the ground as vegetation's sheltering effect is reduced. The Society for Range Management Task Group in Concepts and Terminology (1995) concluded that erosion was a function of protective attributes of vegetation (e.g., cover, biomass, density of plants). The No Action Alternative would increase response time and reduce the effectiveness of management during a drought. In many instances, current livestock and wild horse management would continue with no modifications. This would lead to an overall decline in rangeland health associated with a reduction in plant cover and increased soil erosion. Accelerated soil erosion rates would increase the amount of airborne particulate matter, which could reduce air quality causing public safety issues such as poor visibility or respiratory problems. This coupled with past, present and RFFAs such as smoke, ash and debris from wildland fires/prescribed burns and fugitive dust from mining activities and (OHV) use of unimproved roads would have adverse cumulative impacts on air quality.

## **B. Wildlife**

### **Cumulative Effects of the Proposed Action**

In the short-term, the Proposed Action could positively impact a wide variety of wildlife species mainly as a result of increased water and forage availability. In the long-term, wildlife would also benefit from improved rangeland health conditions.

The Proposed Action does not induce substantial growth or concentration of wildlife populations, displace or redistribute wildlife populations, cause a substantial reduction in wildlife population growth, reduce reproduction or survival, cause a substantial net increase in physiological expenditures, or create a substantial demand for forage or water. It is expected that the cumulative and incremental effects of the Proposed Action on wildlife would be beneficial.

### **Cumulative Effects of the Grazing Closure Alternative**

In the short-term, the Grazing Closure Alternative could positively impact a wide variety of wildlife species mainly as a result of increased water and forage availability. In the long-term, wildlife would also benefit from improved rangeland health conditions.

The Grazing Closure Alternative does not induce substantial growth or concentration of wildlife populations; displace or redistribute wildlife populations; cause a substantial reduction in wildlife population growth; reduce reproduction or survival; cause a substantial net increase in physiological expenditures; or create a substantial demand for forage or water. BLM expects that the cumulative and incremental effects of the Grazing Closure Alternative on wildlife would be beneficial.

### **Cumulative Effects of the No Action Alternative**

Under the No Action Alternative, current livestock and wild horses management would continue during drought and would likely lead to the degradation of upland and riparian health. Over the short-term, negative impacts to wildlife include declines in physiological condition leading to depressed reproductive output and increased mortality. If drought conditions persist for prolonged periods, cumulative degradation of rangeland health could lead to significant declines in wildlife populations, local extinctions and reduced connectivity between extant populations. Impacts would likely be considerable for species that depend on surface water and/or riparian areas for portions of their life history.

## **C. Cultural/Historical**

### **Cumulative Effects of the Proposed Action**

BLM has identified past, present, and RFFAs cumulatively affecting cultural resources on the EYDO as wildland and prescribed fires, recreation/OHV use, general ground disturbing activities and the illegal desecration of evaluated and unevaluated sites. When compared with the previously identified cumulative impacts, BLM does not expect the Proposed Action to contribute to cumulative loss of cultural resources. This is because the DRAs identified in the proposed action are intended to maintain vegetation health and limiting soil erosion. Furthermore, any of the DRAs that have the potential to be ground disturbing (e.g., temporary water hauls, electric fences and above ground pipelines) would be surveyed for cultural resources prior to implementation. BLM expects that the cumulative and incremental effects of the Proposed Action would be beneficial and not significant in respect to cultural and historical resources.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative reflect those of the Proposed Action.

### **Cumulative Effects of the No Action Alternative**

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and result in a continuation of current management practices, which are often poorly suited to drought. Drought reduces the health and production of vegetation. Without the prompt implementation of management strategies, the effects of drought can be compounded by improper livestock and wild horse use. This may lead to a further reduction in plant cover and increased soil erosion. An increase in soil erosion would provide the potential for the degradation of important cultural resources. Therefore, the No Action Alternative coupled with past, present and RFFAs known to affect cultural resources would have adverse cumulative impacts on cultural and historical resources.

## **D. Native American Religious Concerns**

### **Cumulative Effects of the Proposed Action**

Past, present and RFFAs cumulatively affecting cultural resources on the EYDO have been identified as wildland and prescribed fires, recreation/OHV use, general ground disturbing activities and the illegal desecration of evaluated and unevaluated sites. When compared with the previously identified cumulative impacts, the Proposed Action is not expected to contribute to cumulative loss of cultural resources. This because the DRAs identified in the proposed action are intended to maintain vegetation health and limiting soil erosion. Furthermore, any of the DRAs that have the potential to be ground disturbing (e.g., temporary water hauls, electric fences and above ground pipelines) would be surveyed for cultural resources prior to implementation. The placements of such temporary projects are flexible and would avoid any known cultural resources. Any temporary electric fences constructed would be designed in a manner that allows access at all current access points (e.g., trails, roads, etc.). The cumulative loss of cultural resources would be minimized since the BLM would take into account any potential effects prior to the installation of temporary range improvements.

BLM expects that the cumulative and incremental effects of the Proposed Action would be beneficial and not significant in respect to Native American Religious Concerns.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative reflect those of the Proposed Action.

### **Cumulative Effects of the No Action Alternative**

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and result in a continuation of current management practices, which are often poorly suited to drought. Drought reduces the health and production of vegetation. Without the prompt implementation of management strategies, the effects of drought can be compounded by improper livestock and wild horse use. This may lead to a further reduction in plant cover and increased soil erosion. An increase in soil erosion would provide the potential for the degradation of important cultural resources. Edible and medicinal plants may be reduced or eliminated from traditional cultural sites if overgrazing occurs during drought. Riparian areas may experience heavy use by livestock and/or wild horses as upland vegetation dries out and becomes less palatable and water resources become scarce. The delayed implementation of DRAs under the No Action Alternative coupled with past, present and RFFAs known to affect cultural resources would have adverse cumulative impacts on Native American religious concerns.

## **E. Noxious Weeds/Invasive Non-native Species**

### **Cumulative Effects of the Proposed Action**

Noxious weeds and/or invasive non-native species are spread by wind, water, animals and people. The potential for these species to invade an area and become established increases with ground disturbance and reduced vigor of native plants. In the short-term, the Proposed Action would provide for targeted grazing of non-native species. In the long-term the Proposed Action would limit adverse impacts to native vegetation and reduce the potential for soil erosion, thus limiting the opportunity for noxious weeds and/or invasive non-native species to become established. It is expected that the cumulative and incremental effects of the Proposed Action would be beneficial and not significant in regards to noxious weeds and invasive non-native species.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative reflect those of the Proposed Action. However, the Grazing Closure Alternative does not provide an opportunity for targeted grazing of non-native species.

### **Cumulative Effects of the No Action Alternative**

Under the No Action Alternative, current livestock and wild horse management would continue during drought and would likely lead to the degradation of upland and riparian health. Reduced plant vigor, soil cover and increased erosion are linked to reduced upland and riparian health. This would increase the potential for invasion by noxious weeds and non-native species and lead to a long-term increase in noxious weeds and non-native species.

## **F. Riparian/Wetlands**

### **Cumulative Effects of the Proposed Action**

Other factors that could adversely impact riparian vegetation such as diversion of stream flow and groundwater pumping for agriculture and mining are not altered by the proposed action. The reduction in in-stream flows as a result of diversion for irrigation and/or mining during periods of drought may still lead to a reduction in riparian vegetation. Groundwater pumping for irrigation and mining with a reduction in groundwater recharge for periods of sustained drought may result in a lowering of the water table in some areas adversely impacting riparian vegetation.

### **Cumulative Effects of the Grazing Closure Alternative**

Research (Dobkin *et al.*, 1998) has shown precluding grazing from some stream segments for four years resulted in water table elevation and lateral expansion of the hyporheic zone along the channel. They also observed an increase in quantity and duration of base flows.

Most climate models predict the severity and frequency of droughts in the southwestern United States is expected to increase, increasing the need for a drought management program. The Grazing Closure Alternative would allow the restoration of riparian vegetation in a climate with longer, hotter growing seasons, and increased intensity of droughts.

### **Cumulative Effects of the No Action Alternative**

Under the No Action Alternative there could be an extended period of riparian vegetation loss. Less riparian vegetation could result in increased erosion and sedimentation.

The reduction in riparian vegetation as a result of grazing would increase the impacts of storm and snow melt-caused run-off. Channel and draws could become entrenched, and flood plains become hydrologically disconnected from stream flow resulting in the loss of riparian vegetation and the formation of dry terraces.

Based on climate models, the severity and frequency of droughts in the southwestern United States is expected to increase. Predicted climate change may result in the acceleration of the degradation of the riparian ecosystem.

## **G. Water Quality**

### **Cumulative Effects of the Proposed Action**

Agriculture and mining are not altered by the proposed action. During drought periods, pumping for agriculture and mining could further reduce ground water resources and lower the water table. Agriculture could supplement a reduction in surface water with groundwater. The use of additional amounts of groundwater high in total dissolved solids would increase the deposition of salts in the upper soil zone.

### **Cumulative Effects of the Grazing Closure Alternative**

The Grazing Closure Alternative would allow for the restoration of riparian vegetation reducing erosion, sedimentation, and water temperature. Reestablishment of riparian vegetation would help mitigate the adverse impacts of agriculture and mining related run-off. Riparian vegetation acts as a filter and reduces sediment and contaminate loading to streams.

### **Cumulative Effects of the No Action Alternative**

The No Action Alternative would result in a significant decrease in water quality. Sedimentation and water temperatures would increase. The reduction or removal of riparian vegetation would exacerbate the impacts to water quality from agriculture and mining run-off.

## **H. Grazing Management**

### **Cumulative Effects of the Proposed Action**

Past, present, and RFFAs have the potential to impact livestock grazing activities, at least temporarily. It is expected that the Proposed Action could contribute to the cumulative impacts of past actions that have resulted in improved rangeland health conditions such as; rangeland health evaluations, wildland fires, habitat treatment activities, and past weed treatments. Temporary displacement of livestock as a result of actions that could occur under the Proposed Action along with past, present and RFFAs also contributes to the direct cumulative impacts to grazing management. The Proposed Action would require an increase in grazing management practices on allotments occurring within drought-afflicted areas of the EYDO. Depending on the DRAs selected, grazing management would be modified. This would lead to increased inputs from permittees. The cumulative effects of these inputs have been analyzed within the Socio-Economic Values section of this document.

The degree to which drought impairs the range's potential for future forage production depends on the intensity, frequency and timing of grazing (Howery 1999). Lagged responses toward drought pose a threat to sustainable management of rangelands (Thurow and Taylor 1999). The proposed action would provide for the maintenance of vegetation and continuation of opportunities for grazing when past, present and RFFAs could provide additional disturbances (e.g., mineral exploration/extraction, disturbance from wildland and prescribed fire, road maintenance, etc.) across the public lands. These actions result in an increase in disturbed lands, increasing the risk of degradation of vegetative resources. Cumulatively, the indirect impact of the Proposed Action when coupled with these particular past, present and RFFAs would improve resources available for livestock grazing management due to a reduction in the net-loss of vegetative resources.

### **Cumulative Effects of the Grazing Closure Alternative**

In the short-term, the Grazing Closure Alternative would remove livestock from public lands and eliminate grazing management. The cumulative effects of the reduced opportunity for grazing have been analyzed within the Socio-Economic Values section of this document.

In the long-term, the Grazing Closure Alternative would have similar impacts as the Proposed Action. The removal of grazing would maintain vegetative cover and reduce the potential for soil erosion and noxious weed invasion. This would provide for the sustainable management of the rangelands and provide future opportunities for grazing.

### **Cumulative Effects of the No Action Alternative**

The No Action Alternative would increase response time and reduce the effectiveness of management during a drought. In many instances, current livestock and wild horse management would continue with no modifications. This would lead to an overall decline in rangeland health associated with a reduction in plant cover and increased susceptibility to soil erosion. The No Action Alternative would directly impact rangeland health, indirectly impacting grazing management practices and levels of livestock production over the long term.

## **I. Land Use Authorization**

### **Cumulative Effects of the Proposed Action**

The Proposed Action would provide for the maintenance of rangeland health and reduce soil erosion and the potential for noxious weed invasion. This would beneficially impact land use authorizations by reducing the maintenance cost of right-of-ways as well as protect access to sites or the sites themselves. It is expected that the cumulative and incremental effects of the Proposed Action would be beneficial and not significant in regards to Land Use Authorization.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative reflect those of the Proposed Action.

### **Cumulative Effects of the No Action Alternative**

The No Action Alternative would increase response time and reduce the effectiveness of management during a drought. In many instances, current livestock and wild horse management would continue with no modifications. This would lead to an overall decline in rangeland health associated with a reduction in plant cover and increased susceptibility to soil erosion. Noxious weeds and non-native invasive species are more likely to invade areas that are in poor condition. Noxious weeds increase the costs for maintenance and soil erosion could damage access to sites or the sites themselves. Increased erosion and density of noxious weeds associated with the prolonged degradation of rangeland health that would occur with the No Action Alternative would have a negative effect on Land Use Authorizations.

## **J. Recreation**

### **Cumulative Effects of the Proposed Action**

In the past, recreation within the EYDO has been dispersed and primitive in nature, and presently remains that way. Under the Proposed Action, reasonably foreseeable future actions include a positive impact on wild horse viewing and riparian areas that are utilized for recreational purposes. In recent years, there has been an increased interest in wild horses and wild horse viewing within the EYDO. Under the proposed action, BLM would implement gathers to minimize the negative impacts that drought conditions would have on wild horse populations that are on the range. Wild horse viewers would observe horses that are in better viewing condition than if BLM takes no action, due to fewer horses utilizing scarce resources under drought conditions.

While limited, the EYDO does contain riparian resources that are used for recreational purposes. Impacts under the Proposed Action include minimizing the degradation of riparian resources used for recreational purposes. If livestock management actions and wild horse gathers are implemented, riparian resources wouldn't be impacted as heavily as if no action was taken. If drought conditions persisted, this would cause livestock, and wild horses to seek out any remaining water sources in order to survive. This could result in large congregations of animals in riparian areas that are utilized for recreation, causing degradation to the riparian resources. Degradation could include, but is not limited to, vegetation trampling, soil compaction, erosion, and water contamination. These negative impacts would be minimized under the proposed action. Visitors would continue to utilize riparian resources within the EYDO for recreational purposes. This would have a positive economic impact on communities within the EYDO that rely partly on recreational visitors as a source of income.

### **Cumulative Effects of the Grazing Closure Alternative**

Past and current actions within the EYDO include allowing for livestock grazing in areas which coincide with recreation activities. Reasonably foreseeable future actions under the Grazing Closure Alternative include a temporary benefit to rangeland and riparian resources that are utilized for recreation purposes. Livestock would not cause negative impacts that could include, but are not limited to, vegetation trampling, soil compaction, erosion, and water contamination. These impacts would continue for the duration of the drought plus one growing season following the cessation of the drought. These measures would protect rangeland and riparian resources within the EYDO, and allow them to remain suitable areas for recreation. This would have a positive economic impact on communities within the EYDO that rely partly on recreational visitors as a source of income.

### **Cumulative Effects of the No Action Alternative**

In the past, recreation within the EYDO has been dispersed and primitive in nature, and presently remains that way. Impacts under the No Action Alternative include reduced wild horse viewing, and a degradation of riparian areas used by recreationists. In recent years, there has been an increased interest in wild horses and wild horse viewing within the EYDO. If no action is taken and rangeland and riparian resources deteriorate under drought conditions, this would affect the health of wild horses that are on the range. This would result in a negative economic impact on communities within the EYDO that rely recreational visitors as a source of income.

While limited, the EYDO does contain riparian resources that are frequently used for recreational purposes. Reasonably foreseeable future actions under the No Action Alternative would include a degradation of the riparian resources within the EYDO. Under the No Action Alternative, changes in livestock management wouldn't be implemented and wild horse gathers wouldn't take place. If drought conditions persisted, this would cause livestock, wild horses, to seek out any remaining water sources in order to survive. This could result in large congregations of animals in riparian areas that recreation uses, causing degradation to the riparian resource. Degradation could include, but are not limited to, vegetation trampling, soil compaction, erosion, and water contamination. These impacts could cause recreation users to search for other recreation areas outside of the EYDO. This would result in a negative economic impact on communities within the EYDO that rely partly on recreational visitors as a source of income.

## **K. Socioeconomic Values**

### **Cumulative Effects of the Proposed Action**

In the short-term, the Proposed Action could adversely impact ranchers who hold BLM grazing permits due to costs incurred to implement DRAs. However, in the long-term, ranchers would benefit from improved rangeland health conditions. Wildlife and wild horses would also benefit from the increased production rates of forage and habitat improvement.

The Proposed Action does not induce substantial growth or concentration of population; displace a large number of people; cause a substantial reduction in employment; reduce wage and salary earnings; cause a substantial net increase in county expenditures; or create a substantial demand for public services. In the volatile economy of the foreseeable future, it is expected that the cumulative and incremental socioeconomic effects of the Proposed Action, would be beneficial and not significant.

### **Cumulative Effects of the Grazing Closure Alternative**

In the short-term, the Grazing Closure Alternative could adversely impact ranchers who hold BLM grazing permits due to costs incurred to provide alternate livestock forage. However, in the long-term, ranchers could benefit from improved rangeland health conditions. Wildlife and wild horses would also benefit from the increased production rates of forage and habitat improvement.

This alternative does not induce substantial growth or concentration of population; displace a large number of people; cause a substantial reduction in employment; reduce wage and salary earnings; cause a substantial net increase in county expenditures; or create a substantial demand for public services. In the volatile economy of the foreseeable future, it is expected that the cumulative and incremental socioeconomic effects of the Grazing Closure Alternative, would be beneficial and not significant.

