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Bureau of Land Management



Environmental Assessment

May 2013

Wildland-Urban Interface (WUI)

FIRE DEFENSE SYSTEM

Battle Mountain, Nevada

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Battle Mountain District

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Battle Mountain, NV 89820-1420

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1.0 INTRODUCTION

On August 22, 2002, President Bush established the Healthy Forests Initiative (HFI). This initiative directs the Department of Agriculture, Department of the Interior (DOI), and Council on Environmental Quality (CEQ) to improve regulatory processes to ensure more timely decisions, greater efficiency, and better results in reducing the risk of catastrophic wildland fires (U.S. Forest Service [USFS] 2012).

In December 2002, the CEQ provided new guidance for the preparation of Environmental Assessments (EAs) for fuel reduction and fire-adapted ecosystem-restoration projects. This guidance included the following major points (USFS 2012):

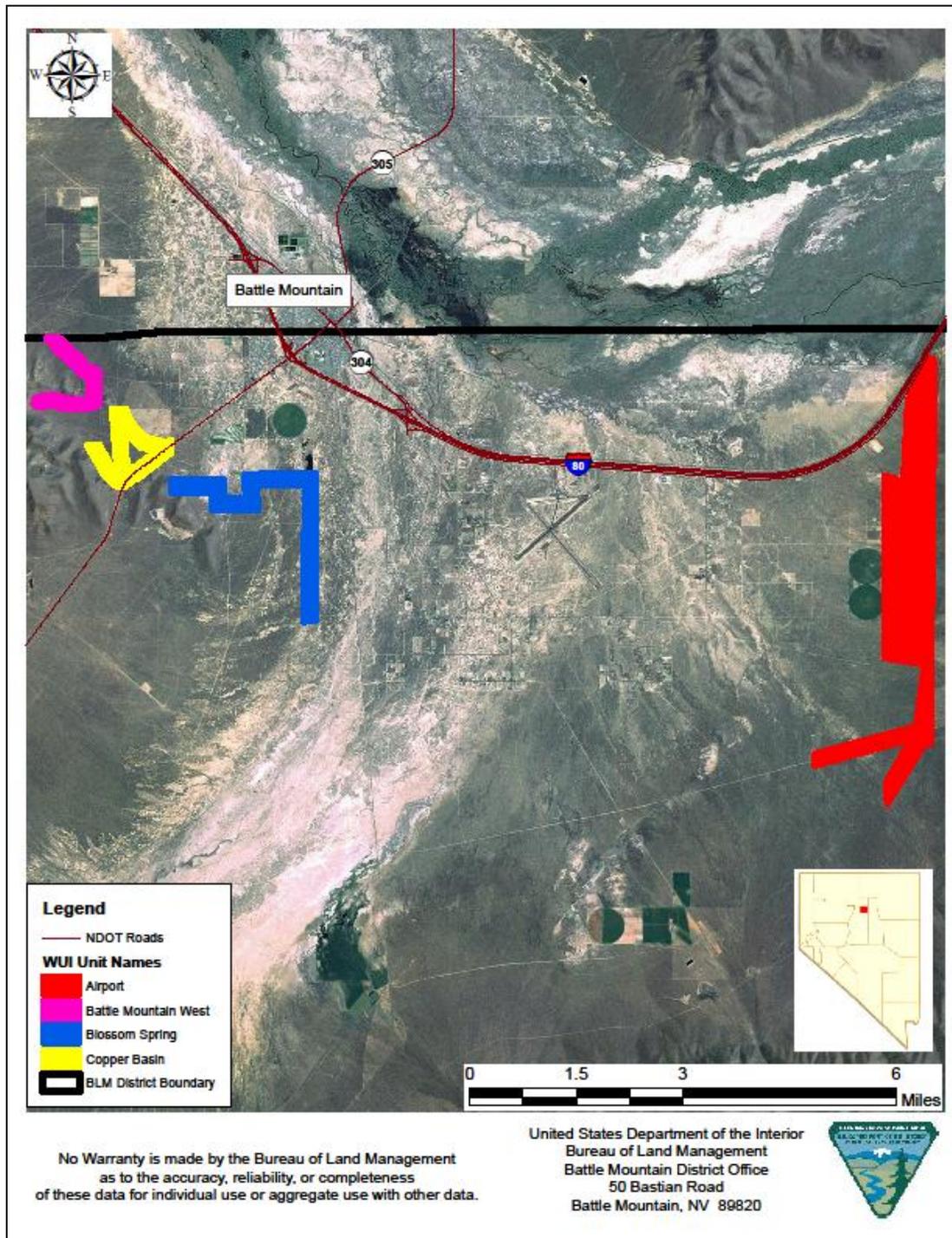
- The EA should be a “concise public document” that addresses four elements: (1) need for the Proposed Action, (2) description of alternatives, (3) description of the environmental impacts of the Proposed Action and No Action Alternative, and (4) a list of the agencies and persons consulted;
- The EA should reference any supporting data, inventories, and other documents that were relied on in its presentation;
- Interested agencies and the public must be involved in EA preparation to the extent practicable;
- When a Finding of No Significant Impact (FONSI) is prepared, the EA should be attached and incorporated by reference;
- When the EA and FONSI are ready, reasonable public notice of their availability must be provided; and
- If an Environmental Impact Statement (EIS) is needed, a Notice of Intent (NOI) must be published describing the Proposed Action and No Action Alternative, the scoping process, and the name of the agency contact.