### **Cumulative Effects of the No Action Alternative**

Under the No Action Alternative, current livestock and wild horses management would continue during drought and would likely lead to the degradation of upland and riparian health. If drought conditions persist for prolonged periods, cumulative degradation of rangeland health may result in grazing allotments failing to meet rangeland S&Gs in the future. Consequently, BLM could cancel portions of or entire permits on allotments that fail to meet S&Gs, which may adversely impact affected permittees. Additionally, declining conditions of the rangelands may be coupled with declining conditions of livestock, wild horses, and wildlife. During periods of prolonged drought, profits of ranchers would decline. This may or may not lead to existing ranches becoming economically unviable. The BLM assumes that if existing ranches fail, some other corporation or individual may step in to purchase the base property and grazing privileges. It is not possible to foresee which base properties, if any, may change out of livestock production and into some other form of business. If base properties do remain active for livestock production, the industry as a whole would continue to exist but under different ownership and likely with reduced income.

## **L. Soils**

### **Cumulative Effects of the Proposed Action**

Past, present, and RFFAs such as historic grazing management, range improvement construction, mining exploration/extraction, wild horse use, OHV use, and wildland and prescribed fires have impacted soils in the form of soil compaction, loss of soil stability, displacement, and changes in physical and/or biological processes. Impacts are dependent upon the size and nature of the actions that have or may occur across the landscape. Other activities that have resulted in

improved rangeland health have been implemented to improve soil site stability such as changes in grazing management, removal of excess wild horses, reclamation, rehabilitation activities, and authorization of various range improvement projects.

Improper grazing can negatively impact various rangeland ecosystem functions and degrade ecosystem services (Belsky et al. 1999; Briske et al. 2008; Tate et al. 2004). This is especially true during drought, when plant production and vigor is reduced and plants become increasingly vulnerable to grazing. The quality of the soil determines the nature of plant ecosystems and the capacity of land to support animal life, vegetation, and society (Brady and Weil 2002). Soil erosion decreases the capacity of the soil to provide these services. The erosion hazard during drought is increased when prolonged grazing pressure further reduces plant cover (Thurrow and Taylor 1999). Compaction may not be a risk factor during times of drought due to lowered soil moisture content.

The livestock and wild horse management strategies described in the Proposed Action would provide for the maintenance of soil cover. The Proposed Action would also limit the impact to riparian areas where improper management can lead to increased erosion in a short amount of time. It is expected that the cumulative and incremental effects of the Proposed

Action would be beneficial to soils resources.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative reflect those of the Proposed Action.

### **Cumulative Effects of the No Action Alternative**

Increases in wind and water erosion are directly correlated to reduced plant cover. Marshal

(1973) found that wind velocity, and its potential to detach and transport dry soil, exponentially increases near the ground as vegetation's sheltering effect is reduced. The No Action Alternative would lead to an overall decline in rangeland health associated with a reduction in plant cover and increased susceptibility to soil erosion. Therefore, it is expected that the No Action Alternative would have a negative effect on soil resources within the EYDO.

## **M. Vegetation (Including SSS)**

### **Cumulative Effects of the Proposed Action**

Past, present and RFFAs brought forward in Table 8 have resulted in potential direct and indirect impacts to vegetative resources. Most actions that occur have resulted in the improvement of vegetative communities as a whole. Activities such as rehabilitation/restoration projects, noxious/invasive weed treatments, changes in grazing management, and removal of wild horses have direct impacts to vegetative communities by improving vegetative health (vigor, density, and production). Activities such as the implementation of range improvement projects are designed to improve vegetative conditions by modifying livestock distribution patterns within an area. Improved livestock distribution patterns limit grazing pressures on vegetative resources within a given area therefore allowing for an increased vigor, density, and productive response. Where impacts have resulted in a loss of vegetation (e.g., mining, wildland and prescribed fires, geothermal exploration, OHV use) mitigation efforts are typically incorporated in order to limit a net loss across the landscape.

During drought, it is imperative that proper grazing management occurs. The Proposed Action is designed to reduce the impacts of livestock and wild horse use on vegetation during drought.

To survive, perennial plants must accumulate both above ground (shoot growth) and below ground (root growth) biomass through the process of photosynthesis, transpiration, and respiration (Howery 1999). Excessive removal of above ground biomass during the growing season reduces root growth. A healthy root system is paramount in the growth of any range plant, especially during dry years when competition for water and nutrients is most severe (Bedell and Ganskopp 1980). Proper use of range forage allows plants to survive dry periods, recover quickly, and provide cover to protect the soil and promote water infiltration (Hanselka and White 1986). The DRAs described in the Proposed Action are intended to ensure adequate residual plant material is left to protect the soil and provide for sustainable plant production. Maintenance of native plants is important for the continuation of healthy and diverse plant communities, therefore, it is expected that the cumulative and incremental effects of the Proposed Action would be beneficial and not significant in respect to vegetation.

### **Cumulative Effects of the Grazing Closure Alternative**

The cumulative effects of the Grazing Closure Alternative are similar to those of the Proposed Action. However, the Grazing Closure Alternative does not provide an opportunity for targeted grazing of non-native species, which could be used to enhance the production of perennial grasses by reducing plant competition and minimizing soil moisture depletion.

### **Cumulative Effects of the No Action Alternative**

The degree to which drought impairs the range's potential for future plant production depends on the intensity, frequency, and timing of grazing (Howery 1999). Thurow and Taylor (1999) found that unsustainable range use leads to erosion, crusting and degraded vegetation. This causes an increase in the frequency and consequences of drought. Excessive removal of above ground biomass during the growing season reduces root growth. A healthy root system is paramount in the growth of any range plant, especially during dry years when competition for water and nutrients is most severe (Bedell and Ganskopp 1980). As plants are overgrazed their root system is reduced which in turn limits their ability to capture and use soil moisture.

The No Action Alternative would require the preparation of separate EAs, which would delay drought response times and potentially result in a continuation of current management practices, which are often poorly suited to drought. Therefore, it is expected that the No Action Alternative would have negative cumulative impacts on vegetation. Overuse of vegetation during drought would directly impact the health of vegetation and reduce the ability of vegetative communities to use soil nutrients and water even during times of average precipitation.

## **N. Wild Horses**

### **Cumulative Effects of the Proposed Action**

Since 1975, the EYDO has been conducting periodic gathers to remove excess wild horses. Through this time, populations of individual HMAs/HAs have fluctuated. BLM has conducted emergency drought or wildfire gathers on several HMAs/HAs.

Past activities, which may have affected wild horses primarily, include livestock grazing through the impacts on vegetation condition and availability, as well as water quality and quantity, and drought. Wild horse use, overpopulation and gathers to remove excess animals are likely to

have the largest impact on the quality of habitat used by wild horses, thus on the health and long term success of animals on the range. Other actions have included mining and mineral exploration, wildfire suppression, and rehabilitation, range improvement projects including water developments and vegetation treatments, geothermal development, oil and gas exploration, power line development, recreational activities and fence construction.

Currently, the population of the 6 HMAs and 16 HAs administered by the EYDO is approximately 3498 wild horses. Several HMAs/HAs maintain populations in excess of AML, and BLM is proposing maintenance gathers for 2013/2014 to remove excess animals. Permitted livestock use is the primary use that occurs within the associated Allotments in addition to the use by wild horses and wildlife. Mineral exploration and development is taking place in several HMAs/HAs. BLM is currently analyzing past effects of vegetation and fuels treatments and implementing new treatments.

Rangeland Health Evaluations (RHE) are currently being completed in several HMAs/HAs. Once data is collected and analyzed, BLM will evaluate the data for compliance with Standards for Rangeland Health and if necessary, changes to livestock and wild horses would be recommended and implemented through decisions, following consultation with the interested public.

Future activities which could occur include adjustments to livestock grazing numbers or season of use, water developments, spring enclosures, solar, geothermal and mine development, and mineral or geothermal exploration activities. The future may also involve further adjustments (increases or decreases) to AMLs and development of Herd Management Area Plans (HMAPs). Other activities, such as future gathers to maintain AML, implementation of fertility control and/or modification of sex ratios within the HMAs could occur. Should future genetic analysis indicate concerns with genetic viability, specific treatment protocols would be developed to address these concerns such as potential augmentation of wild horses from other similar HMAs.

The BLM would continue to conduct monitoring to assess progress towards meeting the Northeastern and Mojave-Southern Great Basin RAC Standards and Guidelines, Rangeland Health Standards and RMP objectives. Wild horses would continue to be a component of the public lands, managed within a multiple use concept.

While there is no anticipation that amendments to the Wild Free-Roaming Horses and Burros Act would change the way that BLM manages wild horses on the public lands, the Act has been amended three times since 1971. Therefore, there is potential for amendment as a reasonably foreseeable future action.

As the BLM achieves AML on a Bureau wide basis, gathers should become more predictable due to development of herd management plans that plan for scheduled gathers based upon known reproductive rates and monitoring data. This should increase stability of gather schedules, which would result in BLM gathering HMAs on a more consistent schedule, generally, every four years. Population growth controls should be implemented and applied as management tools, with treatments and adjustments that last between gather cycles, reducing the need to remove as many wild horses, and possibly extending the time between gathers.

Cumulative beneficial effects from the Proposed Action are expected, and would include improvement of the rangeland vegetation and riparian areas, which in turn positively impact wildlife, wild horse populations, and livestock as forage and water availability and quality is protected from the effects of drought.

The combination of the past, present, and reasonably foreseeable future actions, along with the Proposed Action, should provide the best opportunity to maintain stable wild horse populations, healthier rangelands and animals, and avoid future emergency situations.

The Proposed Action would contribute to isolated areas of disturbed vegetation through the gather activities. Due to the small size or short duration of the disturbance, cumulative impacts associated with the Proposed Action, when compared to the overall CESA, are expected to be negligible especially when identified mitigation measures are implemented.

BLM expects the Proposed Action to result in indirect impacts that would contribute to improved rangeland health. In the long term, the DRAs in addition to foreseeable actions (such as changes to livestock management systems) would lead to improved habitat for wild horse and wildlife. The actions identified for Livestock and Wild Horses, whether implemented alone or in combination would promote recovery of native vegetation affected by drought as well as reduce or eliminate additional degradation to vegetation and riparian areas.

Because of the movement of wild horses between neighboring HMAs, any removal operation, as well as future gathers could affect the number of animals in these HMAs. Experience has shown that when BLM reduces populations in one HMA, often times there are compensatory population fluctuations as wild horses migrate into an area of lower population from an area of higher population. This is likely a natural response to reduced competition for forage, water, and space.

Due to the normal movement of wild horses between HMA complexes and United States Forest Service WHTs, BLM expects that genetic health of all populations would continue to be maintained. In the case of a complete removal the genetic health of the HMA could be impaired. If possible, BLM would hold an adequate number of animals in a contract facility until BLM deemed it possible to safely release the wild horses and ensure their welfare.

In future years, population growth controls could reduce the overall number of wild horses needing to be removed from the range. The result could be maintaining stable populations within the established AML ranges, removal of primarily young animals, and avoiding the cycle of over populated ranges, necessitating the gather and removal of large numbers of excess animals in order to achieve the lower limit of AML.

With implementation of the Proposed Action, BLM could minimize or avoid excessive use by wild horses. Key forage species would improve in health, abundance, and robustness, and would be more likely to set seed and reproduce, which in turn would contribute to their increase within the plant community. As future wild horse decisions are implemented and future gathers conducted to remove excess animals and maintain AML, BLM expects these to continue and result in overall improvements to the forage availability for livestock, wild horses, and wildlife. Habitat would be protected from further losses of important key forage species, which would increase in frequency, vigor, and production. Improved habitat condition would lead to improved equine body condition, healthier foals, and ensure herd sustainability through drought years.

### **Cumulative Effects of the Grazing Closure Alternative**

Cumulative impacts of this alternative in combination with all other past, present and future actions would consist of enhanced rangeland health in the long term as recovery from drought ensues in the absence of livestock grazing. Effects to wild horses would be a degree of improved quality and quantity of forage and water in the short term and potentially in the long term if recovery from drought and subsequent impacts rangeland health are notable. Future impacts

from overpopulation of wild horses, changes to livestock management or actions that cause changes to animal distribution on the range (including future or continued drought) could negate impacts from this alternative in the long term. There are however, no adverse impacts to wild horses anticipated from this alternative.

### **Cumulative Effects of the No Action Alternative**

The No Action Alternative would not result in any long-term cumulative benefits to any rangeland user. The No Action Alternative would allow continued degradation of vegetation by wild horses within drought affected rangeland, which would cause continued loss of key perennial forage species replaced by less palatable and nutritious native and non-native plants.

In HMAs/HAs that support inadequate resources in relation to the population of animals, emergency conditions for wild horses could result. No other past, present or reasonably foreseeable actions would offset the potentially irreparable damage to the range. Lack of appropriate management action at this time could result in future decisions to reduce AML or eliminate portions of HMAs from long term management due to lack of resources.

Without an emergency gather to remove the stressed animals, a large portion of the population could die a painfully suffering death. Animal health, particularly wild horses would be affected for many years as the range begins to recover from drought under the pressure of a population of animals that is out of balance with the resources.

Deterioration of uplands and riparian areas would not ensure healthy habitat for future generations of wild horses or wildlife. Chronic and long term degradation of rangeland resources could result in irreparable damage to the arid habitat and could result in the need to permanently remove all wild horses from the range in certain HMAs/HAs, cumulatively resulting in reduced AML or discontinuing long term management of wild horses due to lack of suitable habitat. In the long term, the No Action Alternative would result in reductions or elimination of livestock grazing due to degraded range conditions, and a severe reduction or extirpation of native wildlife in most seriously affected areas.

## **O. Wilderness**

### **Cumulative Effects of the Proposed Action**

Past and present actions have allowed for livestock grazing within wilderness and WSAs. Grazing within WSAs must continue in a manner that doesn't cause unnecessary or undue degradation of the lands. Livestock grazing is specifically permitted in wilderness under Section 4(d)(4)(2) of the Act, and must be performed in a manner to meet the overarching mandate from Congress: to preserve wilderness character. Reasonably foreseeable future actions under the Proposed Action include maintaining these standards for livestock grazing within Wilderness and WSAs, and preventing the degradation of natural resources.

Similarly, past and present actions have allowed for wild horses to utilize the areas as long as that use doesn't degrade wilderness character, and is non-impairing. Reasonably foreseeable future actions under the Proposed Action include taking actions to prevent degradation of wilderness values and vegetative cover. During drought conditions, gathers could be implemented. This would prevent the degradation of wilderness values, and ensure the well-being of wild horses on the range. The removal of wild horses would allow for the temporary recovery of rangeland and riparian resources.

### **Cumulative Effects of the Grazing Closure Alternative**

Past and present actions have allowed for livestock grazing within Wilderness and WSAs. Grazing within Wilderness and WSAs must continue in a manner that preserves wilderness character (Wilderness) or meets the non-impairment criteria (WSAs). Under the Grazing Closure Alternative, grazing wouldn't take place within Wilderness or WSAs for the duration of the drought and one additional growing season following the cessation of the drought. Reasonably foreseeable future actions include a temporary recovery of the rangeland and riparian resources. This recovery would last for the duration of the drought, and one additional growing season following the cessation of the drought.

### **Cumulative Effects of the No Action Alternative**

Past and present actions have allowed for livestock grazing within Wilderness and WSAs. Grazing within Wilderness and WSAs must continue in a manner that preserves wilderness character (Wilderness) or meets the non-impairment criteria (WSAs). Reasonably foreseeable future actions under the No Action Alternative may result in impacts to wilderness character or cause degradation to natural resources. Under drought conditions, livestock would seek out remaining rangeland and riparian resources, including those within Wilderness/WSAs, in order to survive. This utilization could impact the rangeland and riparian resources. Impacts could include, but is not limited to, vegetation trampling, soil compaction, erosion, and water contamination. This degradation could affect the wilderness values.

Similarly, past and present actions have allowed for wild horses to utilize the areas (within HMAs) as long as that use doesn't degrade wilderness character, and is non-impairing. Reasonably foreseeable future actions under the No Action Alternative may include impacts to wilderness character, or cause degradation to natural resources during times of drought. Under drought conditions, wild horses would seek out remaining rangeland and riparian resources, including those within Wilderness/ WSAs, in order to survive. This utilization could impact the rangeland and riparian resources. Impacts could include, but is not limited to, vegetation trampling, soil compaction, erosion, and water contamination. This degradation could negatively affect the characteristics found in Wilderness and WSAs.

This page intentionally  
left blank

## **Chapter 5. Tribes, Individuals, Organizations, or Agencies Consulted:**

This page intentionally  
left blank

The following tribes were sent a consultation and coordination letter on December 17, 2012. The BLM received no responses to this letter:

Confederated Tribes of the Goshute Reservation, Nevada-Utah

Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada

Ely Shoshone Tribe of Nevada

Las Vegas Paiute Tribe of the Las Vegas Indian Colony

Moapa Band of the Paiute Indians of the Moapa River Indian Reservation, Nevada

Paiute Indian Tribe of Utah

Skull Valley Band of the Goshute Indians of Utah

Te-Moak Tribe of the Western Shoshone Indians of Nevada

Yomba Shoshone Tribe of the Yomba Reservation

In addition, the members of the public, affected permittees and other federal agencies will have an opportunity to provide comment during a 30 day comment period.

This page intentionally  
left blank

# **Chapter 6. List of Preparers**

This page intentionally  
left blank

ELY DISTRICT DROUGHT  
MANAGEMENT ENVIRONMENTAL  
ASSESSMENT

Erin Rajala	Outdoor Recreation Planner/ Program Lead
Chris Mayer	District Rangeland Management Program Lead
Travis Young	District Planning and Environmental Coordinator
Alicia Styles	Wildlife Biologist/Program Lead
Benjamin Noyes	Wild Horse and Burro Specialist/Program Lead
Leslie Riley	Archeologist/Program Lead
Cody Coombs	Fuels Program Lead
Kyle Hansen	Watershed Program Manager
Mark D'Aversa	Hydrologist/Program Lead
Chris McVicars	Weeds Program Lead
Erica Husse	ESR program Lead
Elvis Wall	Native American Coordinator
Emily Simpson	Wilderness Program Lead
Stephanie Trujillo	Lands and Realty Program Lead
Timothy (TJ) Mabey	Forestry

This page intentionally  
left blank

# **Chapter 7. Literature Cited**

This page intentionally  
left blank

- Abele, S.L. 2011. Nevada Springs Conservation Plan. Springs conservation Plan Working group. The Nature Conservancy, Reno, NV.
- Anderson, A. and K.C. McCuiston. 2008. Evaluating strategies for ranching in the 21st century: successfully managing rangeland for wildlife and livestock. *Rangelands* 30:8-14.
- Bailey, D.W., H.C. VanWagoner, R. Weinmeister and D. Jensen. 2008a. Comparison of low-moisture blocks and salt for manipulating grazing patterns of beef cows. *Journal of Animal Science* 86:1271-1277.
- Bailey, D.W., H.C. VanWagoner, R. Weinmeister and D. Jensen. 2008b. Evaluation of Low-Stress Herding and Supplement Placement for Managing Cattle Grazing in Riparian and Upland Areas. *Rangeland Ecology and Management* 61:26-37.
- Ballard, G. G.R. Geupel, N. Nur, and T. Gardali. 2003. Long-term declines and decadal patterns in population trends of songbirds in western North America, 1979-1999. *Condor* 105:737-755.
- Beck, J.L. and D.L. Mitchell. 2000. Influences of livestock grazing on sage grouse habitat. *Wildlife Society Bulletin* 28:993-1002.
- Bedell, T. E. 1998. Glossary of terms used in range management. Fourth edition. Society for Range Management.
- Bedell, T.E. and Ganskopp, D.C. 1980. Rangelands in Dry Years: Drought Effects on Range, Cattle, and Management. Oregon State University Extension Service.
- Belsky, A.J. 1999. Survey of Livestock Influences on Stream and Riparian Ecosystems in the Western United States. *Journal of Soil and Water Conservation* 54:419-431.
- (BLS) US Department of Labor, Bureau of Labor Statistics. 2011. Labor Force Data by County, 1990, 1995, 2000, 2005-2010 Annual Averages. Internet Web Site: <ftp://ftp.bls.gov/pub/special.requests/la/>. Accessed March 15, 2011.
- Bradford, D. 1998. Holistic Resource Management in the West Elks – Why it Works. *Rangelands* 20 1:6-9
- Brady, N.C., Weil, R.R. 2002. *The Nature and Properties of Soils* (13th ed.). Upper Saddle River, NJ: Prentice Hall.
- Briske, D. D., J. D. Derner, J. R. Brown, S. D. Fuhlendor, W. R. Teague, K. M. Havstad, R. L. Gillen, A. J. Ash, and W. D. Willms. 2008. Rotational grazing on rangelands: Reconciliation of perception and experimental evidence. *Rangeland Ecology and Management* 61:3-17.
- Chambers, Jeanne, and Jerry Miller, ed. Great Basin Riparian Ecosystems. Washington D.C.: Island, 2004.
- Clary, W.P. and W.C. Leininger. 2000. Stubble height as a tool for management of riparian areas. *Journal of Range Management* 53:562-573.

Clary, W.P. and B. F. Webster. 1989 Riparian Grazing Guidelines for the Intermountain Region

Rangelands 12 4: 209-212.

Columbia Spotted Frog Conservation Agreement and Strategy. 2003. Toiyabe Spotted Frog Technical Team. Nevada Department of Fish and Wildlife, Reno, NV.

Crawford, J.A., R.A. Olson, N.E. West, J.C. Mosley, M.A. Schroeder, T.d. Whitson, R.F. Miller, M.A. Gregg, and C.s. Boyd. 2004. Synthesis paper: ecology and management of sage-grouse and sage-grouse habitat. Journal of Range Management 57:2-19.

Curtis, P.D., Pooler, R.L., Richmond, M.E., Miller, L.A., Mattfield, G.F., Quimby, F.W. 2002. Comparative effects of GnRH and porcine zona pellucida (PZP) immunocontraception vaccines for controlling reproduction in white-tailed deer (*Odocoileus virginianus*). Reproduction Supplement 60:131–141.

Dobkin, D.S., A.C. Rich, and W.H. Pyle, 1998. Habitat and Avifaunal Recovery From Livestock Grazing in a Riparian Meadow System of the Northwestern Great Basin. Conserv. Biology 12(1):209-221.

Duda, J.J. A.J. Krzysik and J.E. Freilich. 1999. Effects of drought on desert tortoise movement and activity. Journal of Wildlife Management 63:1181-1192.

Encinias, M. and Smallidge, S.T. 2009. Management of Rangelands and Cattle in Drought-Prone Areas of the Southwest. Guide B-816. New Mexico State University, Cooperative Extension Service.

Finch, Deborah M.; Stoleson, Scott H., eds. 2000. Status, ecology, and conservation of the Southwestern Willow Flycatcher. Gen. Tech. Rep. RMRS-GTR-60. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 132 p.

Fitch, L. and B.W. Adams. 1998. Can fish and cows coexist? Canadian Journal of Plant Science 78:191-198.

Gates, N.G., A.J. Smart, P. Reese. 2003. The Journey to Recovery of the Range After Drought. Proceedings, The Range Beef Cow Symposium XVII. December 9, 10 and 11, 2003. Mitchell, Nebraska.

Giuliano, W.M. and J.D. Homyack. 2004. Short-term grazing exclusion effects on riparian small mammal communities. Rangeland Ecology and Management 57:346-350.

Haak, A.L., J.E. Williams, D. Isaak, A. Todd, C. Muhlfeld, J.L. Kershner, R. Gresswell, S. Hostetler, and H.M. Neville. 2010. The potential influence of changing climate on the persistence of salmonids of the inland west: U.S. Geological Survey Open-File Report 2010–1236, 74 pp.

Hanselka, C.W. and L.D. White. 1986. Rangeland in dry years: drought effects on range, cattle, and management in livestock and wildlife management during drought. R.D. Brown (ed.) Ceasar Kleberg Wildlife Research Institute, Texas A&M University, Kingsville.

Heilmann, T.J., Garrott, R.A., Caldwell, L.L., Tiller, B.L. 1998. Behavioral response of free-ranging elk treated with an immunocontraceptive vaccine. Journal of Wildlife Management 62:243–250.

Herbel, C.H. 1986. Vegetation changes on arid rangelands of the southwestern United States. P.J. Joss, P.W. Lynch, O.B. Williams (eds.). Rangelands: A Resource Under Siege, Proceedings of the second International Rangeland Congress, Australian Academy of Science, Canberra.

Headwaters Economics. 2011. Economic Profile System (EPS) Socioeconomic Profiles produced for Esmeralda, Eureka, Lander, and Nye Counties and 4 county aggregate. Internet Web site: <http://www.headwaterseconomics.org/eps/>. Data for Economic Profile System accessed on February 17, 2011.

Holechek, J.L. 1988. An approach for setting the stocking rate. Rangelands 10:10-14.

Holechek, J.L., R.D. Pieper, C.H. Herbel. 2004. Range Management Principles and Practices. Fifth edition. Pearson Education, Inc., Upper Saddle River, New Jersey. 607 pages.

Howery, L.D. 1999. Rangeland Management Before, During, and After Drought. College of Agriculture and Life Sciences, University of Arizona.

Keinath, D.A. and M. McGee. 2004. Species assessment for pygmy rabbit (*Brachylagus idahoensis*) in Wyoming. Bureau of Land Management, Cheyenne, WY.

Knick, S.T. and J.W. Connelly (eds.). 2010. Greater sage-grouse: Ecology and conservation of a landscape species and its habitats. Studies in Avian Biology, 38. University of California Press, Berkeley, CA.

Leeuw, J.d., M.N. Waweru, O.O. Okello, M. Maloba, P. Nguru, M.Y. Said, H.M. Aligula, I.M.A. Heitkonig, and R.S. Reid. 2001. Distribution and diversity of wildlife in northern Kenya in relation to livestock and permanent water points. Biological Conservation 100:297-306.

Longshore, K.M. J.R. Jaeger, and J.M. Sappington. 2002 Desert tortoise (*Gopherus agassizii*) survival at two eastern Mojave Desert sites: Death by short-term drought? Journal of Herpetology 37:169-177.

Kirkpatrick JF, Turner A. 2002. Reversibility of action and safety during pregnancy of immunization against porcine zona pellucida in wild mares (*Equus caballus*). Reprod Suppl. 60:197-202.

Kirkpatrick, J.F., and A. Turner. 2003. Absence of effects from immunocontraception on seasonal birth patterns and foal survival among barrier island horses. Journal of Applied Animal Welfare Science 6: 301-308.

Kirkpatrick, J.F., Rutberg, A.T., Coates-Markle, L. 2010. Immunocontraceptive Reproductive Control Utilizing Porcine Zona Pellucida (PZP) in Federal Wild Horse Populations (Third Edition). The Science and Conservation Center, ZooMontana, Billings Montana. Zoo Montana Website discussing Porcine Zona Pellucida an immunocontraceptive for horses

Madosky, J.M., Rubenstein, D.I., Howard, J.J., Stuska, S. In press. The effects of immunocontraception on harem fidelity in a feral horse (*Equus caballus*) population. Applied Animal Behaviour Science.

- Marlow, C. 1985. Controlling riparian zone damage with little forage loss. Fall 1985 Issue of Montana Agresearch. 2(3)1-7.
- Marshal, J.K. 1973. Drought, land use and soil erosion. P. 55-77. In: J.V. Lovett (ed.). The environmental, economic and social significance of drought. Angus and Robertson, Publ. Sydney, Australia.
- McNab, B.K. 2002. The Physiological Ecology of Vertebrates. Cornell University Press.
- Moseley, J.C., P.S. Cook, A.J. Griffis, and J O'Laughlin. 1997. Guidelines for managing cattle grazing in riparian areas to protect water quality: review of research and best management practices policy. Idaho Forest, Wildlife and Range Policy Analysis Group, Report No. 15. University of Idaho, Moscow, ID.
- Neel, L.A. 1980. Sage grouse response to grazing management in Nevada. M.S. Thesis. University of Nevada, Reno, NV. 48 pp.
- Nelson, K., E. Gray, and J. Evans. 2010. Finding solutions for bird restoration and livestock management: Comparing grazing exclusion levels. Ecological Applications DOI: 10.1890/10-0032
- Nonne, D., E. Blomberg, and J. Sedinger. 2011. Dynamics of greater sage-grouse (*Centrocercus urophasianus*) populations in response to transmission lines in central Nevada. Department of Natural Resources and Environmental Sciences, University of Nevada-Reno, NV.
- Nunez, C.M.V., Adelman, J.S., Mason, C., Rubenstein, D.I. 2009. Immunocontraception decreases group fidelity in a feral horse population during the non-breeding season. Applied Animal Behaviour Science 117:74–83.
- Nye County. 1994. Nye County Comprehensive Plan: April 5, 1994. Nye County Board of Commissioners . Internet WebSite: <http://www.nyecounty.net/DocumentView.aspx?DID=10894>. Accessed May 4, 2011.
- Peischel A. and Henry D.D. Jr. 2006. Targeted Grazing: A natural approach to vegetation management and landscape enhancement. Centennial, CO: Cottrell Printing.
- Porath, M.L., P.A. Momont, T. DelCurto, N.R. Rimbey, J.A. Tana.k.a., and M. McInnis. 2002. Offstream water and trace mineral salt as management strategies for improved cattle distribution. Journal of Animal Science. 80:346-356.
- Powell, D.M. 1999. Preliminary evaluation of porcine zona pellucida (PZP) immunocontraception for behavioral effects in feral horses (*Equus caballus*). Journal of Applied Animal Welfare Science 2:321–335.
- Ransom, J.I., Cade, B.S., Hobbs, N.T. 2010. Influences of immunocontraception on time budgets, social behavior, and body condition in feral horses. Applied Animal Behaviour Science 124:51–60.
- Reece, P.E., Alexander, J.D. and Johnson, J.R. (1991). EC91-123 Drought Management on Range and Pastureland: A handbook for Nebraska and South Dakota. Historical Materials from University of Nebraska-Lincoln Extension. Paper 1815. <http://digitalcommons.unl.edu/extensionhist/1815>.

Rotenberry, J.T. and J.A. Wiens. 1989. Reproductive biology of shrubsteppe passerine birds: geographical and temporal variation in clutch size, brood size, and fledging success. *Condor* 91:1-14.

Saab, V.A., C.E. Bock, T.D. Rich, and D.S. Dobkin. 1995. Livestock grazing effects in western North America. Pages 311-353 in T.E. Martin and D.M. Finch (eds.). *Ecology and management of neotropical migratory birds*. Oxford University Press, NY.

Schulz, T.T. and W.C. Leininger. 1991. Nongame wildlife communities in grazed and ungrazed montane riparian sites. *Great Basin Naturalist* 51:286-292.

Shumake, S.A., Wilhelm, E.S. 1995. Comparisons of effects of four immunocontraceptive treatments on estrous cycle and rutting behavior in captive white-tailed deer. Denver Wildlife Research Center, Colorado, USA.

Stevens, B.S. 2011. Impacts of fences on greater sage-grouse in Idaho: collision, mitigation, and spatial ecology. M.S. Thesis. University of Idaho, Moscow, ID.

Society for Range Management Task Group in Concepts and Terminology. 1995. New concepts for assessment of rangeland condition. *Journal of Range Management*. 48:271-282.

Tate, K. W., D. M. Dudley, N. K. McDougald, and M. R. George. 2004. Effect of canopy and grazing on soil bulk density. *Journal of Range Management* 57:411-417.

Teague, W.R., Dowhower, S.L., and Waggoner, J.A.. 2004. Drought and grazing patch dynamics under different grazing management. *Journal of Arid Environments* 58:97-117.

Thurrow, T.L. and C.A. Taylor JR. 1999. Viewpoint: The role of drought in range Management. *Journal of Range Management* 52(5):413-419.

Turner Jr, J.W., I.K.M. Lui, Rutberg, A., J.W., Kirkpatrick. 1997. Immunocontraception Limits Foal Production in Free Roaming Feral Horses in Nevada, J. Wildl. Manage. 61 (3):873-880.

Turner, A., Kirkpatrick, J.F. 2002. Effects of immunocontraception on population, longevity and body condition in wild mares (*Equus caballus*). *Reproduction Supplement* 60:187-195.

US Census Bureau. 1995. Nevada, Population of Counties by Decennial Census: 1900 to 1990. Internet Website: <http://www.census.gov/population/cencounts/nv190090.txt>. Accessed May 4, 2011.

\_\_\_\_\_. 2000. 2000 Census Summary Data. Internet Website: <http://www.census.gov/main/www/cen2000.html>. Accessed May 3, 2011.

\_\_\_\_\_. 2009. American Community Survey Data 2005-2009. Internet Web Site: <http://www.census.gov/acs/www/>. Accessed April 5, 2011.

\_\_\_\_\_. 2010. 2010 Census Summary Data. Internet Website: <http://2010.census.gov/2010census/data/>. Accessed May 3, 2011.

United States Government Accountability Office. (2008). Bureau of Land Management Effective Long-Term Options Needed to Manage Unadoptable Wild Horses (GAO-09-77). U.S. Government Accountability Office.

U.S. Fish and Wildlife Service. 1994. The desert tortoise (Mojave population) recovery plan. U.S. Fish and Wildlife Service, Region 1-Lead Region, Portland, Oregon. 73 pp. + appendices.

Volesky, J.D., Schacht W.H., and Waller, S.S. 1980. G80-504 Proper Livestock Grazing Distribution on Rangeland (Revised February 1996). Historical Materials from University of Nebraska-Lincoln Extension. Paper 1315.

Wasley, T. 2004. Mule deer population dynamics: issues and influences. Nevada Department of Wildlife, Biological Bulletin No. 14. Reno, NV.

Weisberg, P. (2010). Nevada Vegetation Overview. Retrieved January 20, 2012, from the Online Nevada Encyclopedia: [http://www.onlinenevada.org/nevada\\_vegetation\\_overview](http://www.onlinenevada.org/nevada_vegetation_overview)

Wiggins, D.A. 2005. Yellow-billed cuckoo: A technical assessment. USDA Forest Service, Region 6.

Willis, P., G.L. Heusner, R.J. Warren, D. Kessler, and R.A. Fayerer-Hosken. 1994. Equine immunocontraception using porcine zona pellucida: A new method for remote delivery and characterization of the immune response. *Journal of Equine Veterinary Science* 14:364-370.

Zoo Montana. 2000. Wildlife Fertility Control: Fact and Fancy. Zoo Montana Science and Conservation Biology Program, Billings, MT.