In 2003, Congress passed the Healthy Forests Restoration Act (HFRA) (Public Law [P.L] 108-148). For all EAs completed under the HFRA, the Bureau of Land Management (BLM) must use the *Guidance for Environmental Assessments for Forest Health Projects*, provided in a December 9, 2002 memorandum from the CEQ. This EA has been prepared in accordance with CEQ’s guidance for preparing National Environmental Policy Act (NEPA) documents authorized under the HFRA of 2003 (USFS 2012).

In September 2003, the BLM assessed current conditions in the project area with findings and recommendations cited in the *Battle Mountain Site Assessment*, which is the Battle Mountain District's (BMD) risk assessment for the community of Battle Mountain. A summary of the conditions described in this report include:

- Existing hazardous fuel accumulations exist in the Wildland-Urban Interface (WUI) in several locations around Battle Mountain;
- Average shrub height and decadence is conducive to intense fire behavior;
- Fuels are capable of producing flame lengths in excess of 20 feet with very high fireline intensities (depending on wind);
- Some structures and infrastructure interface directly with these fuels;
- In areas of fire scars and other disturbances around Battle Mountain, there is infestation of noxious weeds and non-native invasive species;
- Most of Battle Mountain is capable of supporting hazardous levels of fine-flashy fuels given an abnormally wet year;
- Grass production in this area is more a concern of continuity versus heavier loadings following abnormally wet winters and springs;
- Areas normally considered low risk due to lack of fuel continuity and fuel loading can become an extreme risk after one high-production growing season; and
- Reducing noxious weeds and non-native invasive species infestations is an important component of restoring land to a healthier condition.

The BMD proposes to reduce hazardous fuels in the WUI in and around the community of Battle Mountain, Nevada. Hazardous fuels would be reduced on approximately 2,839 acres of public land administered by the BLM. Figure 1-1 shows the areas for potential treatment for this project.



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 1-1
Proposed WUI Treatment Areas

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1.1 GENERAL SITE SETTING

The general setting for the Proposed Action is within the administrative boundary of the BMD around the community of Battle Mountain. The BMD is located in central Nevada, within Lander, Eureka, Nye, and Esmeralda counties. The project area is located within the northern portion of Lander County; the Mount Lewis Field Office (MLFO) administers this area. This area is characteristic of the semi-arid Great Basin Desert province (National Park Service [NPS] 2012).

The project area is located within the Basin and Range topographical region, which is the product of geological forces stretching the earth's crust, creating many north-south trending mountain ranges (NPS 2012). Basin and Range topography is characterized by abrupt changes in elevation, alternating between narrow faulted mountain chains and flat arid valleys or basins (Russell and Cohn 2012). Valley and playa elevations range from 4,000 to 5,000 feet, while mountain range elevations extend from 7,500 to 9,500 feet (BLM 2012a).

1.2 PURPOSE AND NEED FOR ACTION

The purpose of the action is to reduce the intensity and severity of future wildland fires in the WUI by reducing hazardous fuels on the ground and by creating a defensible buffer to provide for a safer suppression environment. Specifically, this would be accomplished by:

- Reducing shrub density from current unhealthy and hazardous levels, which would reduce fire behavior in the WUI;
- Reducing overall fuel loading (burnable aboveground biomass) in the WUI;
- Reducing average height and decreasing horizontal continuity of shrubs, forbs, and grasses to reduce anticipated fire behavior in the WUI; and
- Restoring vegetation in areas where noxious weeds and non-native invasive species (especially cheatgrass [*Bromus tectorum*]) have taken over.

Goals for the project include:

- (1) Reduce the likelihood for loss of life, property, and community infrastructure (including watershed) due to catastrophic wildfire in and around the community of Battle Mountain;
- (2) Provide fuel breaks to keep fires away from the community and from reaching unmanageable sizes;

- (3) Serve to protect natural resources from unacceptable wildfire damage in a cost-effective manner, with a high regard for private property and public safety;
- (4) Create conditions necessary for reintroduction of useful fire back into the ecosystem; and
- (5) Reduce the threat of a wildfire damaging public lands from an escaped fire on private lands.

1.3 DECISION FRAMEWORK

The decisions to be made for this EA include the following:

- Whether or not to implement the proposed WUI treatments;
- Whether or not to issue a FONSI or to prepare an EIS; and
- Whether or not the Proposed Action is consistent with land use plans and fire management plans for the project area.

1.4 PUBLIC SCOPING ISSUES IDENTIFIED

The BLM Interdisciplinary Team internally coordinated this project. The team identified the supplemental authority elements and other resources to be addressed in this document, as outlined in Section 3.2. Additionally, Appendix C provides copies of the Native American coordination letters and public comments received during the project outreach process.

The Nevada State Clearinghouse is the single point of contact (SPOC) for NEPA proposals statewide. Pursuant to NEPA, federal agencies must consult with the state and other agencies whenever a project or policy initiative is proposed on public lands. The Clearinghouse ensures that pertinent state agencies and other local governments are notified about the projects and then provides their comments back to the federal agencies to help facilitate the consultation process.

The BLM received one comment letter; the concerns addressed in this letter were considered in the preparation of this EA (Appendix C, pages C-3 and C-4).

1.4.1 RELEVANT ISSUES

During the Interdisciplinary Team Kick-Off Meeting (November 27, 2012), special concerns and design features for this project were identified. Specific issues include the following:

- Many areas needing treatment are on privately-owned parcels of land; therefore, it would be beneficial to the success of this project if these landowners entered into cooperative agreements with the BLM;
- A partnership with Lander County would need to be created so that public rights-of-way managed by the County could be used by the BLM during the project;
- Any areas undergoing treatment would need to have minimal soil disturbance to prevent further invasion of undesirable plants in treated areas;
- Any seeding that is done following treatment would need to be done by means other than by drill, unless otherwise recommended by a resource specialist. It is anticipated that broadcast seeding (from seeders on all-terrain vehicles [ATVs], hand spread, aerial, etc.) would be implemented in order to keep the soil crust intact; and
- Agreements or partnerships with various companies (i.e. power, pipeline, fiber optics, etc.) would need to be created in the area in order to use their easements for fuel breaks.

1.5 LAND USE CONFORMANCE AND LEGAL REQUIREMENTS

The Proposed Action is in conformance with the following plans:

- Shoshone-Eureka Resource Management Plan (RMP), as amended (BLM 2002);
- Battle Mountain District Fire Management Plan (BLM 2004); and
- Battle Mountain District Integrated Weed Management Plan (BLM 2008c).

Public lands administered by the BLM within the proposed WUI treatment areas and the surrounding vicinity are managed in accordance with the Shoshone-Eureka RMP, as well as the Record of Decision (ROD) for the Shoshone-Eureka Resource Area (BLM 1986a). The RMP complies with the Federal Land Policy and Management Act of 1976 (FLPMA), as amended (BLM 2001b).

The Proposed Action for this EA is in conformance with the Proposed Action of the Shoshone-Eureka RMP, as amended and shown below (BLM 2002):

- (1) Restore fire as an integral part of ecosystems;
- (2) Use mechanical treatments such as green-strips, shaded fuel breaks, and tree thinning to reduce wildfire fuel hazards; and

(3) Improve diversity of vegetation.

In addition, the Proposed Action is in conformance with the wildland fire management goals presented in the *2004 Battle Mountain Field Office Fire Management Plan*.

This EA tiers to the above-listed documents.

1.6 RELATIONSHIPS TO STATUTES, REGULATIONS, AND OTHER PLANS

The Proposed Action would be in conformance with the following regulations:

- Taylor Grazing Act of 1934 (43 United States Code [U.S.C.] 315);
- Timber Protection Act of 1922 (16 U.S.C. 594);
- Reciprocal Fire Protection Act of 1955 (42 U.S.C. 1856);
- Public Rangeland Improvement Act of 1978 (P.L. 95-514);
- HFRA, December 2003 (P.L. 108-148);
- NEPA (42 U.S.C. 4321);
- National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470 et seq.);
- FLPMA of 1976 (43 U.S.C. 1701 et seq.);
- 43 Code of Federal Regulations (CFR) §§4100—Grazing Management;
- BLM Manual 1740—Renewable Resource Improvements and Treatments; and
- BLM Manual Handbook H-1740-1—Renewable Resource Improvement and Treatment Guidelines and Procedures (BLM 2008a).

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The BMD is proposing to reduce hazardous fuels in the WUI on approximately 2,839 acres of public lands (administered by the BLM) in and around the community of Battle Mountain. Figure 2-1 identifies each of the proposed treatment units, as well as shows the various risk levels associated with each unit. Table 2-1 describes the proposed actions, risk levels, and acreage for each treatment unit.

**Table 2-1
Proposed Actions, Risk Levels, and Acreage for Each Treatment Unit**

Treatment Unit	Proposed Actions	Risk Levels	Acreage
Battle Mountain West Unit	mechanical and chemical treatments	Very High Risk	193
Copper Basin Unit	mechanical and chemical treatments	Very High Risk	309
Blossom Spring Unit	mechanical, chemical, and biological treatments	Moderate Risk	498
Airport Unit	mechanical, chemical, and biological treatments	Low and Moderate Risk	1,839

Source: Battle Mountain Field Office 2003.

Table 2-2 details the potential of each treatment unit, as well as describes what treatment methods would be implemented for each unit.