# **Chapter 8. Response to Public Comments Matrix**

This page intentionally  
left blank

No.	Commenter	Comment	BLM Response
1	Jeffery Biss  1 of 923	The Ely District's (EYDO's) "Drought Management Environmental Assessment (EA)" is a programmatic document that must either be amended to disclose site-specific information/data prior to taking action, or the EYDO must provide the public with future opportunities to comment on site-specific proposed actions tied to this programmatic document, as required by the National Environmental Policy Act (NEPA).	<p>The goals of the EA are to:</p> <ol style="list-style-type: none"> <li>1. Provide for the early detection of and response to drought conditions.</li> <li>2. Promptly identify and prevent further degradation of affected resources on lands afflicted by drought within the District.</li> <li>3. Provide for the rapid implementation of DRAs in order to alleviate the impacts of authorized uses and activities on natural resources that are at risk of being adversely affected by drought.</li> </ol> <p>The purpose of drought management is to maintain current health of plants and rangelands and avoid degradation of resources. The focus of the EA is not long-term but is short-term in nature to adjust management on a temporary basis during drought.</p> <p>The monitoring methods chosen are BLM approved methods. These methods were chosen due to the fact that they are quickly conducted. If and/or when a drought occurs, resources (including staff) will be limited. Robust monitoring is not realistic.</p> <p>Site-specific data will be collected. DRAs would be implemented through the issuance of full force and effect decisions pursuant to 43 CFR §4110.3-3(b), and would be implemented within all appropriate laws, regulations and policies. Full force and effect decisions would be supported by site-specific monitoring data collected as outlined in the DDMP and recorded on the attached Drought Monitoring Summary Form. Justification for wild horse and/or burro drought gathers would be thoroughly documented within a site-specific drought gather plan (see Attachment 3 of the revised EA for a Drought Gather Plan Outline).</p>
2	Jeffery Biss  1 of 923	Before any wild horse removals are implemented, the EYDO must accommodate current wild horse/burro numbers by using the agency's adaptive management mandate and its discretion through 43 C.F.R. 4710.3-2 and 43 C.F.R. 4710.5(a), which allows for the reduction or elimination of livestock grazing in order to improve conditions and forage availability for wild horses. No decision should be made to remove horses unless ALL livestock grazing has been halted for the preceding 12 months, and therefore livestock are not present in the area in question, and a decision is issued to prohibit livestock grazing in that area for a minimum of two years.	<p>Refer to the EA for more detailed information about monitoring documentation, issuance of Management Decisions public notification process. Monitoring of the Drought Response Triggers identified in the EA is ongoing, following the protocol in the DDMP. The goal of this EA is to facilitate prompt and efficient action if necessary to ensure animal welfare and avoid range degradation to the greatest extent possible.</p> <p>The WFRHBA requires that the BLM remove excess wild horses immediately; thus, adaptive management is not appropriate. If the BLM were to delay of a gather until that time is not consistent with the WFRHBA, PRIA or FLPMA, severe range degradation would occur and large numbers of wild horses or burros could suffer deterioration of</p>

No.	Commenter	Comment	BLM Response
		Presently, the EA envisions reductions or closure to livestock grazing on a seasonal basis only, to be reevaluated every year.	body condition and/or die. The District will not be evaluating HMAs for adjustment of AML at this time. Adjustment of AML would be done following the evaluation of long-term monitoring data in a Rangeland Health Evaluation which would also involve the interested public.
3	Jeffery Biss 1 of 923	As per the EYDO Resource Management Plan (RMP), fencing within the HMAs should be removed to ensure that wild horses can access all portions of the HMAs -- this is especially important in drought conditions.	Though efforts have been made to limit fences in HMAs, they do exist and often are in place due to the presence of private land, the need for livestock management or for fire or resource rehabilitation. There are no fences known to restrict wild horse or burro access to HMAs. Should information regarding fences be pertinent to the determination of DRAs, that information would be included in the documents identified above.
4	Jeffery Biss 1 of 923	There is no scientific basis for sex ratio skewing. I strongly oppose the proposal to skew sex ratios in excess of the proposed 60:40 male-female ratio. To create single sex, or near single sex, herds would destroy the wild horse society and would create herds that are no longer viable and sustainable. The BLM lacks any data or science to justify the unnatural skewing of sex ratios and this practice should not proceed without scientific rationale.	<p>The sex ratios of wild horse populations vary depending on specific environment or genetic parameters and usually range from those favoring studs (60:40) over mares to those favoring mares (40:60) over studs.</p> <p>As the EA states in the description of the Proposed Action for Wild Horses and Burros, this potential management action would be implemented only in extreme cases, and would be done in order to reduce the number of animals that would be removed, while considering the welfare of mares which typically do not fare as well in serious drought conditions due to the additional energy demands of lactation.</p> <p>The expected potential environmental impacts of this management action are presented in Section Environmental Consequences of the Wild Horse and burro DRAs, under the heading Sex Ratio Adjustment.</p> <p>Sex ratio adjustment is consistent with the provisions of the WFRHBA. The Act does not prohibit this method of population control.</p>
5	Jeffery Biss 1 of 923	As per the BLM Handbook, drought conditions are foreseeable and as such do not constitute an "emergency." Therefore, it is incumbent upon the BLM to take mitigating actions in order to fulfill the agency's requirement to protect wild horses. Given the drought conditions, it is imperative that all livestock grazing be immediately halted until which time the BLM can ensure the wellbeing of wild horses currently living on the range.	<p>Refer to DRAs for Livestock in Proposed Action. By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub.</p>

No.	Commenter	Comment	BLM Response
			L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.
6	Jeffery Biss 1 of 923	If wild horse removals do proceed, I support the BLM's decision, as outlined in the EA, to prioritize water/bait trapping operations over helicopter roundups, which subject animals who may already be compromised by drought conditions to extreme exertion and trauma.	Comment Noted
7	Jeffery Biss 1 of 923	This EA fails to adequately analyze the socio-economic impacts of the various proposed actions. While the EA outlines the possible costs to local communities of reducing or eliminating livestock grazing, it fails to evaluate the ongoing cost to American taxpayers of livestock grazing on public lands, as well as the cost of removing and warehousing wild horses and burros from this area. Therefore, an economic analysis of any proposed wild horse/burro removal plan must disclose all costs associated with the capture operation itself, as well as the costs for short- and long-term holding and adoption preparation for the horses removed from the range.	<p>The BLM has brought the most viable options for managing drought situations, and the most responsible way to ensure the welfare of the wild horses, burros and protection of the habitat. The WFRHBA does not authorize a cost-based decision-making process if excess horses are present. "Proper range management dictates removal of horses before the herd size causes damage to the range land." (118 IBLA 75).</p> <p>Removal of wild horses or burros due to drought conditions would be implemented as a last resort after consideration of other DRAs including removal of livestock.</p>
8	Jeffery Biss 1 of 923	I would like to take this opportunity to remind the BLM that the protection of wild horses is mandated by an act of Congress, whereas livestock grazing occurs entirely at the discretion of the Secretary of the Interior. Therefore, I urge this EA to be revised to prioritize removal of livestock over removal of horses in drought emergencies in the EYDO, where the BLM authorizes 43 times more forage to livestock than to wild horses.	<p>Refer also to DRAs for Livestock in EA. By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.</p>

<b>No.</b>	<b>Commenter</b>	<b>Comment</b>	<b>BLM Response</b>
9	Jeffery Biss  1 of 923	I would further like to emphasize that the EYDO Drought Management EA is a general, programmatic document and lacks the site-specific information necessary for the public to adequately comment on any proposed wild horse removals. Therefore it cannot be used as a blanket assessment to justify removal of horses/burros due to drought conditions. Further opportunities allowing public comment on site-specific information to justify removals must be provided.	<p>A full range of possible management alternatives and the potential impacts were analyzed in the EA. The EA analyzed alternatives and actions that could be taken during drought. The EA did not analyze wild horse and burro removal for non-drought conditions. As such, the DRAs analyzed in this EA would be applied only when drought conditions exist as identified by site-specific monitoring data. The reader is referred Proposed Action A. Drought Indicators, B., Drought Response Triggers, and the DDMP which detail the data that would be collected to determine the appropriate DRA, including wild horse or burro gathers. The EA also states that if it is determined that a drought gather is necessary that HMA-specific gather and removal objectives would be developed based on detailed environmental and animal conditions. This information would be provided in a site-specific Decision and Gather Plan. These documents would be made available to the interested public issued prior to the gather commencing. In response to this comment, additional clarification has been added to Section II. 2.0 of the Final EA.</p> <p>The goals of the EA are to:</p> <ol style="list-style-type: none"> <li>1. Provide for the early detection of and response to drought conditions.</li> <li>2. Promptly identify and prevent further degradation of affected resources on lands afflicted by drought within the DISTRICT.</li> <li>3. Provide for the rapid implementation of DRAs in order to alleviate the impacts of authorized uses and activities on natural resources that are at risk of being adversely affected by drought.</li> </ol> <p>The purpose of drought management is to maintain current health of plants and rangelands and avoid degradation of resources. The focus of the EA is not long-term but is short-term in nature to adjust management on a temporary basis during drought.</p> <p>The monitoring methods chosen are BLM approved methods. These methods were chosen due to the fact that they are quickly conducted. If and/or when a drought occurs, resources (including staff) will be limited. Robust monitoring is not realistic.</p> <p>Site-specific data will be collected. DRAs would be implemented through the issuance of full force and effect decisions pursuant to 43 CFR §4110.3-3(b), and would be implemented within all appropriate laws, regulations and policies. Full force and effect decisions would be supported by site-specific monitoring data collected as outlined in the DDMP and recorded on the attached Drought Monitoring</p>

No.	Commenter	Comment	BLM Response
			<p>Summary Form. Justification for wild horse and/or burro drought gathers would be thoroughly documented within a site-specific drought gather plan (see Attachment 3 of the revised EA for a Drought Gather Plan Outline).</p> <p>DRAs would be implemented through the issuance of full force and effect decisions pursuant to 43 CFR §4110.3-3(b), after consultation with, or a reasonable attempt to consult with, affected permittees or lessees, the interested public, and the state having lands or responsible for managing resources within the area.</p> <p>Full force and effect decisions would be supported by site-specific monitoring data collected as outlined in the DDMP and recorded on the attached Drought Monitoring Summary Form. Justification for Wild Horse and/or burro drought gathers would be thoroughly documented within a site-specific drought gather plan (see Attachment 3 for a Drought Gather Plan Outline).</p> <p>Opportunities for voluntary adjustments are considered by the District as a response to drought.</p>
10	Bonny Gatchel	<p>And, of course, you are also seeing that livestock is removed or lessened in numbers to save the range. But how can that be the case when you are going to renew grazing allotments? Horse numbers are miniscule compared to the number of livestock. What is your reasoning, exactly? Please be more specific than just a general announcement.</p>	<p>Analyzing impacts of livestock grazing is outside of the scope of the analysis. Refer to response 100. The BLM is mandated to restrict wild horses and burros to Herd Areas where the animals were located when the WFRHBA passed. The WFRHBA does not require equal numbers of wild horses to be managed on the public lands. AMLs are established and adjusted based on monitoring data which takes into account the availability of natural waters, perennial forage, and other factors which affect Thriving Natural Ecological Balance.</p>
11	Jude Evans	<p>In cases where there is question about drought ~ livestock should be kept off the range and the LEGAL "FEDERALLY" protected Wild Horses need to be provided water and REMAIN on their HOME LANDS...</p> <p>YES it really is that easy</p>	<p>Comment Noted</p>
12	Anna Tataki	<p>would like to comment (as someone who has america's wild horses in the mind and in the heart):</p> <p>There should not be implemented any wild horse removals, but there should be a reduction or elimination of livestock grazing in order to improve conditions and forage availability for wild horses.</p> <p>No decision should be made for wild horse removals unless ALL livestock</p>	<p>Refer also to DRAs for Livestock. By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife,</p>

No.	Commenter	Comment	BLM Response
		grazing has been halted for the preceding 12 months.	recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.  Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.
13	Anna Tataki	Fencing within the HMAs should be removed to ensure that wild horses can access all portions of the HMAs -- this is especially important in drought conditions. And therefore livestock are not present in the area in question, and a decision is issued to prohibit livestock grazing in that area for a minimum of two years. Presently, the EA envisions reductions or closure to livestock grazing on a seasonal basis only, to be re-evaluated every year.	Though efforts have been made to limit fences in HMAs, they do exist and often are in place due to the presence of private land, the need for livestock management or for fire or resource rehabilitation. There are no fences known to restrict wild horse or burro access to HMAs. Should information regarding fences be pertinent to the determination of DRAs, that information would be included in the documents identified above.  The District would evaluate site-specific environmental, animal and resource conditions and make appropriate adjustments to livestock in HMAs in order to protect wild horses and burros from drought impacts.
14	Cheryl Mitchell	I am an attorney in Spokane, Washington. I am a former chairperson of the Washington State Bar Association's Animal Law Section. My comments are my own and do not represent the views of either the Bar Association or the Animal Law Section. I have carefully followed the BLM's so-called horse management of wild horses. It is clear to me that private interests are calling the shots and that the BLM is ignoring public's views when it comes to protecting and managing wild horses.	Comment Noted.
15	Maya Spies	Please take the humane approach and provide water for wild horses during drought, as is provided to privately owned cattle. Live and let live. Thank you.	Temporary water hauls used to provide water for wildlife and/or wild horses and burros during drought would only utilize water sources for which the BLM holds shared water rights. The Drought Response Triggers identified in the EA are intended to prevent resource degradation not facilitate a means by which the BLM would violate existing water rights.  By implementing Drought Response Triggers for water, the BLM can identify if water quantities are insufficient to meet water demands for livestock, wildlife and wild horses and burros. A lack of available water often leads to the concentrated use of preferred areas, which may result in the uneven distribution of animal impacts (i.e., utilization). According to Teague et al. (2004), drought compounds the effects of herbivory, thereby, providing periods of accelerated deterioration. Implementing DRAs based on Drought Response

No.	Commenter	Comment	BLM Response
			Triggers will help ensure proper distribution and avoid resource degradation.
16	Virginia Williams	BLM Ely District authorizes nearly 18 times more forage to privately owned livestock than to federally-protected wild horses in this area. The agency allows a maximum of 1,695 wild horses vs. the annual equivalent of 30,239 cow/calf pairs to live in the District.	<p>Refer also to DRAs for Livestock in the EA. By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.</p>
17	Lynn Cruze	It is time for the BLM to start acting like stewards of the PUBLIC's interests instead of kowtowing to every whim of the ranchers. Cattle do far more to destroy grazing land than any other animal on earth. I know I used to help with cattle on our farm.	Comment Noted.
18	Sherry Oster	<p>"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Congress finds and declares that wild free-roaming horses and burros are living symbols of the</p> <p>historic and pioneer spirit of the West; that they contribute to the diversity of life forms within the Nation and enrich the lives of the American people; and that these horses and burros are fast disappearing from the American scene. It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found, as an integral part of the natural system of the public lands."</p> <p>~Public Law 92-195 THIS IS STILL THE LAW OF THE LAND</p>	<p>By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.</p>

No.	Commenter	Comment	BLM Response
19	Katie Fite  Biodiversity Director  Western Watersheds Project	An EIS must be prepared to establish a solid baseline, and assess the severely degraded grazed and treated lands – and all direct, indirect, and cumulative effects on them.	The impacts have been analyzed in EA and were not determined to be significant; therefore, preparation of an EIS is not necessary. .
20	Katie Fite  Biodiversity Director  Western Watersheds Project	It is critical that BLM fully take into account the current degree and severity of desertification that has occurred across these public lands due to chronic livestock grazing disturbance, BLM harmful “treatments” that destroy native woody vegetation, and livestock facilities such as spring developments that alter, destroy and reduce flows at natural water sources, stock ponds that block drainages and disturb and destroy downstream flows, wells that deplete aquifers, and pipelines punched into uplands that incrementally destroy sagebrush and pinyon-juniper uplands, and other effects.	Comment noted. Site-specific monitoring data as outlined in the EA and the DDMP (Attachment 1) would be used for the selection of appropriate DRAs. DRA would be implemented through full force and effect decisions pursuant to 43 CFR §4110.3-3(b), after consultation with, or a reasonable attempt to consult with, affected permittees or lessees, the interested public, and the state having lands or responsible for managing resources within the area.
21	Katie Fite  Biodiversity Director  Western Watersheds Project	Ely BLM must fully assess how all of its “treatments” are leading to increased site desertification and reduced ability of the land to buffer drought effects. The environmental destruction that the sagebrush and pinyon-juniper killing with herbicides, masticators, chaining, fire , chopping, hacking, crushing, plowing, and a combination of all  of these is resulting in hotter, drier sites that retain less water, and that are highly prone to cheatgrass and other weed invasion - especially under chronic grazing disturbance. These treatments are greatly exacerbating drought effects, and a full and honest analysis of these adverse impacts must be provided.	Comment noted. Site-specific monitoring data as outlined in the EA and the DDMP (Attachment 1) would be used for the selection of appropriate DRAs. DRA would be implemented through full force and effect decisions pursuant to 43 CFR §4110.3-3(b), after consultation with, or a reasonable attempt to consult with, affected permittees or lessees, the interested public, and the state having lands or responsible for managing resources within the area.
22	Katie Fite  Biodiversity Director  Western Watersheds Project	Desertified lands face even greater stress from any continued grazing disturbance during drought conditions. The extensive soil and microbiotic crust disturbance, and other adverse impacts of grazing under dry conditions, can pave the way for harmful cheatgrass and other weed expansion in subsequent years. Native plants in grazing-stressed desertified landscapes may be killed or greatly weakened by gazing during drought periods. Many native bunchgrasses are very long-lived, and their loss is long-term in sagebrush and other arid ecosystems. See Anderson BLM Technical Bulletin (2001). Anderson describes the adverse impacts of even	Comment noted. Site-specific monitoring data as outlined in the EA and the DDMP (Attachment 1) would be used for the selection of appropriate DRAs. DRA would be implemented through full force and effect decisions pursuant to 43 CFR §4110.3-3(b), after consultation with, or a reasonable attempt to consult with, affected permittees or lessees, the interested public, and the state having lands or responsible for managing resources within the area.  Comment noted. Please refer to pages 5-6 of the EA for a discussion on Drought Response Triggers. Specifically, those relating to utilization. Utilization triggers would require the activation of DRAs. The utilization triggers range from 25% to 30% depending on vegetation community.