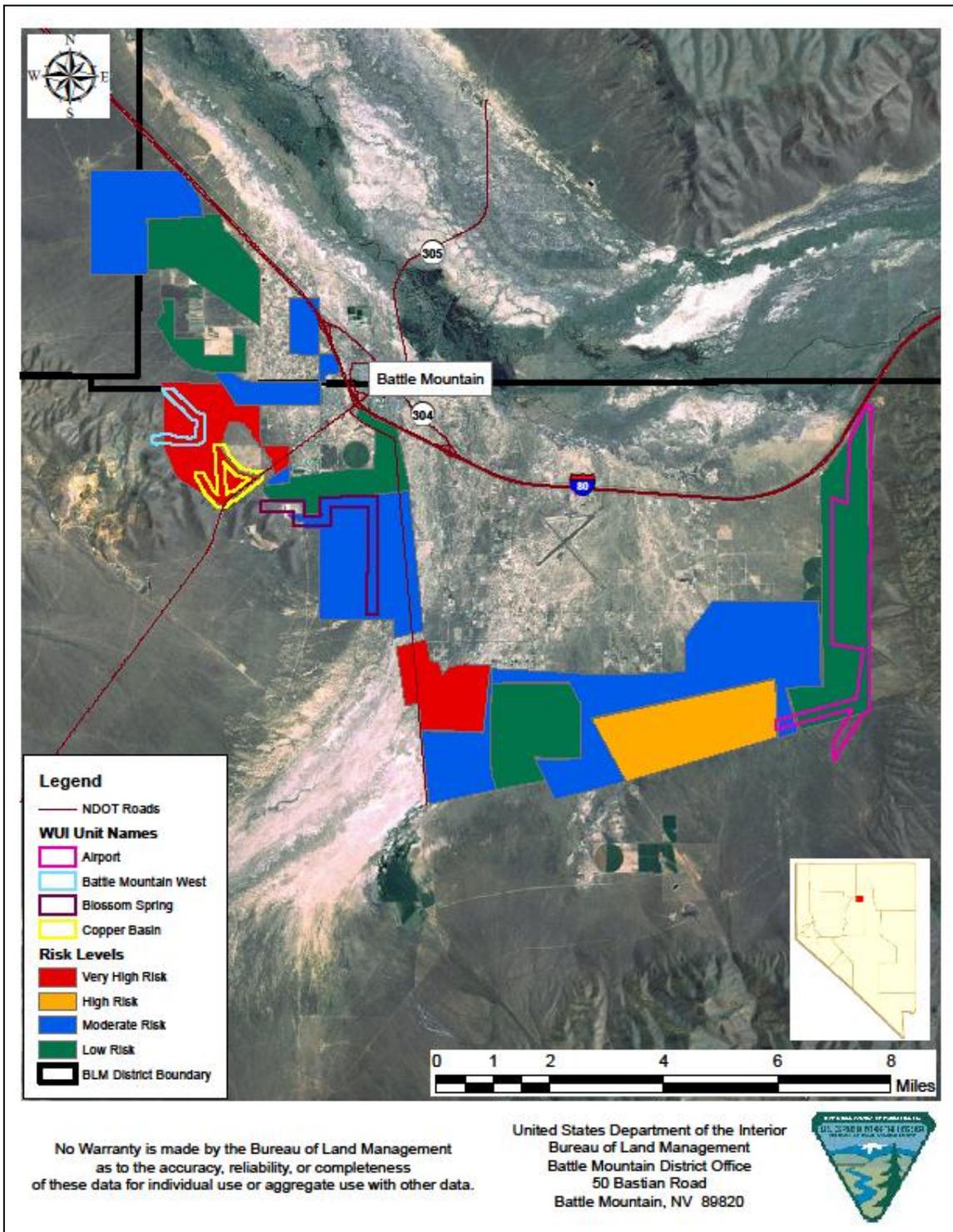
**Table 2-2
Conditions and Treatment Methods for the Proposed Treatment Areas**

Treatment Area	Soil Types	Potential Native Vegetation	Treatment Proposed	Specifics of Treatment Proposed
Battle Mountain West Unit	<ul style="list-style-type: none"> • Broyles • Havington-Burrita • Whirlo-Oxcorel • Wiskan-Linrose 	<ul style="list-style-type: none"> • Big sagebrush • Bluebunch wheatgrass • Bud sagebrush • Indian ricegrass • Shadscale • Thurber's needlegrass 	<ul style="list-style-type: none"> • mechanical • chemical 	<ul style="list-style-type: none"> • mowing/green-stripping • herbicides
Copper Basin Unit	<ul style="list-style-type: none"> • Blacka • Broyles • Old Camp-Rock 	<ul style="list-style-type: none"> • Bud sagebrush • Indian ricegrass • Shadscale 	<ul style="list-style-type: none"> • mechanical • chemical 	<ul style="list-style-type: none"> • mowing/green-stripping

Treatment Area	Soil Types	Potential Native Vegetation	Treatment Proposed	Specifics of Treatment Proposed
	<ul style="list-style-type: none"> outcrop-Colbar • Whirlo-Oxcorel 	<ul style="list-style-type: none"> • Thurber’s needlegrass • Wyoming big sagebrush 		<ul style="list-style-type: none"> • herbicides
Blossom Spring Unit	<ul style="list-style-type: none"> • Argenta • Batan • Blacka-Broyles • Broyles • Bubus • Bubus-Playas • Paranat • Raglan • Rosney • Sonoma • Wendane • Whirlo-Oxcorel 	<ul style="list-style-type: none"> • Alkali muhly • Alkali sacaton • Basin wildrye • Black greasewood • Bud sagebrush • Indian ricegrass • Shadscale • Thurber’s needlegrass • Wyoming big sagebrush 	<ul style="list-style-type: none"> • mechanical • chemical • biological 	<ul style="list-style-type: none"> • mowing/green-stripping • herbicides • prescribed grazing
Airport Unit	<ul style="list-style-type: none"> • Broyles • Creemon • Ricert-Whirlo-Pineval • Rosney • Teman • Tenabo • Whirlo-Tenabo • Wholan • Yipor 	<ul style="list-style-type: none"> • Basin big sagebrush • Basin wildrye • Black greasewood • Bottlebrush squirreltail • Bud sagebrush • Indian ricegrass • Shadscale • Sickle saltbush • winterfat 	<ul style="list-style-type: none"> • mechanical • chemical • biological 	<ul style="list-style-type: none"> • mowing/green-stripping • herbicides • prescribed grazing

Source: USDA, NRCS, Web Soil Survey (2013) and USDA 2003

Upon completion of this project, monitoring and further maintenance treatments (mechanical, chemical, and biological) would be utilized to maintain the fuel breaks.