No.	Commenter	Comment	BLM Response
		<p>one time use at levels of 40%. BLM routinely allows grazing to occur on lands where use at this level is applied.</p> <p>Even worse, since utilization is averaged over grass plants, and monitoring sites typically do not reflect areas of more intensive livestock use, many plants receive much greater than the damaging 40% utilization. Plus this level of use is not adequate to provide for sage-grouse nesting cover during any period. In many areas, 10% or less utilization and upland trampling standards are necessary – under normal conditions.</p>	
23	<p>Katie Fite Biodiversity Director Western Watersheds Project</p>	<p>During drought, native bunchgrass and other forb height will be less, and the relative impacts of livestock use in stripping essential cover, including residual cover for next year, will be greater.</p>	<p>Comment noted. The EA addresses the shorter growing season and reduced health and productivity of vegetation as a result of drought conditions. The Drought Response Triggers and DRAs are designed to reduce the impacts of authorized uses and activities on natural resources that are at risk of being adversely affected by drought.</p>
24	<p>Katie Fite Biodiversity Director Western Watersheds Project</p>	<p>Turnout simply should not be allowed in 2013 and other dry years across nearly all these lands, due to the level of depletion and degradation.</p>	<p>Comment noted</p>
25	<p>Katie Fite Biodiversity Director Western Watersheds Project</p>	<p>In any areas where turnout is allowed, large-scale reductions from actual use must be applied.</p>	<p>Comment noted.</p>
26	<p>Katie Fite Biodiversity Director Western Watersheds Project</p>	<p>The District’s lands and waters are already greatly stresses, and now drought adds to these stresses.</p> <p>Landscape-level desertification has occurred and continues in many areas due to significant livestock grazing and trampling disturbance effects.</p>	<p>Comment noted. The EA addresses the shorter growing season and reduced health and productivity of vegetation as a result of drought conditions. The Drought Response Triggers and DRAs are designed to reduce the impacts of authorized uses and activities on natural resources that are at risk of being adversely affected by drought.</p>
27	<p>Katie Fite Biodiversity Director Western Watersheds Project</p>	<p>Gold and other mine aquifer drawdown further reduces water flows and disrupts watershed processes, as does some recent geothermal and other development.</p>	<p>Mine and geothermal development impacts are addressed in the cumulative affects section of the EA. However, the detailed analysis of mine and geothermal development impacts are outside the scope of this EA.</p>

No.	Commenter	Comment	BLM Response
28	Katie Fite  Biodiversity Director  Western Watersheds Project	Climate change imposes even greater stresses on systems, and is likely to make them less able to rebound from drought effects.  In all livestock grazing actions, BLM must base long-term stocking on levels that can be supported under drought conditions, fully taking into account added stresses of climate change effects.	Please refer to response to comment 3.  As part of BLM's proactive management of public lands, the BLM will continue to identify the need for action through the Standards and Guidelines (S&Gs) evaluation process. Through S&G evaluations, allotments would be adjudicated to an appropriate level of use (i.e., permitted animal unit months [AUMs]) with consideration given to annual forage production during years of drought. Proper adjudication would minimize the need for future drought actions.  Following the completion of S&G evaluations and implementation of appropriate grazing management, future NEPA may be conducted to analyze direct, indirect and cumulative impacts of potential range improvement projects.
29	Katie Fite  Biodiversity Director  Western Watersheds Project	We are very opposed to new temporary or other fencing, and extremely opposed to the destructive and damaging water hauling. All that will do is shift and intensify livestock impacts into other areas, where severe impacts will occur. An EIS is necessary to understand and properly mitigate such impacts.	Temporary electric fences as well as other DRAs would be selected using site-specific information. The placement of temporary electric fences and other DRAs would only be authorized where appropriate. If electric fences are used, livestock utilization would be monitored and livestock would be required to be removed once forage is grazed to the stubble heights described in the Drought Response Triggers as discussed and analyzed in the EA.
30	Katie Fite  Biodiversity Director  Western Watersheds Project	6 inch stubble height and less than 10% bank trampling standards must be applied to all riparian areas. We recommend less than 10% stream/spring bank and meadow trampling as a trigger for livestock removal. This will help to protect springs, streams, meadows and springbrooks, and prevent irreparable damage. Riparian stubble height must be 6 inches.  All of these must be accompanied by significant reductions in livestock use.	The utilization and stubble height triggers are supported by research. Please refer Affected environment/Environmental Consequences of the EA for analysis of the triggers and discussion of supporting research and literature.  DRAs, including reductions in AUMs, would be based on site-specific data and implemented where appropriate.
31	Katie Fite  Biodiversity Director  Western Watersheds Project	In many sites, the excessive upland standards you are proposing will not provide sufficient residual nesting cover for sage-grouse.	Comment noted. Please refer to pages 5-6 of the EA for a discussion on Drought Response Triggers. Specifically, those relating to utilization. Utilization triggers would require the activation of DRAs. The utilization triggers range from 25% to 30% depending on vegetation community.
32	Katie Fite  Biodiversity Director  Western Watersheds Project	The EA Proposes changes such as grazing after Sept 30. in riparian areas. But in areas where there is limited water (as is the case in nearly all the BLM lands), if large herds are unleashed on these fragile sites, impacts will still be severe.	The utilization and stubble height triggers are supported by research. Please refer to Affected environment/Environmental Consequences of the EA for analysis of the triggers and discussion of supporting research and literature.  DRAs, including reductions in AUMs, would be based on site-specific data and implemented where appropriate.

No.	Commenter	Comment	BLM Response
33	Katie Fite  Biodiversity Director  Western Watersheds Project	We strongly oppose changes from cattle to sheep – as this is very likely to jeopardize bighorn herds. It will also alter any TNEB in wild horse herd areas, and will have different, and never-analyzed impacts as sheep use some areas differently than cattle.	Temporary changes in kind or class of livestock will be based on site-specific data. The EA has been updated to reduce potential intermingling of domestic sheep and bighorn sheep. Please refer to page 10 of the revised EA which now states that “Temporary changes from cattle to sheep would not be authorized in areas of known bighorn sheep habitat or areas within nine miles of know bighorn sheep habitat.”  The BLM is unaware of any findings that sheep use negatively impacts wild horses and burro habitat. A temporary change in kind or class of livestock is intended to improve management during drought, thus reducing the impacts of authorized uses during drought.
34	Katie Fite  Biodiversity Director  Western Watersheds Project	We oppose use of temporary fencing. It will only impair other fragile resources, shift and intensify impacts into sagegrouse and pygmy rabbit habitats, etc. One-time placement of electric fencing results in severe trailing impacts that can cause new gullies, large-scale degradation of uplands including destruction of mature and old growth sagebrush and other shrub patches. An EIS must be prepared to analyze such effects. There is already far too much harmful fencing across the BLM landscape.	Temporary electric fences as well as other DRAs would be selected using site-specific information. The placement of temporary electric fences and other DRAs would only be authorized where appropriate. If electric fences are used, livestock utilization would be monitored and livestock would be required to be removed once forage is grazed to the stubble heights described in the Drought Response Triggers as discussed and analyzed in the EA.
35	Katie Fite  Biodiversity Director  Western Watersheds Project	We strongly oppose any so-called “targeted grazing”. This is just creating vast sacrifice areas to further subsidize the livestock industry. This will just turn these areas into extraordinarily degraded dustbowls, and promote even worse weed problems in subsequent years. Plus, many of these areas are supposed to be managed for post-fire or other recovery, instead of as sacrifice zones to the very livestock herds that have so greatly degraded them in the first place. Where are all of these areas located?	Comment noted. For Drought responses targeted grazing would only be used based on the specifics outlined in the proposed action.
36	Katie Fite  Biodiversity Director  Western Watersheds Project	What is the current status of the populations of sage-grouse, pygmy rabbit and other wildlife in the District?	The EA analyzes wildlife and sensitive species based on the best available data per requirements of the (H-1790-1 ),- National Environmental Policy Act Handbook. The best available science was used to support NEPA analyses in this EA, which includes status of populations when available. When there is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, the species is designated a BLM Sensitive Species, per the BLM Special Status Species Management Manual (6840). Species that are designated as BLM

No.	Commenter	Comment	BLM Response
			Sensitive Species in Nevada are noted in the table in the Affected Environment section under Wildlife. Also, please refer to the Nevada Department of Wildlife's recently revised Nevada Wildlife Action Plan for statewide population trend information.
37	Katie Fite Biodiversity Director Western Watersheds Project	Detailed mapping and analysis of the ecological conditions of all native vegetation communities must be provided. How many are supposed to be rehabbed? Where have tax dollars been spent on rehab efforts?	Outside the scope of this EA. The purpose and need for action is to provide rapid response to address resource uses during drought situations to ensure rangeland health standards are met. There is no specific rehab in the drought EA.
38	Katie Fite Biodiversity Director Western Watersheds Project	We are very concerned that the existing AMLs do not fairly balance use between livestock (that get the lion's share) and horses. We are strongly opposed to BLM shifting any use to spring. It is time to end spring use in sage-grouse, pygmy rabbit, migratory bird, and other habitats as well as native vegetation communities.	Please refer to the EA for a discussion on DRAs. The DRA associated with a change in season of use proposes shifting the season of use to a time following the critical growth period and/or outside of the hot season. Spring and fall use was brought forward in the EA for monotypic invasive annual communities to target spring and fall growth of cheatgrass. This was analyzed to provide an opportunity to alleviate grazing pressure on other areas dominated by native species such as those that provide high habitat values as referenced in your comment.
39	Katie Fite Biodiversity Director Western Watersheds Project	No TNR of any kind can be allowed –it invites ecological damage, harms to sensitive species, and a raft of other conflicts.	No Temporary Non-renewable Grazing (TNR) has been proposed or analyzed as an option within the EA.
40	Katie Fite Biodiversity Director Western Watersheds Project	BLM must fully examine actual use of livestock, and develop a series of alternatives that remove or reduce livestock to levels one half or less of actual use as the highest number that can be grazed.	Partial reduction in AUMs as well as partial and complete closures of allotments have been analyzed in the EA. Specific reductions and closures will vary depending on site-specific conditions. DRAs would be implemented through the issuance of full force and effect decisions pursuant to 43 CFR §4110.3-3(b), after consultation with, or a reasonable attempt to consult with, affected permittees or lessees, the interested public, and the state having lands or responsible for managing resources within the area. Full force and effect decisions would be supported by site-specific monitoring data collected as outlined in the DDMP.

No.	Commenter	Comment	BLM Response
41	Katie Fite Biodiversity Director Western Watersheds Project	Some sage-grouse still collide with fences – no matter how many markers or glittery objects BLM put on fences.  Fence posts provide perches for brown-headed cowbirds. Beat-out areas that quickly develop in association with fences or water sites promote mesopredators, weeds, soil erosion, etc.	The EA analyzed the use of temporary electric fences constructed of 3/8 inch diameter fiberglass fence posts and two strands of electric fence polywire. Posts would be spaced 16 feet apart. The height of the fence would be 30 inches (hot wire) with the bottom wire being 20 inches (ground wire) above the ground. Signs warning of electric fence would be firmly attached to the fence at common crossing points and at ¼ mile intervals along the fence. All temporary fences would be authorized in writing and would be required to be removed once the drought is over or sooner as indicated by written notice signed by the authorized officer.  The fence design and materials are considered to be wildlife friendly. The posts and wire are highly visible and is considered to reduce the occurrence of collision. The combination of the wide post spacing (16 ft.) and pliable polywire minimize risks of injury resulting from collisions. The fence will give when impacted with the risk of injury being very low. The 3/8 inch diameter fiberglass posts have a small surface area and are not considered to provide suitable perching locations.
42	Katie Fite Biodiversity Director Western Watersheds Project	It is clear that the primary measure to protect public lands and waters in the District during drought must be to curtail livestock use and turnout. Wildlife habitats and populations are already reeling from the effects of drought.  Imposing even more intensive livestock use on portions of the environment is madness. Irreparable harm of weed invasion, watershed degradation, habitat loss, etc. will result.	Please refer to pages 5-6 of the EA for a discussion on Drought Response Triggers. Specifically, those relating to utilization. Utilization triggers would require the activation of DRAs. The utilization triggers range from 25% to 30% depending on vegetation community.
43	Katie Fite Biodiversity Director Western Watersheds Project	How degraded are lands from BLM’s failure to properly control livestock during last year’s extreme drought conditions? Effects of grazing during drought damaging soils, watersheds, microbiotic crusts, native vegetation communities, and quality and quantity of habitat for sensitive species may persist for many years. BLM must significantly reduce livestock far below actual use levels for 5 or more years following drought before allowing grazing to resume.	Monitoring for drought conditions and impacts is ongoing throughout the District.  Rest of comment is opinion.
44	Katie Fite Biodiversity Director Western Watersheds Project	BLM should cease conducting “treatments” that purposefully destroy or alter native woody vegetation during drought. Any vegetation destruction during this period further increases risk of poor recovery, cheatgrass wastelands resulting, etc.	Outside scope of this EA. Treatments would be subject to independent environmental analysis, which would address risks or impacts from drought on vegetation establishment.

No.	Commenter	Comment	BLM Response
45	Katie Fite  Biodiversity Director  Western Watersheds Project	BLM must apply significant consequences for any exceedances of use or unauthorized use – for example, mandatory reductions in AUMs for the next five years.	Comment noted.
46	JJ Goicoechea  President, Nevada Cattlemen's Association	While the Association respects the BLM's decision to actively respond and manage for drought conditions, we question the BLM's purpose and need to have an Environmental Assessment (EA) to provide management strategies to assist in management during drought. Is flexible management during drought not addressed in Land Use Plans (I.E. District Resource Management Plan), standards for rangeland health and guidelines for livestock grazing, or grazing term permit renewals?	This EA is specific to drought responses and considers other cumulative actions in it analysis, including grazing term permit renewals.
47	JJ Goicoechea  President, Nevada Cattlemen's Association	Finally, the Association considers an environmental assessment to manage drought on a district wide approach ineffective. Grazing management decisions should be site specific and completed on a case by case approach. Livestock grazing uses various grazing systems such as rest rotation, deferred grazing, dormant season use, and herding, to achieve rangeland health goals. A district wide environmental assessment cannot address each allotment specifically enough to understand varied grazing systems.	Outside of scope. This EA is specific with regard to drought responses and is not meant to replace site specific analysis for grazing systems.
48	JJ Goicoechea  President, Nevada Cattlemen's Association	Under legal requirements prompted by NEPA, proposed management actions must consider a range of alternatives. First, the Association would like to clearly state, this document is deficient of a range of alternatives. The proposed alternative is a grazing closure in which, livestock would be removed. The whole document is written to remove livestock at all costs before any other alternatives are considered. The Association understands there are grazing impacts from livestock but there are also grazing impacts from wild horses especially when overpopulated. Wild horse and burro populations in the State of Nevada exceed maximum AML by 7,103 as of December 13, 2012 ( <a href="http://www.blm.gov/wo/st/en/prog/whbprogram/history_and_facts/quick_facts.html">http://www.blm.gov/wo/st/en/prog/whbprogram/history_and_facts/quick_facts.html</a> ). Degradation to the rangeland resources and range improvements by overpopulated wild horses resulting in declining health and	The EA provides a list of DRAs that BLM would use either separately or in combination to reduce the impacts of authorized livestock grazing on natural resources during drought. See description of Proposed Action.  Land Use Plans contain general and specific goals and objectives to achieve over time. Drought was not considered to be an imminent phenomenon at the time of development of these plans and would also require more specificity than what was envisioned for the plans.  The request to consider an alternative to gather wild horse to AML is addressed in the EA in the section of Alternatives Considered but Eliminated.