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 2-1
Risk Levels of the Proposed Treatment Units

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For each of the proposed treatment units, treatment would include the following:

- Prescribed grazing would be employed, as needed, to help reduce noxious weeds and non-native invasive species, to reset the area to a native environment, or to make more ground available for native plant growth;
- Mowing/mastication would be used to reduce vegetation with minimal soil disturbance;
- BLM-approved chemicals (Appendix D) would be used to control noxious weeds and non-native invasive species;
- Areas would be seeded yearly with desired species, as needed;
- The BLM would conduct follow-up maintenance treatments, as deemed necessary based on monitoring;
- The project would be monitored and maintained for overall land health and as part of the Fire Defense System around Battle Mountain; and
- Areas that are seeded would be rested from grazing and may be fenced if needed to facilitate rest.

2.1.1 DESIGN FEATURES COMMON TO ALL UNITS

The following design features for the Proposed Action apply to all treatment units:

- A. Cheatgrass and other noxious weeds and non-native invasive species would be mitigated using Best Management Practices (BMPs) and guidance from the 2008 BMD Integrated Weed Management Plan (BLM 2008c).
 - i. Treatment areas may be monitored for at least one growing season following treatment and prior to seeding in order to ensure effectiveness. The successful establishment of native grasses and forbs may not warrant additional seeding treatment. However, the BLM may choose to re-seed disturbed areas immediately following initial treatment.
 - ii. Treatment sites would be assessed for species composition and abundance prior to treatment.
 - iii. Broadcast seeding would be the preferred method for dispersing seed in order to keep the soil crust intact.

- iv. In areas where cheatgrass and other noxious weeds and non-native invasive species are known to occur (i.e. along roads, private property, etc.), yearly monitoring would be performed. Any subsequent treatment that may occur would comply with the 2008 BMD Integrated Weed Management Plan (BLM 2008c).
- B. The herbicide Plateau®, or other similar herbicides, would be used to treat cheatgrass. The appropriate herbicide to treat noxious weeds would be determined by the BLM based on site characteristics and species.
- C. Any application of herbicide would occur in accordance with its label.
- D. Herbicides may be applied on portions of or up to the maximum project area.
- E. Application of Plateau® would be limited to days when the air is calm and when wind speeds are between three and ten miles per hour (mph).
- F. The BLM would avoid application of Plateau® when wind speeds are below three mph due to variable wind direction and high inversion potential.
- G. All workers applying herbicides would be licensed or supervised by licensed applicators.
- i. The BLM would use an approved weed-free seed mix to reduce noxious weeds and non-native invasive species over time by developing and maintaining desired plant communities.
 - ii. The BLM would wash equipment in accordance with BLM standard operating procedures to prevent the transfer of undesirable weed seeds from other areas.
- H. The following techniques would be used when applying Plateau® to control droplet size:
- i. Use high flow rate nozzles to apply the higher practical spray volume.
 - ii. Do not exceed the nozzle manufacturer's recommended pressures. When larger flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
 - iii. Use the minimum number of nozzles that provides uniform coverage.
 - iv. Orient nozzles so that the spray is released parallel to the airstream.
 - v. Use a nozzle type that is designed for the intended application.

- I. All fuels reduction/mastication units may be monitored for objective attainment for at least one growing season after initial treatment and prior to any type of seeding treatment. Results of this monitoring would determine the need for seeding. If seeding is necessary, the following procedures would occur:
 - i. Seed would be dispersed via broadcast application; and
 - ii. Seeding would preferably occur prior to snow pack (in fall to early winter) or as the snow is melting (in spring).
- J. Prescribed grazing, chemicals, and seeding would be used in areas of noxious weeds and non-native invasive species infestations. The intent would be to convert the area back to a native vegetation type. In order for these treatments to be successful, this would be repeated for several years in a row. Mastication treatment methods that minimize ground disturbance near the soil surface would be applied.
- K. The BLM would rest any seeded areas from grazing and may fence these areas to facilitate rest.
- L. A preferred seed mix containing species associated with soil types in the project area would be used as monitoring necessitates (Table 2-3).
- M. An alternative native seed mix and a traditional, green-stripping, non-native seed mix would be used in the event that large areas need seeding or the preferred mix is unavailable or cost prohibitive (Tables 2-4 and 2-5).
- N. When treating noxious weeds and non-native invasive species, the BLM would implement other control methods in combination with mowing since mowing does not always kill these species.
- O. The BLM would conduct mowing before noxious weeds and non-native invasive species flower and set seed.
- P. Maintenance treatments may be conducted as monitoring indicates necessary, using the methods and prescriptions approved in the initial treatment.
- Q. In compliance with Section 106 of the NHPA, as amended, the BLM would conduct a cultural resources inventory in all project areas prior to project implementation. Sensitive cultural sites would be identified and avoided. This may involve the use of avoidance flagging or an onsite monitor to mitigate public knowledge of the location of cultural sites. In addition, work and travel corridors would be identified as necessary.

- R. In the event that unanticipated archaeological site discoveries are made during treatment activities, the BLM would immediately stop work near the discovery and take reasonable measures to avoid or minimize harm to the findings. Work would not resume until consultation was made and appropriate measures were taken to ensure that the project complies with the NHPA. If necessary, the BLM would develop mitigation measures in consultation with the State Historic Preservation Office (SHPO).
- S. Project implementation activities would not occur within any known or newly identified archaeological sites unless mitigated and/or cleared by an archaeologist.
- T. Whenever possible, the BLM would avoid occupancy and modification of the 100-year floodplain surrounding the Humboldt River. The BLM would buffer the Humboldt River by 100 feet to remove any spraying of herbicides from the floodplain.
- U. The BLM would not transport debris removed from treatment areas through wetlands.
- V. Work crews would undergo diligent training and would use personal protective equipment (PPE) (i.e. long-sleeve shirts, long pants, chemical-resistant gloves, shoes) to reduce the level of health and safety risks associated with mowing/mastication and other treatments.
- W. The BLM would conduct project activities that have the potential to disturb migratory bird nests outside of the bird-nesting season, where practicable. The nesting season for raptor species is from March 1 to July 31, and the nesting season for all other avian species is between April 1 and July 31. If treatment needs to be conducted during the breeding season, the area would be surveyed by a qualified biologist for the presence of migratory birds prior to the treatment. The survey must be done no more than 14 days before the start of treatment activities. If it is determined that nesting birds are present, a BLM approved buffer zone (generally 250 feet for passerine species; buffers for raptor species will vary) will be established and maintained until the young birds have fledged.

2.1.2 TREATMENT METHODS

2.1.2.1 MECHANICAL TREATMENT METHODS

Mowing/Green-Stripping

This method involves the manipulation of wildland fuels by use of a rotary mower towed by an agricultural tractor or a bull-hog. This equipment would be used to mow or masticate shrubs where the vegetative community and terrain make it feasible. Mowing would create fuel breaks to make an area less flammable and to provide protection of urban areas. Green-stripping may

be conducted through a number of techniques that would create a variety of outcomes for the redistribution or reduction of fuels. In general, a strip of land 40 to 60 feet wide would be treated and seeded with plant species less conducive to rapid propagation of fire (refer to preferred seed mix). There would be un-mowed sections 40 to 60 feet wide between mow strips. The location and width of the green-strips may vary depending on the location, fuel types, and presence of cultural resources. Treatment areas may be fenced and grazing would be restricted for the first two growing seasons until monitoring demonstrates that the fire treatment and/or Northeastern Great Basin Area Standards and Guidelines are met.

2.1.2.2 BIOLOGICAL TREATMENT METHODS

Prescribed Grazing

A non-mechanized treatment method using a prescribed grazing regime based on high intensity, low-frequency livestock grazing (HILF) would be utilized to control fuel levels, thereby reducing and/or preventing the spread of wildfire. Based on range condition and monitoring, livestock would be placed in fenced pasture areas, as needed, to reduce fuel levels. The trigger point to implement the proposed managed/prescribed grazing would be when total annual production of annual grasses exceeds 450 pounds per acre within a treatment area. Targeted grazing would be managed to leave sufficient residual litter after grazing for small mammal food and cover, and watershed protection. Livestock would be removed upon reaching a two-inch average stubble height in order to provide some protection from wind and water erosion (BLM 1984). Additional monitoring and fencing may be necessary to ensure that effective grazing treatments meet the Northeastern Great Basin Area Standards and Guidelines. In addition, this treatment provides fuels reduction only where the majority of fuel components are annual invasive species (i.e. cheatgrass) or non-sagebrush shrubs. The prescribed grazing may be conducted by the current permittees under the existing grazing permits or through the issuance of a free-use permit.

2.1.2.3 CHEMICAL TREATMENT METHODS

As a stand-alone treatment, herbicide would be applied to reduce the amount of undesirable fine fuels, such as cheatgrass, from the existing plant communities. The herbicide would be applied to the same treatment areas as outlined in the Proposed Action. Periodic retreatment may be required due to the presence of cheatgrass within the project area.

As a co-treatment, herbicide would be applied to prevent cheatgrass establishment in the seeded areas where shrubs have been removed or where green-strips have been seeded. The herbicide could also be used with targeted grazing/mowing treatments to control cheatgrass in these areas.

Periodic maintenance of the seeded areas, grazing/mowing treatments, and green-strips may also be required and herbicide could be used in that manner.

According to the label for Plateau® (Appendix D, pages E-1 thru E-15), the following techniques should be used to control droplet size:

- Volume—Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure—Do not exceed the nozzle manufacturer’s recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles—Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation—Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal orientations will reduce droplet size and increase drift potential.
- Nozzle Type—Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. Do not use nozzles producing a mist droplet spray.

2.1.2.4 SEEDING

Table 2-3 provides the preferred seed mix and application rate for the Proposed Action. Tables 2-4 and 2-5 provide the native and non-native seed mixes and application rates. These mixes would be potentially used for rehabilitation and re-seeding of treated areas. These seed mixes may be modified in the future, as approved by the BLM.

Table 2-3
Preferred Seed Mix for Proposed Action

Common Name	Scientific Name	Pure Live Seed (PLS) (pounds per acre)
Indian Ricegrass	<i>Achnatherum hymenoides</i>	4
Needle-and-Thread	<i>Stipa comata</i>	2
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	4
Sandberg Bluegrass	<i>Poa nevadensis</i>	0.5

Common Name	Scientific Name	Pure Live Seed (PLS) (pounds per acre)
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.5
Western Yarrow	<i>Achillea millefolium</i>	0.5
Winterfat	<i>Krascheninnikovia lanata</i>	0.5

Source: BLM, BMD, 12/19/2012

Table 2-4
Native Alternative Seed Mix

Common Name	Scientific Name	PLS (pounds per acre)
Indian Ricegrass	<i>Oryzopsis hymenoides</i> or <i>Achnatherum hymenoides</i>	3
Needle-and-Thread	<i>Stipa comata</i>	4
Bottlebrush Squirreltail	<i>Sitanion hystrix</i>	2
Sandberg Bluegrass	<i>Poa nevadensis</i>	0.5
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.5