No.	Commenter	Comment	BLM Response
		<p>welfare of wild horses' populations cannot be overlooked when considering responsiveness to drought conditions. Furthermore, to be in conformance with the Wild Free Roaming Horses and Burros Act of 1971, AML needs to be achieved for the health of the wild horses and rangeland resources. The Association requests BLM consider a range of alternatives. An alternative to gather wild horses to achieve AML was not considered, rather was suggested as a drought response action (DRA) to be used after grazing closures to livestock take place. If wild horses are not managed at AML, all other DRAs, even if implemented, will likely fail. <b>The Association questions whether the BLM truly considered a range of alternative as required by NEPA and the impacts overpopulated wild horses have on rangelands. Furthermore, the Association request BLM consider a range of alternatives in the Final EA.</b></p>	
49	<p>JJ Goicoechea  President, Nevada Cattlemen's Association</p>	<p>The draft EA specifically states BLM understands the importance of livestock grazing to the economy but continues to say, "Because BLM cannot conduct a thorough and accurate analysis of how permitted AUMs may affect individual ranchers economically, it is also not possible to predict accurately the consequences to ranches under AUM reductions" as stated on pg 55 of the EA. BLM is clearly refusing to complete a thorough analysis of the socioeconomic impact reductions in livestock grazing and permitted use can have. The understanding of the economic value of an AUM and impact to local economies is not a new concept and has abundant scientific information available. For example, the 70th Session of the Nevada Legislature appropriated funds that led to the development of the report, Nevada Grazing Statistics Report and Economic Analysis for Federal Lands in Nevada completed by Resource Concepts, Inc. <b>The Association asks BLM to either complete a socioeconomic analysis to include the result of reductions in AUMs or use information already completed such as in the report, Nevada Grazing Statistics Report and Economic Analysis for Federal Lands in Nevada.</b></p>	<p>As stated on page 45 of the revised EA, the BLM does not have access to individual permittee financial records and does not intend to request financial records from permittees for socioeconomic analysis purposes.</p> <p>In conducting the socioeconomic analysis for this EA, BLM referred to BLM Washington Office Instruction Memorandum (IM) No. 2012-070 which identifies a direct estimated cost to Nevada permittees for alternative forage in Nevada (average private land grazing lease rate). The proposed action (page 5, Section 2, of the EA) implements a protocol which may include reducing AUMs on a site specific basis and other actions to protect resources. The socioeconomic analysis employed by BLM fits within the scope of the action; while the broader ( historical, wholesale AUM decline) analysis proposed by the commenter does not. Moreover, the Nevada Grazing Statistics Report was published March 26, 2001 and is outdated. The BLM is required to rely on best available information while conducting impact analysis. As IM No. 2012-070 was issued in 2012, BLM relied on it as the best available information to conduct the socioeconomic analysis for this EA.</p> <p>Additionally, the intent of implementing DRAs is to protect rangeland health to ensure the sustainability of livestock grazing on public lands managed by the Ely District Office. Though DRAs may have short-term impacts to livestock operators, long-term economic benefits are expected as a result of reduced impacts to range resources during drought thus reducing potential for future AUM reductions due</p>

No.	Commenter	Comment	BLM Response
			<p>to rangeland degradation if identified through S&amp;G evaluations.</p> <p>DRAs are intended to be applied on a case-by-case basis using site-specific information. If implemented, the DRAs would remain in effect during the duration of the drought or until site-specific conditions are improved as identified through written notice signed by the authorized officer. Implementation of DRAs will not modify the Terms and Conditions of livestock grazing permits.</p>
50	JJ Goicoechea  President, Nevada Cattlemen's Association	<p>The draft EA is contradictory of Nevada water law. Nevada water law has two primary principles, prior appropriation and beneficial use. Prior appropriation is unmistakably refers to "first in time, first in right." A person or entity must prove beneficial use of the water allocated. Beneficial use can be irrigation, mining, stock watering, recreation, commercial, industrial and municipal uses. BLM is concerned with the availability of water for wild horses but, refuses to acknowledge the owner of the permitted water rights, the livestock producer. <b>The Association requests BLM provide management strategies for available water in consideration of livestock producers who have obtained permitted water rights in accordance with Nevada water law. Furthermore, the Association requests BLM define within the final EA how water needs will be met to provide for wild horses in accordance with Nevada water law.</b></p>	<p>Temporary water hauls used to provide water for wildlife and/or wild horses and burros during drought would only utilize water sources for which the BLM holds shared water rights. The Drought Response Triggers identified in the EA are intended to prevent resource degradation not facilitate a means by which the BLM would violate existing water rights.</p> <p>By implementing Drought Response Triggers for water, the BLM can identify if water quantities are insufficient to meet water demands for livestock, wildlife and wild horses and burros. A lack of available water often leads to the concentrated use of preferred areas, which may result in the uneven distribution of animal impacts (i.e., utilization). According to Teague et al. (2004), drought compounds the effects of herbivory, thereby, providing periods of accelerated deterioration. Implementing DRAs based on Drought Response Triggers will help ensure proper distribution and avoid resource degradation.</p>
51	JJ Goicoechea  President, Nevada Cattlemen's Association	<p>In semi-arid rangelands, drought conditions are not uncommon. At the start of this document, BLM provides the definition of drought from Society of Range Management, "a prolonged chronic shortage of water, as compared to the norm, often associated with high temperatures and winds during spring, summer, and fall." However, the application of the monitoring methodologies outlined in this document are subjective to the person completing monitoring and are not reflective of the best monitoring methods to support the definition provided. For example, the Drought Monitoring Worksheet collects monitoring information for utilization and soil water classification. Monitoring data should always be collected for utilization and soil water classification and, when combined over many years' data, can help suggest adaptive management strategies best for rangeland health. But</p>	<p>This is explained in the EA. Comment Noted.</p>

No.	Commenter	Comment	BLM Response
		<p>when applied here, the BLM has the capability to monitor when they choose, making decisions based on a possible biased monitoring data collection. These methodologies cannot assist the BLM in determining whether the area suffers from “a prolonged chronic shortage of water,” but rather trigger a drought response action. <b>The Association request the BLM clarify how BLM will determine rangelands are experiencing a drought.</b></p>	
52	<p>JJ Goicoechea  President, Nevada Cattlemen’s Association</p>	<p>Many of the drought response actions (DRAs) suggested by BLM can already be implemented by BLM or the permittee through adaptive management strategies. By coordinating and consulting with affected permittees, change in duration, change in season of use, change in livestock management practices or targeted grazing of invasive annual dominated communities can be used. Other DRAs such as change in kind or class of livestock would need further assessment and cannot possibly be used as promptly as suggested in the EA. <b>The Association suggests the BLM review the DRAs defined for livestock grazing and further clarify how these DRAs can be employed without further assessment or if an EA is really needed to employ some of the DRAs.</b></p>	<p>Comment Noted.</p>
53	<p>JJ Goicoechea  President, Nevada Cattlemen’s Association</p>	<p>Public lands are to be managed in accordance with the intent of Congress as stated in FLPMA (43 U.S.C. 1701 et seq.), under the principles of multiple use and sustained yield. The Association believes this requirement is not being met with the EA completed. The Association supports the BLM active approach to manage grazing under drought conditions and development of a drought policy. However, the Association believes this needs to be a collaborative effort involving effected stakeholders, state agencies, federal agencies and range management professionals. The Association further request BLM to coordinate with University of Nevada Reno range management specialists to ensure sound science is being incorporated to the drought EA at minimal but suggest a collaborative effort would a better use of time and planning for drought.</p>	<p>The BLM uses best available science and data which includes site specific data, review of applicable journal articles. The BLM also coordinates with local universities to train staff for riparian assessments and the use of various range data.</p>

No.	Commenter	Comment	BLM Response
54	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The BLM Ely District manages 11.5 million acres of public land that includes 238 livestock grazing allotments and six wild horse Herd Management Areas (HMAs) on BLM lands, as well as two Wild Horse Territories on Forest Service lands. The Ely District currently permits the annual equivalent (meaning for 12 months of the year) of 30,239 cows to graze in the District and only a maximum of 1,695 wild horses. Even if the current wild horse population were accommodated through the reduction in livestock grazing, wild horses would continue to only make up a very small percentage of the livestock grazing in the District. The BLM Ely District should not further exacerbate this discrimination against wild horses during a drought. Livestock grazing, which the BLM Ely District permits, consumes 95% of the range resources. This excessive livestock grazing must undergo any and all grazing reductions during a drought period. Wild horses – who are only allocated at most 5% of the resources (high “Allowable Management Level” (AML) is 1,695 horses) and according to current population estimate of 2,498 wild horses utilize just 11% of resources. In order for the BLM to appropriately respond to current and future drought conditions, livestock grazing must be given the appropriate weight and proposed actions must be proportionate to the problems created by the disproportionate amount of livestock grazing permitted.</p>	<p>By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.</p> <p>Current horse population estimates will be in the final EA.</p>
55	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The BLM’s adaptive management approach provides the discretion necessary to re-evaluate population levels – such as AMLs. Social and legal, as well as biological, factors play a role in AML and “excess” determination. The economic realities of a fiscally unsustainable program, which currently stockpiles approximately 50,000 wild horses in government holding facilities at a cost to taxpayers of nearly \$50 million annually. Strong public sentiment against wild horse removals and in favor of maintaining wild horses on the range <i>must</i> be a determining factor in how the Ely District manages the public lands under its jurisdiction.</p>	<p>The WFRHBA requires that the BLM remove excess wild horses immediately; thus, adaptive management is not appropriate. If the BLM were to delay of a gather until that time is not consistent with the WFRHBA, PRIA or FLPMA, severe range degradation would occur and large numbers of wild horses or burros could suffer deterioration of body condition and/or die. The DISTRICT will not be evaluating HMAs for adjustment of AML at this time. Adjustment of AML would be done following the evaluation of long-term monitoring data in a Rangeland Health Evaluation which would also involve the interested public.</p>

No.	Commenter	Comment	BLM Response
56	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>We urge that the Ely District prioritize range management tools in its Drought Management in HMAs, including the proactive repair and enhancement of water resources, removal of fencing as outlined in</p> <p>its 2008 Resource Management Plan (RMP) – this should be undertaken immediately, if all such fencing has not already been removed – to prevent “escalating” conditions which may lead the agency in direction of wild horse removals when in fact these animals could have been managed on the land with proper proactive actions.</p>	<p>Refer to Response to comment 3. The DISTRICT is undergoing monitoring of existing waters, both natural and developed within HMAs to assess the availability of water for wild horses and burros (as well as forage). Drought conditions affect water sources throughout various HMAs very differently. Additionally, the abundance of natural and developed waters varies from HMA to HMA. In many cases, there are simply very few waters available, and if they go dry due to drought, action may be necessary. If water hauling alone is not sufficient to maintain the animals through the 2012 summer and 2013 winter due to drought coupled with over population of wild horses or burros above the AML, then drought gathers could become necessary.</p>
57	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>In addition, AWHPC urges that the Ely District disclose, in future NEPA documents relating to specific Drought Management proposed actions, <i>all commercial utilization</i> in the specific areas for the proposed action. It is well known that geothermal/fluid mineral development and other commercial uses consume large quantities of water. <i>All commercial uses permitted by the BLM should clearly outline the aquifers, springs, seeps and other water sources utilized and the impact these water sources have on the overall availability of water in the area.</i> In addition, given the</p> <p>drought conditions, quantities of water usage should be disclosed for each instance of water usage on the affected BLM lands.</p>	<p>Mine and geothermal development impacts are addressed in the cumulative affects section of the EA. However, the detailed analysis of mine and geothermal development impacts are outside the scope of this EA.</p>
58	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>If wild horses are removed and returned to the range, population growth suppression strategies that involve permanent sterilization (i.e. surgical or chemical castration of stallions or spaying of mares), the use of drugs with unproven safety records and the skewing of sex ratio should be prohibited, due to the adverse impact these actions have on the natural horse behavior and herd dynamics. If any of such actions are included as a proposed action or alternative action all scientific justification for such a proposal must be included in the EA.</p>	<p>The Proposed DRAs do not include castration, sterilization or spaying.</p> <p>Fertility control vaccine (PZP-22) and sex ratio adjustment are the only population control methods analyzed. The WFRHBA provides that determinations will be made “... whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels)...” [emphasis added].</p> <p>The Food and Drug Administration (FDA), The Humane Society of the United States (HSUS), and animal care committees all carefully review protocols for PZP use, and more than 20 years of data, carried out under these set of rules, clearly show that wild horses are neither injured by this drug, nor do aberrational behaviors occur as a consequence of its application. Oversight by HSUS assures that the vaccine is used only to slow reproduction and may not be used for the extermination of entire</p>

No.	Commenter	Comment	BLM Response
			herds. PZP is designed to bring about short-term infertility and is reversible, reduces the need for gathers and preserves the original gene pool in each herd (Kirkpatrick et al. 2010). The HSUS strongly supports an increase in the use of fertility control – specifically the Porcine Zona Pellucida (PZP) immunocontraception vaccine . . . . to slow population growth (HSUS, 2010).
59	Deniz Bolbol  American Wild Horse Preservation Campaign	If a Catch-Treat-Release (CTR) roundup is included as a proposed action or alternative action, AWHPC recommends that the provisions outlined in the attached draft CTR Standard Operating Procedure (See Attachment 2) be incorporated to ensure humane treatment.	Catch-Treat-Release was not part of proposed action; it does not meet the purpose and need.
60	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The EA must consider the following requirements, in the a proposed action or site-specific EA, to minimize stress and injury to horses during roundups:</p> <p>Limit the distance horses may be chased by a helicopter to no more than five (5) miles.</p> <p>Require that the helicopter <i>not</i> chase/move horses at a pace that exceeds the natural rate of movement of the <i>slowest</i> animal in the band. Every effort should be made to keep older, sick and young animals together with their bands as they are moved into the trap.</p> <p>If there are compromised, old, weak or young animals in a small band – the helicopter should not move or capture those animals.</p> <p>Establish strict parameters for suspending helicopter roundup operations in temperatures below freezing or over 90 degrees F.</p>	As noted in the proposed action the BLM would include a summary of the data, and rationale for the removal numbers in the Decision and attached gather plan issued prior to a gather commencing.
61	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>Unlike fires, droughts do not emerge overnight. Drought conditions develop over time, and since the BLM has had ample warning, the situation cannot be considered an emergency under this definition.</p> <p>Therefore the BLM must take proactive actions to prevent the implementation of any wild horse removals and to prevent any situations from “escalating.”</p>	The completion of the EA is intended to be a proactive, responsible measure in anticipation of severe drought conditions. The EA would allow for the early detection of and response to drought, prompt identification and prevention of degradation and rapid implementation of DRAs. The EA includes a comprehensive collection of potential actions that could be implemented alone or in combination in order to protect rangeland health and prevent widespread suffering or death of wild horses or burros, including water hauling, livestock removal or reduction and as a last resort, removal of wild horses or burros from the range. The goal is to implement an action before the range is severely degraded or animal body condition deteriorates.

No.	Commenter	Comment	BLM Response
			Monitoring is ongoing to evaluate current conditions and identify potential areas of concern.
62	Deniz Bolbol  American Wild Horse Preservation Campaign	The agency clearly has had knowledge of a developing situation with regard to water and forage availability, yet it is unclear what preventative management actions the Ely District is taking to mitigate any possible or alleged need to remove wild horse. The EA must disclose specific preventative management actions which have been taken over the past year to address the drought conditions and mitigate any possible need for the removal of any wild horses.	BLM monitors for drought on a regular basis, depending on need and severity. This EA would allow for a rapid response to drought.
63	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The EA must fully disclose, describe and analyze <i>specific</i> range data, water availability, range usage, and the agency's intended actions in <i>specific</i> areas and allow the public ample opportunity to review the data and comment on the proposed action, as required by NEPA. The BLM must also disclose the following for any proposed actions:</p> <p>All data on <i>site-specific</i> livestock usage within <i>site-specific</i> HMAs, including months of use; specific number of cattle in specific areas; if and when cattle were moved or removed due to drought.</p> <p>A detailed description of any and all fencing that may prohibit the wild horses having full, yearround access to <i>site-specific</i> HMAs.</p> <p>A detailed listing, for <i>each site-specific proposed action</i>, of all water sources for livestock, wild horses and other wildlife species throughout <i>specific</i> HMAs.</p> <p>Full disclosure of any other <i>site-specific</i> pertinent information/data that is considered by the agency in determining the "emergency" or "escalating" situation that would necessitate the removal of horses.</p>	<p>Though efforts have been made to limit fences in HMAs, they do exist and often are in place due to the presence of private land, the need for livestock management or for fire or resource rehabilitation. There are no fences known to restrict wild horse or burro access to HMAs. Should information regarding fences be pertinent to the determination of DRAs, that information would be included in the documents identified above.</p> <p>Information pertaining to available water sources would presented in the documents identified above.</p> <p>Data will be collected and available for review for any decisions as a result of this EA per the EA proposed action drought response indicators.</p>

No.	Commenter	Comment	BLM Response
64	Deniz Bolbol  American Wild Horse Preservation Campaign	AWHPC would like to review such site-specific data, consult with range experts and provide comment on such possible future proposed actions. The current EA fails to provide any <i>site-specific</i> information whatsoever and is therefore denying our organization and other members of the public the opportunity to provide input on the plan.	The reader is referred to A. Drought Indicators, B., Drought Response Triggers, and the DDMP which detail the data that would be collected to determine the appropriate DRA, including wild horse or burro gathers. The EA also states that if it is determined that a drought gather is necessary that HMA-specific gather and removal objectives would be developed based on detailed environmental and animal conditions. This information would be provided in a site-specific Decision and Gather Plan. These documents would be made available to the interested public issued prior to the gather commencing.
65	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The EA outlines the possibility to skew sex ratios as a way to suppress population growth and outlines the possibility to remove mares/foals during drought conditions. It must be noted that</p> <p>absolutely no data was provided to substantiate the following claim made in the EA: <i>It is possible that a situation may warrant the removal of only mares and foals due to the fact that 1) they are typically the most affected by the limited resources and 2) it is determined that sufficient</i></p> <p><i>resources exist to support a larger number of studs. In this case, mares and foals would be gathered and removed from the drought affected area and BLM would release studs back to the range. This scenario could result in sex ratios in the remaining population exceeding 60% studs.</i> This alternative action is highly controversial management approach, if implemented would be precedent setting and cannot be implemented without a full Environmental Impact Statement (EIS) review which would allow the agency and public to review scientific justification for such action, review of research, data and short- and long-term impacts to individual wild horses and herds as a whole.</p>	<p>The sex ratios of wild horse populations vary depending on specific environment or genetic parameters and usually range from those favoring studs (60:40) over mares to those favoring mares (40:60) over studs.</p> <p>As the EA states the description of the Proposed Action for Wild Horses and Burros, this potential management action would be implemented only in extreme cases, and would be done in order to reduce the number of animals that would be removed, while considering the welfare of mares which typically do not fare as well in serious drought conditions due to the additional energy demands of lactation.</p> <p>The expected potential environmental impacts of this management action are presented in Environmental Consequences of the Wild Horse and burro DRAs, under the heading Sex Ratio Adjustment.</p>
66	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The National Environmental Policy Act (NEPA) requires agencies to prepare an EIS regarding all “major Federal actions significantly affecting” the environment, 42 U.S.C. § 4332(C), and the CEQ</p> <p>implementing regulations set forth a number of criteria governing when an action is to be considered “significant” for this purpose. 40 C.F.R. §1508.27.</p> <p>The alternative action if implement “may establish a precedent for future actions with significant effects,” since it would</p>	<p>The sex ratios of wild horse populations vary depending on specific environment or genetic parameters and usually range from those favoring studs (60:40) over mares to those favoring mares (40:60) over studs.</p> <p>As the EA states the description of the Proposed Action for Wild Horses and Burros, this potential management action would be implemented only in extreme cases, and would be done in order to reduce the number of animals that would be removed, while considering the welfare of mares which typically do not fare as well in serious drought conditions due to the additional energy demands of lactation.</p>