Source: BLM 2012b

Table 2-5
Non-Native Alternative Seed Mix

Common Name	Scientific Name	PLS (pounds per acre)
Crested Wheatgrass	<i>Agropyron cristatum</i>	3
Western Wheatgrass	<i>Pascopyrum smithii</i>	1
Bottlebrush Squirreltail ¹	<i>Sitanion hystrix</i>	3
Sandberg Bluegrass	<i>Poa nevadensis</i>	0.5
Lewis Flax	<i>Linum lewisii</i> or <i>Linum perenne</i>	0.5
Small Burnet	<i>Sanguisorba minor</i>	0.5
Western Yarrow	<i>Achillea millefolium</i> spp. <i>lanulosa</i>	1
Forage Kochia	<i>Kochia prostrata</i>	0.5

Source: BLM 2012b

The BLM may decide to monitor treated (disturbed) areas for one year prior to seeding. This would eliminate the unnecessary seeding of areas that can reestablish naturally. In addition, the BLM would conduct yearly monitoring of areas known to contain cheatgrass or other noxious weeds and non-native invasive species. When necessary, these areas would be treated using various treatment methods (i.e. prescribed grazing, chemical application, mowing). Monitoring would evaluate land health and would ensure the BLM conducts maintenance treatments when necessary.

¹ Bottlebrush squirreltail was chosen because it competes well with invasive species, such as cheatgrass.

2.1.3 UNIT SPECIFIC TREATMENTS

Figure 2-2 illustrates treatment units and land ownership. Table 2-6 describes the treatment units, as well as the proposed treatment method for each unit and the maximum number of acres treated.

**Table 2-6
Proposed Treatment Methods for the Treatment Units**

Treatment Unit	Acres	Treatment Method	Maximum Acres Treated
Battle Mountain West Unit	193	mechanical, chemical	193
Copper Basin Unit	309	mechanical, chemical	309
Blossom Spring Unit	498	mechanical, chemical, biological	498
Airport Unit	1,839	mechanical, chemical, biological	1,839
Total	2,839		2,839

Source: Battle Mountain District, 2013

Battle Mountain West Unit

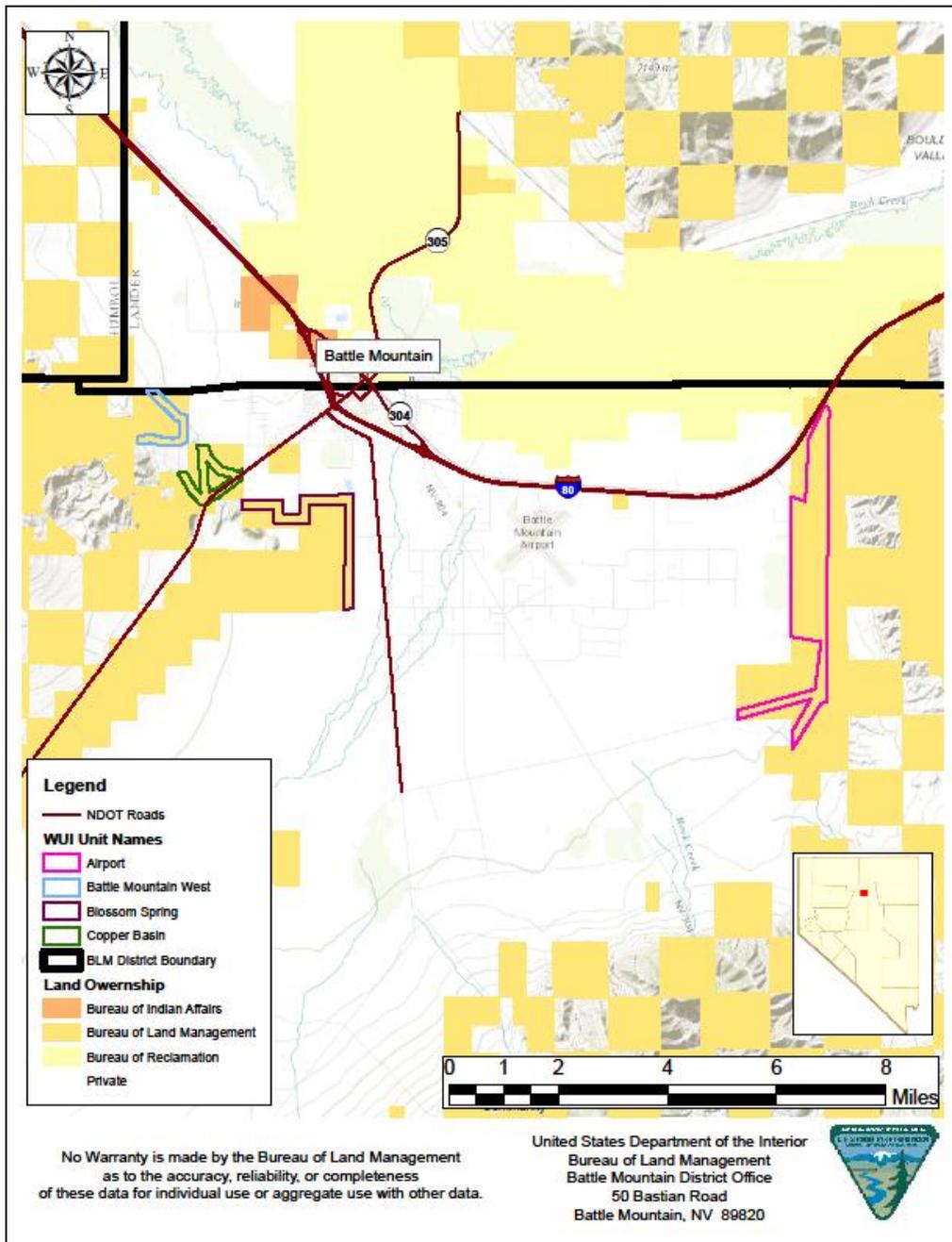
The Battle Mountain West Unit encompasses 193 acres. There are two methods of treatment proposed within the unit: mechanical treatment and chemical treatment. Either of these treatment methods or a combination of both may be used to treat up to 100 percent of this unit.