No.	Commenter	Comment	BLM Response
		<p>be a first-of-its kind action implementing a proposed broad strategy for population management set forth in the Interior Secretary’s Strategy for the Future of the Wild Horse</p> <p>and Burro Program. The BLM lacks any studies, papers or concrete data relating to the impact to individual horses, bands and/or herds, sex ratio skewing; without the completion of significant scientific studies which outline and understand the implications of sex ratio skewing on the range must be eliminated as an alternative management method.</p> <p>Currently there is no empirical data which sets natural sex ratios at 50/50 therefore the negative impact of sex ratio skewing remains unknown. If sex ratio skewing is proposed as a future proposed action, then an EIS is required to thoroughly analyze its potential behavioral and social impacts on individual horses, female horses, the herd and environment. Scientific justification for, or analysis of, the impacts on natural herd dynamics must be provided. Other BLM field offices have examined the impacts of sex ratio skewing.</p> <p>The BLM acknowledges the negative impacts on artificial skewing of the sex ratio by stating in the Burns District Office Environmental Assessment (DOI-BLM-OR-B060-2010-0005-EA) page 32 that:</p> <p>“If selection criteria leave more stallions than mares, band size would be expected to decrease, competition for mares would be expected to increase, recruitment age for reproduction among mares would be expected to decline, and size and number of bachelor bands would be expected to increase. Skewing the sex ratio of stallions v. mares would result</p> <p>in a destabilization of the band (stallion, mare and foal) structure moving it from five to six animals to three animals. Social band structure will be lost resulting in combative turmoil as surplus stallions attack a band stallion trying to capture his mare. This could result in the foal being either killed or lost. The mare and foal will not be allowed to feed or water naturally as the stallion tries to keep them away from the bachelor bands of stallions,</p>	<p>The expected potential environmental impacts of this management action are presented in, Environmental Consequences of the Wild Horse and burro DRAs, under the heading Sex Ratio Adjustment.</p>

No.	Commenter	Comment	BLM Response
		<p>resulting in stress to the mare during her lactation condition.”</p> <p>The EA fails to provide any research or data on the impacts to the range, individual horses, wild horse herds as a whole on the impact of skewing sex ratios. Due to this lack of data and analysis, it is clear that the BLM is required to prepare an EIS before implementing this action.</p>	
67	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>The EA fails to adequately analyst the socio-economic impacts of the various proposed actions. The EA only analyzed the impact to rural communities, and failed to analyze the impact to the American taxpayer for all of the management approaches outlined.</p> <p>The Ely District currently permits the <i>annual equivalent</i> (meaning for 12 months of the year) of 30,239 cows to graze on our public lands. The EA estimated that <i>if</i> livestock grazing were eliminated from Ely District these private cattlemen, who get below-market rate of \$1.35 per cow/per month to graze on our public lands, had to pay the going rate of \$13.00 per cow/per month to graze on private land it would cost them cost them an additional \$4,717,297.00 (assuming 2012 estimated rates). But the EA completely fails to analyze any costs to the American taxpayer. In fact, the EA outlines that “BLM Ely District would not collect up to \$489,873.15” if livestock grazing were eliminated – yet the EA fails to outline the agency costs for permitting this livestock grazing and the broader federal government costs for permitting this private commercial grazing on public lands. Indeed, if the EA is to analyze soci-economic impacts, the impact to the American taxpayer cannot be ignored. Costs for fencing, range monitoring and management, range improvements, federal and state predator kill programs, state and federal assistance programs for District livestock permittees and all other taxpayer funded services and amenities provided to livestock permittees must be equally disclosed and analyzed in the EA.</p> <p>Most glaring is the EA’s failure to disclose the BLM costs for removing wild horses from public lands. Despite the millions of dollars associated with nearly every BLM roundup of wild horses, the EA ignores</p>	<p>The BLM has brought forward the most viable options for managing drought situations, and the most responsible way to ensure the welfare of the wild horses, burros and protection of the habitat. The WFRHBA does not authorize a cost-based decision-making process if excess horses are present. “Proper range management dictates removal of horses before the herd size causes damage to the range land.” (118 IBLA 75).</p> <p>A range of options has been identified in anticipating and managing responses to Drought effects on the Public Resources. BLM has advanced a methodology and priorities in selecting responses (Drought Response Actions - DRAs). In fact, removal of wild horses or burros due to drought conditions would be implemented as a last resort after consideration of other DRAs including removal of livestock.</p> <p>A complete Socio economic analysis of all effects across legally required and mandated BLM programs is beyond the scope of this analysis.</p>

No.	Commenter	Comment	BLM Response
		<p>these substantial costs and instead outlines that removing wild horses would temporarily bring money to the local community: <i>impacts to socioeconomics would be temporary in nature and would cease upon gather completion.</i></p> <p>These impacts would consist of hiring contractors to conduct the gather operations, and contributions to local economies/towns for food and lodging during gather operations.</p> <p>This BLM attitude is telling as the BLM continues to make plans to roundup and warehouse more wild horses as the agency has more than 50,000 wild horses already stockpiled in government holding facilities at a cost of more than \$50,000,000 each year. It is the exactly the attitude found throughout the EA that is the precise problem which plagues the BLM – the biased approach to managing public lands, the refusal to fairly look at allocations and attribute damage to the range by the animals which consume the majority of the resources and the agency’s ongoing scapegoating of wild horses for any range problems that have truly resulted from the agency’s grotesque mismanagement of livestock grazing. The ongoing cost to American taxpayers of livestock grazing on public lands, as well as the cost of removing and warehousing wild horses <i>must</i> be itemized as a socio-economic impact.</p> <p>AWHPC is specifically interested in evaluating and providing comments on this information which is omitted in the current EA. We are specifically interested in an economic analysis of any proposed wild horse removal plan and disclosure of all costs associated with the capture operation itself, as</p> <p>well as the costs for short- and long-term holding and adoption preparation for the horses removed from the range.</p>	

No.	Commenter	Comment	BLM Response
68	Deniz Bolbol  American Wild Horse Preservation Campaign	<p>NEPA requires Federal agencies to consider environmental effects that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. Thus, BLM must consider both legal and social factors, in making land use decisions such Drought Management and proposed actions regarding grazing allocations and wild horse management. This was highlighted in a 1982 National Research Council report on the BLM's Wild Horse and Burro Program:</p> <p>Attitudes and values that influence and direct public priorities regarding the size, distribution, and condition of horse herds, as well as their accessibility to public viewing and study, must be an important factor in the determination of what constitutes excess numbers of animals in any area. . . [A]n otherwise satisfactory population level</p> <p>may be controversial or unacceptable if the strategy for achieving it is not appropriately responsive to public attitudes and values. . . .</p> <p>Biologically, the area may be able to support 500 cattle and 500 horses, and may be carrying them. But if the weight of public opinion calls for 1,000 horses, the area can be said in this context to have an excess of 500 cattle. For these reasons, the term excess has both biological and social components. In the above example, biological excess constitutes any number of animals, regardless of which class above 1,000.</p> <p>Social excess depends on management policies, legal issues, and prevailing public preference..”</p> <p>The public opposition is evidenced by the thousands of letters sent to the BLM Ely District regarding the Drought Management EA. This public opposition to removing wild horses and/or sex ratio skewing constitutes a “prevailing public preference” that all wild horses remain on the range and that livestock be removed. This fact provides sufficient reason for BLM to reanalyze the proposed actions outlined in the EA and the inequitable division of resources within this District, taking into account the public’s preference</p>	The EA considered impacts to a variety of resources including those listed as supplemental authorities that are considered under NEPA. Also, the BLM Ely Dist. received less than 1,000 comment letters, and not all letters opposed to wild horse gathers and management. The rest is opinion.

No.	Commenter	Comment	BLM Response
		<p>that wild horses be left on the range. This strong public preference should also mandate BLM to fully consider all alternatives that would accomplish this goal and avoid the mass capture and removal of wild horses from their home in this public lands area.</p>	
69	<p>Deniz Bolbol  American Wild Horse Preservation Campaign</p>	<p>The Ely District established 15 herd areas through the Ely District ROD and Approved Resource Management Plan (RMP) dated August 2008. The Ely District in its 2008 RMP zeroed out wild horses in 16 Herd Areas (HAs) that encompasses over 1.8 million acres. Americans overwhelmingly oppose this action. The EA outlines that wild horses still reside in a number of these areas. We oppose the removal of all wild horses from any of these areas as we believe that such action is illegal under the Wild Free Roaming Horses and Burros Act. If there are forage and water resources sufficient for livestock in these areas, then there are conditions that are suitable for wild horses, and the EA outlines that horses in these areas are subject to removal yet fails to provide any justification whatsoever for the removal of horses from these areas. Zeroing out these areas is inconsistent with the Wild Free Roaming Horses and Burro Act. The BLM is not authorized to zero out a wild horse herd area or herd management area. Thus, to the extent that such removals are in furtherance of that illegal objective, it must be set aside. This is not outside the scope of the current EA, which is supposed to analyze the consistency of the proposed action with existing laws and regulations.</p>	<p>Comment noted. Outside of the scope of this EA.</p>
70	<p>Deniz Bolbol  American Wild Horse Preservation Campaign</p>	<p>The Ely District must ensure transparency of the management of wild horses in all of the agency's actions and proposed actions under any Drought Management plan. This transparency extends to providing meaningful public observation opportunities during any roundup or trapping operations. Public observation throughout each day of the operation should be outlined in future Drought Management related EAs. This includes scenarios when the District intends to locate the trap site or holding corrals on private land – in which case if the land owner does not agree to public access, the BLM should identify alternative property on which to conduct the government operation. It is important that the public be allowed to observe all horses brought</p>	<p>Outside of scope of this EA. Should any drought gathers be necessary, a public visitation plan would be developed prior to commencement which would include logistical and management activities to ensure the safety of the animals, the public, BLM staff and the contractors. The District would make every attempt to provide meaningful viewing opportunities to the public while ensuring safety, and following existing law and policy. EAs are intended to evaluate environmental impacts of proposed actions, and not to outline public observation.</p>

No.	Commenter	Comment	BLM Response
		<p>into the trap, all horses at holding facilities and the release of all horses. The public must be allowed to arrive at the trap prior to the first horses brought into the trap and remain until after the last horses are brought in that day. In order to provide meaningful proximity to the trap site for public observation, the BLM may establish an observation “pool” by which a small number of individuals are allowed within close proximity to the trap to observe and document the animals and operation. The individuals in the pool would alternate with other public observers present. The Ely District must ensure that transparency is a cornerstone of all of its management and operations.</p> <p>Should the EA include as a proposed action or alternative action the use of a helicopter to roundup wild horses, it must also include that real-time cameras with GPS are installed on all helicopters used in roundup operations and video should be live streamed on the Internet. This will improve the transparency of roundup operations and enable the BLM and public to monitor the direct impact motorized vehicle usage has on wild horses and the environment. In addition, real-time cameras should be installed on the trap, the corral and temporary holding pens, again, so that BLM personnel, public and media can monitor the entire roundup operation and treatment of the horses.</p> <p>AWHPC would be happy to provide technical assistance and financial assistance to establish these real-time cameras as described above. Public observation at water/bait trapping should be permitted if possible. In the event such on-site observation is not possible, live video streaming should be provided of the trap at all times. This will allow the operation to proceed unimpeded and provide the public with observation opportunity.</p>	

No.	Commenter	Comment	BLM Response
71	Deniz Bolbol  American Wild Horse Preservation Campaign	Any bait/water trapping contracts should not be assigned to any BLM grazing permittee or those associated or related to a BLM grazing permittee. Public lands livestock permittees have a longestablished  conflict of interest with wild horses in Nevada and have a financial interest in their removal. In addition, there is great public controversy over the assignment of a trapping contract to a public lands livestock permittee or his associates and if this is being considered by the BLM Ely District is should be disclosed in the EA.	Government contracts follow stringent regulations. This comment is outside the scope of this EA.
72	Deniz Bolbol  American Wild Horse Preservation Campaign	The BLM Ely District must issue site-specific EAs for any specific proposed actions, or proposed roundups, in order that the public may comment on the “agency’s analysis of the environmental effects of the proposed action and possible mitigation of potential harmful effects of such actions.” (Source “A Citizen’s Guide to the NEPA” Council on Environmental Quality Executive Office of the  President) The Guide further states that, “NEPA requires Federal agencies to consider environmental effects that include, among others, impacts on social, cultural, and economic resources, as well as natural resources. Citizens often have valuable information about places and resources that they value and the potential environmental, social, and economic effects that proposed federal actions may have on those places and resources.”	Comment noted.
73	Deniz Bolbol  American Wild Horse Preservation Campaign	AWHPC would like to reiterate that the Ely District Drought Management EA is a programmatic document and lacks the site-specific information necessary for the public to adequately comment. Therefore it cannot be used as a blanket assessment to justify removal of horses due to drought conditions. Thus without future disclosure of specific actions, specific data and analysis upon which any future specific action is based, NEPA requirements will not be fulfilled.	The National Environmental Policy Act (NEPA) requires the Bureau of Land Management (BLM) to analyze and disclose environmental impacts associated with implementation of federal actions on public lands. Preparation of separate NEPA documents to implement Drought Response Actions (DRAs) normally take eight to ten months (or longer) to prepare. To ensure that decisions can be made in the appropriate timeframe to protect resources during drought, the BLM has prepared this Environmental Assessment (EA).

No.	Commenter	Comment	BLM Response
74	Deniz Bolbol  American Wild Horse Preservation Campaign	Any Drought Management proposed actions must include specific data on range conditions, impacts of livestock grazing on the range and a clear delineation on maps and in the analysis of the impacts that commercial uses (eg mining, geothermal, etc) may have on wild horses or the environmental in or around HMAs or HAs. Drought management EAs must include water usage in the District, including water controlled by permittees, must be disclosed and precise data pertaining to any <i>specific</i> proposed action must be disclosed for public review and input. It is essential during a drought that fair distribution of water, a most valuable resource, be a cornerstone of any future Drought Management related EAs.	The EA provides specific guidance regarding data to assess range conditions. Water is managed by the State of Nevada.
75	Lorene Mills	Thank you for your kindness in considering helping our beloved wild horses, American icons, survive the terrible drought gripping the Southwest.	Comment Noted.
76	Jerry Fruth	<p>BLM is in my opinion a well managed agency. I know because I have had the opportunity to work with BLM on trail preservation and access issues.</p> <p>However, if it does have one failing, it is the way it manages our wild horses. And here are some suggestions for you to consider.</p> <p>First, if water is an issue, why not put in solar wells? It has been done at BLM/ Ft. Stanton New Mexico. They have no wild horses but a large elk herd. It works.</p>	Water is managed by State of Nevada. BLM can only apply for water for wells in specific situations.
77	Jerry Fruth	<p>Second, why not reduce the amount of cattle on the range? The ration of cattle to wild horses seems out of whack to me. If we are to protect our wild horses, then lets put more emphasis on "PROTECT" instead of reducing the herd. Increase the grazing fee on cattle so you will have the funding to put towards the proper management of the wild herd.</p>	<p>By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.</p> <p>Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.</p>

No.	Commenter	Comment	BLM Response
78	Vicki Treadwell	This document fails to do a cost analysis. Data on the current cost of livestock permittees should be included. Currently Animal Unit Months (AUM) are awarded at considerably less than market value, (in many instances more than 100 times less). Add to that the cost of removing wild horses, warehousing them and continuing to allowing grazing on a depleted range may be an over burden to the tax payer. These costs the tax payer may require increasing grazing fees, particularly if grazing is allowed during drought to adequately address the potential damage done to a public resource. These costs must be explored.	Cost analysis for feasibility is not required under NEPA.
79	Rachelle Zocco	If removals of wild horses do become necessity all attempts must be made to achieve relief to the range via bait/water trapping. Helicopter roundups create undue stress to a population and a population compromised by drought should be spared any additional trauma. We have never supported and are against the brutality of the contractors on the ground as well as the helicopter pilots- I have watched these round-ups in utter disbelief and horror that these actions are coming from my home, the United States of America.	Comment Noted
80	Rachelle Zocco	Livestock restrictions must suit, agree, and fit the circumstance. If only seasonal restrictions are required that restriction does not in any way, justify any wild horse removals. If range conditions exist that allow a private entity to gain a private profit off of public land (where that profit might be minimized on private land but still obtainable) wild horses (that have no other area of public or private land available to that use) must not be removed. Only if conditions exist that require a full removal of livestock for a two-year period do conditions exist to take a permanent measure against wild horse use. We demand that there are no more removals of our horses so you can cater to the private livestock industry - we demand that our wild horses are protected and managed ON their land - we do not want cattle ranchers taking, using, and being subsidized with our tax dollars or you removing OUR horses only to allow these subsidized ranchers to take the horses' land. Enough is enough and we Americans have voiced our concerns time and time again.	By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.  Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.

<b>No.</b>	<b>Commenter</b>	<b>Comment</b>	<b>BLM Response</b>
81	Rachelle Zocco	Water hauling and evaluations for feed stations on the range should be evaluated. Although not current BLM practice, feeding on the range is not in violation of any provision of law. If used as a temporary measure to mitigate damage this is reasonable. This is also reasonable in that if removals of wild horses becomes necessity creating a bait trap at these stations would ease stress to the animals and make any operation likely to result in greater success- please be sure to use and only create bait trapping stations for OUR horses.	The EA considered water hauling and also considered supplemental feeding.
82	Rachelle Zocco	As drought conditions can create an urgent, yet temporary situation, measures to address any drought conditions must be seen in this manner and viewed as temporary. Drought conditions are foreseeable. All attempts to mitigate damages must be attempted prior to any fill blown "emergent" removals of wild horses. This management method must be employed.	Comment Noted
83	Anna Catherman,	I am commenting on your Environmental Assessment "Drought Management Environmental Assessment (EA)". This EA addresses many topics, however I would like to focus on how wild horses will be managed during droughts that may occur in the Ely District. You offer several DRAs you may implement, including temporary water hauls and possibly removal from HMA. You state that "BLM would employ a drought gather as a last resort". I strongly believe that horses should never be removed from their HMAs. The Wild Free-Roaming Horses and Burros act of 1971 originally was meant to keep the "fast disappearing" horses on their legal ranges. It also states "It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death". Both wild horse relocation within HMAs and removals are the opposite of protecting horses/burros "from capture, branding, harassment, or death" because all of these can and will occur in gather/relocation operations, esp. gathers on such a large scale as the Ely District's herds, which number over 1,000.	Comment Noted.

No.	Commenter	Comment	BLM Response
84	Anna Catherman,	I would also like to ask something concerning the removal of livestock in HMAs in event of drought. I believe that <i>on the first sign of drought</i> , you should reduce the grazing of livestock. Before any thought is given to any removals, ALL livestock should be removed and horses given at least three or four weeks to adjust before forage analysis is done. Thus, you do not see the very recent impact of livestock and think that there is an overpopulation of horses. Please note that I am not an expert in anything associated with land management. I do not quite understand all the factors that go into these decisions, however, I know that gathers are the exact opposite of protecting horses “from capture, branding, harassment, or death”. Please remove the drought gather from a possible “last resort” for drought management. If you do wish to perform a “drought gather”, please go through the normal EA process once again. If the horses are literally starving, in my opinion it would be more cruel to stampede them by force only to euthanize them then let them die a natural death in the wild.	By law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess wild horses immediately upon a determination that excess wild horses exist. Congress affirmed its intent in passing the 1976 Federal Land Policy and Management Act (FLPMA) by requiring BLM to manage the public lands for a wide variety of uses (including livestock grazing) under the principles of multiple-use and sustained yield. Managing use by livestock, together with and wild horses and burros, native wildlife, recreation, wilderness, and a host of other uses is a key part of BLMs multiple use management mission under FLPMA.  Livestock grazing on public lands is also provided for in the Taylor Grazing Act of 1934. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805.) reaffirms livestock grazing as a multiple use.
85	Debbie Coffey	I urge NO ACTION, with the exception of temporary water hauls to wild horses.	Comment Noted.
86	Debbie Coffey	This EA ONLY addresses management of wild horses and livestock, but NOT any other “authorized uses.” What does the Ely District Drought Management Plan do to adjust any other uses other than wild horses and livestock in your District? How can you have a District Drought Management Environmental Assessment when ONLY 2 uses out of the many multiple uses in your district are considered? What about mining? What about oil and gas exploration and development? What about solar? What about geothermal? Aren’t these all “authorized uses” within the Ely District?	Impacts to vegetation and these other actions are covered in the cumulative section of the EA.
87	Debbie Coffey	The BLM has promised transparency, so the public needs to be informed of the acre feet annually (afa) used by each other use in each hydrographic basin within the Ely District. These are other factors that should have been included this EA, but were completely omitted.	Water is managed by the State of Nevada. BLM uses best data available based on the need for analysis.
88	Debbie Coffey	Any EA for drought management should include ALL of the uses in your district that use water. If this information is not included in a Drought Management EA, then your office is perpetrating fraud on the American public.	See comment above.

No.	Commenter	Comment	BLM Response
89	Debbie Coffey	As you should know, mining, oil and gas development, and some types of solar use a lot of water and can drop the water table. In some instances, the BLM has minimized the impact of the use of water by mining operations by not requiring 1' and 5' water drawdown maps for the EAs of mines.	Comment noted.
	Debbie Coffey	While drought is seasonal, the BLM plans to PERMANENTLY remove wild horses. The BLM plans to only temporarily removing livestock, but to permanently remove wild horses. BLM should do water hauls to avoid removing any wild horses. Rounding up wild horses is much more expensive.	Comment noted
90	Debbie Coffey	This will endanger the viability and eliminate part of the thriving ecological balance. How about not having the upcoming Dec. 10, 2013 oil and gas lease sale in your District? How about having active mines or oil and gas leases cut back on production during severe droughts?	Oil and Gas, and mining NEPA analysis include analysis of cumulative effects. Comment noted to consider drought for these types of analysis.
91	Debbie Coffey	<p>“Supplemental Feeding of wild horses on rangelands during times of drought would adversely affect areas on or near the location that feed is being supplied.”</p> <p>What about adverse affects in many areas in the Ely District during times of drought by other uses? What about all the acres adversely affected by oil and gas development, especially within or near Herd management Areas? If the BLM is so concerned about the drought, shouldn't you cancel the upcoming December 10, 2013 oil and gas lease sale? The BLM, while getting rid of wild horses and livestock, is going full speed ahead with plans to expand the Pan Mine Project and Barrick's Bald Mountain Mine.</p> <p>Won't there be any adversely affected areas during future droughts from the planned Pan Mine Project, which expands the original 2011 exploration plan disturbance area from 100 acres to approximately 3,140 acres? This one project will:</p> <p>The expansion of the boundary is a result of constructing, operating, closing, and reclaiming the following:</p> <p>Two main open pits: the North Pan Pit and the South Pan Pit;</p>	Comment Noted.

No.	Commenter	Comment	BLM Response
		<p>Four satellite pits: the Black Stallion, North Syncline, Syncline, and South Syncline pits;</p> <p>Crushing facilities and associated stock piles;</p> <p>Two waste rock disposal areas;</p> <p>Heap leach pad, conveyors, processing facilities, and ponds;</p> <p>Water supply wells and delivery/storage system;</p> <p>Haul and secondary roads;</p> <p>Additional exploration within the Plan area;</p> <p><i>Ancillary facilities including: power supply; stormwater controls; reagent, fuel, and explosives storage; buildings including administration, laboratory, security, warehouse, core shed, and parking; potable water supply and septic systems; maintenance shop; ready line; light vehicle wash; communications facilities; helicopter pad; plant growth medium and woody debris stock piles; Class III - waived landfill; area for petroleum contaminated soils; monitoring wells; borrow areas; fencing; and yards.</i></p> <p>This use has much more potential for adverse areas and covers much more area than the small areas where you might temporarily feed some wild horses.</p>	
92	Debbie Coffey	Does the BLM Ely District office consider mining a "legitimate use" of public lands, but wild horses and burros an "illegitimate use" of public lands?	No. Both uses are based on current laws.
93	Debbie Coffey	The BLM has stated about Oil and gas leases " <i>Water Resources and Water Rights are not issues for lease sales, since no ground disturbing activities are associated with the sales per se.</i> " PER SE? (So, the BLM only looks at the actual lease sales, but can't imagine the next step, which is development? Is the BLM incapable of foresight in its management of public lands?)	Outside of scope of this EA.

No.	Commenter	Comment	BLM Response
94	Debbie Coffey	“Any concerns that arise during development of parcels subsequent to lease sales would be handled through design features, mitigation measures, and/or project stipulations.” OR NOT. Has anyone in the Ely District office read about fracking?	Outside of scope of this EA
95	Debbie Coffey	Since this EA addresses Socio-Economic Values, please consider this: Resource Curse: Why the Economic Boom That Fracking Promises Will Be a Bust For Most People (Hard Times, USA)  <a href="http://www.alternet.org/hard-times-usa/resource-curse-why-economic-boom-fracking-promises-will-be-bust-mostpeople-hard">http://www.alternet.org/hard-times-usa/resource-curse-why-economic-boom-fracking-promises-will-be-bust-mostpeople-hard</a>	Outside of scope of this EA. Note to provide to project lead for Oil and Gas Lease Sale EA.
96	Debbie Coffey	REGARDING Page 67 There are no GPS coordinates or dates the photos were taken for the photos. This is unscientific.	Comment noted. Year and general location are provided in EA. The Ely District has specific information on file at the District Office.
97	Debbie Coffey	REGARDING Page 70 There are no GPS coordinates for these photos. This is unscientific.	Comment noted. Year and general location are provided in EA. The Ely District has specific information on file at the District Office.
98	Debbie Coffey	REGARDING Pages 70-71 “Wild horses also cause damage through excessive trailing and hoof action, which causes destruction of vegetation and increases erosion and trampling of riparian areas; thereby causing bank shear, contaminating water quality and affecting riparian function.” I’m glad the Ely District office brought up contaminating water quality as a concern, since your office is forging ahead with plans to expand Bald Mountain Mine. What about all the arsenic and mercury contamination of surface water that has already been caused by that mine? BLM stated “In general, established background water quality levels are good with the exception of arsenic, which exceeds the 0.05 mg/l Nevada water quality standard.” Are you just going to allow this mine to cause more contamination to water? I wrote an article about this mine and the water contamination. Here is a link:  <a href="http://rtfitchauthor.com/2012/06/28/blm-overlooks-arsenic-mercury-but-gets-rid-of-wild-horses/">http://rtfitchauthor.com/2012/06/28/blm-overlooks-arsenic-mercury-but-gets-rid-of-wild-horses/</a>	Outside of scope for this EA.

No.	Commenter	Comment	BLM Response
99	Debbie Coffey	<p>Also, since your office is concerned about water contamination, please read these articles:</p> <p>New Study Predicts Frack Fluids Can Migrate to Aquifers Within Years</p> <p><a href="http://www.propublica.org/article/new-study-predicts-frack-fluids-can-migrate-to-aquifers-within-years">http://www.propublica.org/article/new-study-predicts-frack-fluids-can-migrate-to-aquifers-within-years</a></p> <p>Fracking Wastewater Can Be Highly Radioactive</p> <p><a href="http://www.heraldstandard.com/news/local_news/fracking-wastewater-can-be-highly-radioactive/article_d97e6d1b-1396-500f-a0cc-b521dd9861f0.html">http://www.heraldstandard.com/news/local_news/fracking-wastewater-can-be-highly-radioactive/article_d97e6d1b-1396-500f-a0cc-b521dd9861f0.html</a></p>	Outside of scope.
100	Debbie Coffey	<p>Finally, since the BLM brings up destruction of vegetation, increased erosion and the trampling of riparian areas, have you ever looked at satellite photos of the areas of the mines? You should go to google earth and type in Ruth, Nevada. Just south of the town, it looks like there is a mining project that seems to be about 30 miles wide! Bet that kicked up a little dust.</p> <p>Also, you can look here (you can even type Bald Mountain Mine in the search box and look at it):</p> <p><a href="http://www.satelliteviews.net/cgi-bin/g.cgi?ftype=mine&amp;fname=&amp;state=NV&amp;county=&amp;a=R">http://www.satelliteviews.net/cgi-bin/g.cgi?ftype=mine&amp;fname=&amp;state=NV&amp;county=&amp;a=R</a></p> <p>Has your office seen any photos of oil fields? Look at this: <a href="http://www.flickr.com/photos/skytruth/5453897342/">http://www.flickr.com/photos/skytruth/5453897342/</a></p> <p>And, last but by no means least, don't forget about the water grabs that are going on!</p> <p><a href="http://www.greatbasinwater.net/issues/index.php">http://www.greatbasinwater.net/issues/index.php</a></p>	Outside of scope.
101	Debbie Coffey	REGARDING Page 78 Fertility Control BLM should not be considering fertility control on non-viable herds.	Comment Noted.
102	Debbie Coffey	REGARDING Map 1.2 Ecoregions on the Ely District Please cite the U.S. LAW that authorizes "Ecoregions" (not just DOI policy or regulations).	Comment noted. Ecoregions is based on DOI policy.

No.	Commenter	Comment	BLM Response
103	Sherry Oster	<p>As per the BLM Handbook, drought conditions are foreseeable and as such do not constitute an "emergency." Therefore, it is incumbent upon the BLM to take mitigating actions in order to fulfill the agency's requirement to protect wild horses. Given the drought conditions, it is imperative that all livestock grazing be immediately halted until which time the BLM can ensure the well being of wild horses currently living on the range.</p> <p>It is important to note that Ely's precipitation is currently 127% of normal:</p> <p><a href="http://www.cnrfc.noaa.gov/monthly_precip.php">http://www.cnrfc.noaa.gov/monthly_precip.php</a></p> <p>Elevated precipitation has historically increased the danger of wildfires. It is essential that Wild Horses and Burros remain on the range to eat the drier brush and undergrowth that are less desirable to other species.</p> <p>This is from a letter written by a Nevada resident who responded to a recent article in a Nevada newspaper.</p> <p><a href="http://www.rgj.com/article/20130312/OPED02/303120026/They-help-prevent-disastrous-wildfire?nclick_check=1">http://www.rgj.com/article/20130312/OPED02/303120026/They-help-prevent-disastrous-wildfire?nclick_check=1</a></p>	<p>Drought EA is in response to BLM Handbook. Precipitation is variable across the District and is considered one of the indicators of drought.</p>
104	Sherry Oster	<p>Overlooked in this debate is that a real danger to people, animals and wildlife in rural areas is fire. A wind-whipped wildfire kills and destroys everything in its path. The wild free-roaming horses graze on public and private lands, clearing them of fuel that could feed wildfires.</p> <p>Silver Springs is too dry and inhospitable for deer and other vegetation eating animals, but we do see horses eating the weeds and cheatgrass, and very possibly preventing a disaster.</p>	<p>The purpose and need for the action is to meet rangeland health standards during drought by adjusting uses on range resources. While wildfire can destroy large areas, it is difficult to predict location and size of a particular incident. While grazing can reduce fine fuel loading and potentially reduce wildfire size, drought also reduces amount of fine fuel production. Large wildfires are not linked entirely to drought situations, and actually occur in both non-drought and drought situations.</p>
105	Sherry Oster	<p>A legal and proper EA must provide the following:</p> <p>A NO ACTION Alternative</p> <p>Maps that clearly illustrate water resources and yearly availability</p> <p>Maps the clearly show fencing in and around Herd Management Areas and explanation as to how such fencing impacts Wild Horse natural and seasonal migration.</p>	<p>This EA has a no action alternative.</p> <p>Data regarding water sources is available at the Ely District Office. Water availability varies and is monitored on a regular basis.</p> <p>Fencing data is available at the Ely District Office.</p> <p>Through the NEPA process issues were identified and analyzed with regard to the proposed action and alternatives. The cumulative effects section also considered this action in conjunction with other actions including mining, energy, oil, etc.</p>

No.	Commenter	Comment	BLM Response
		<p>All multiple use projects/exploration in Herd Management Areas, including water and resource usage for each. This would include the following:</p> <ol style="list-style-type: none"> <li>1. Mining projects</li> <li>2. Energy projects               <ol style="list-style-type: none"> <li>a. Oil</li> <li>b. Wind</li> <li>c. Geo-thermal</li> <li>d. Solar</li> <li>e. Natural gas</li> </ol> </li> </ol> <p>Domestic livestock grazing</p> <p>Recreational Activities</p> <p>Hunting activities in and around the Herd Management Areas</p> <p>Economic impacts of Wild Horse and/or Burro removals as compared to IN THE WILD/ON THE RANGE management. This would include the following:</p> <ol style="list-style-type: none"> <li>1. Costs of each round-up</li> <li>2. Costs of short term holding facilities</li> <li>3. Costs of long term holding facilities</li> <li>4. Costs of preparations for adoption</li> <li>5. Costs of transportation of Wild Horses and Burros for all of the above</li> </ol> <p>Scientific data that shows the impacts of sex ration skewing on Wild Horse Herd behavior.</p> <p>All realty actions in Herd Management Areas, such as</p> <p>Land Sales</p> <p>Land Swaps</p> <p>Explanation as to the impacts of such realty actions upon Wild Horses and/or Burros</p>	<p>Economic impacts address impacts to a community, not the feasibility of a gather or project.</p>

No.	Commenter	Comment	BLM Response
106	Bill Brown  Bevan Lister  8 Mile Farms	<p>We have on our allotment a weather station set up by the State Weather Climatologist. Readings are taken daily and reported to the National Weather Service. In this area, the average moisture is approximately 8 to 9 inches. From October of 2010 to October of 2011 we reported 12.58 inches of moisture and from October 2011 to October 2012 there was 11.94 inches of moisture. This is a significant amount of moisture for our grazing allotment. Right now the grasses in our allotment are in good shape.</p> <p>However, we do have a contingency plan in place. During years of drought we move the cattle more frequently, cut our cattle numbers and/or if necessary bring in the cattle and feed them. We have initiated this plan in the past as we have dealt with drought conditions and have been able to manage without causing any noticeable impact to the range.</p> <p>We do not feel that it is necessary to initiate special planning measures at this time. We are confident in our knowledge of our allotment and the actions necessary to keep it healthy for our use</p>	Comment noted.
107	Chris Collis	I believe that the proposed actions and alternatives, which could have life altering consequences for all parties, should be approached cautiously and not hastily as the wonderful high desert we live in is very resilient. We are one good storm away from a great year.	Comment Noted
108	Chris Collis	I believe that all parties should be completely aware of each other's thoughts and actions...no secrets or hidden agendas. To work through this disaster, open dialog and communication are mandatory. I look forward to getting past this obstacle together.	EA provided for public input, and for coordination with grazing permittees. The proposed action also outlines coordination requirements while implementing drought response actions.