Copper Basin Unit

The Copper Basin Unit encompasses approximately 309 acres and the treatment would be conducted in the same manner as the Battle Mountain West Unit. Either of these treatment methods or a combination of both may be used to treat up to 100 percent of this unit.

Blossom Spring Unit

The Blossom Spring Unit encompasses 498 acres and there are three methods of treatment proposed within this unit: mechanical treatment, chemical treatment, and biological treatment. Any of these treatment methods may be used individually or a combination of all three to treat up to 100 percent of the unit.



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 2-2
Land Status of the Proposed Treatment Units

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Airport Unit

The Airport Unit encompasses 1,839 acres. There are three methods of treatment proposed within this unit: mechanical treatment, chemical treatment, and biological treatment. Any of these treatment methods may be used individually or a combination of all three to treat up to 100 percent of the unit.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not approve the Proposed Action or implement fuel reduction treatments in the Battle Mountain WUI. Under this alternative, current BLM management practices would continue.

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 EFFECTS ANALYSIS

According to 40 CFR 1508.8 (U.S. National Archives and Records Administration 2012):

“Effects’ include:

- (1) Direct effects, which are caused by the action and occur at the same time and place.
- (2) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.”

The environmental effects of the Proposed Action and No Action Alternative described in this EA are primarily derived through the analysis of the expected changes that implementation of each alternative would have on the existing conditions of the resources described in the below sections.

3.2 RESOURCES/ISSUES CONSIDERED FOR ANALYSIS

To comply with NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statutes, regulations, or executive orders (BLM 2008b). Table 3-1 outlines the critical elements that must be addressed in all environmental analyses and denotes if the Proposed Action or No Action Alternative affect those elements.

**Table 3-1
Supplemental Authority Elements Considered in this EA**

Supplemental Authority²	Not Present³	Present/ Not Affected	Present/ May be Affected⁴	Rationale
Air Quality			X	See Section 3.2.1
Areas of Critical Environmental Concern (ACEC)	X			Resource is not present
Bald and Golden Eagles			X	See Section 3.2.5.
Cultural/Historical Resources			X	See Section 3.2.2
Farmlands—Prime or Unique	X			Resource is not present
Floodplains			X	See Section 3.2.3
Forests and Rangelands (HFRA only)		X		Resource is not affected
Human Health and Safety (Herbicide Projects)			X	See Section 3.2.4
Migratory Birds			X	See Section 3.2.5
Native American Religious Concerns			X	See Section 3.2.6
Noxious Weeds/Non-Native Invasive Species			X	See Section 3.2.7
Riparian/Wetlands			X	See Section 3.2.8
Threatened and Endangered Species	X			Resource is not present
Waste—Hazardous and Solid	X			Resource is not present
Water Quality			X	See Section 3.2.9
Wild & Scenic Rivers	X			Resource is not present
Wilderness	X			Resource is not present

Source: BLM 2012c

Table 3-2 lists the other resources of the human environment that were considered in this EA.

² See BLM NEPA Handbook H-1790-1 (January 2008) Supplemental Authorities to be Considered and Instruction Memorandum No. NV-2009-030

³ Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward for analysis or discussed further in the document.

⁴ Supplemental Authorities determined to be Present/May be Affected must be carried forward for analysis in the document.

**Table 3-2
Other Resources Considered in this EA**

Resource	Not Present ⁵	Present/ Not Affected	Present/ May be Affected	Rationale
Grazing Management			X	See Section 3.2.10
Land Use Authorization			X	See Section 3.2.11
Minerals		X		Resource is not affected
Paleontological Resources	X			Resource is not present
Recreation			X	See Section 3.2.12
Socio-Economic Values			X	See Section 3.2.13
Soils			X	See Section 3.2.14
Special Status Species			X	See Section 3.2.15
Vegetation			X	See Section 3.2.16
Visual Resources			X	See Section 3.2.17
Wild Horses and Burros	X			Resource is not present
Wildlife			X	See Section 3.2.18

Source: BLM 2012c

According to Section 6.4.2 of the BLM NEPA Handbook (H-1790-1), resources determined to be “Not Present” or “Present/Not Affected” were not carried forward for analysis. Therefore, the following resources were not brought forward for further analysis in this EA because they are either not present within the project area or they are not affected by the Proposed Action: ACEC, Farmlands (Prime or Unique), Forests and Rangelands (HFRA only), Threatened and Endangered Species, Waste (Hazardous/Solid), Wild and Scenic Rivers, Wilderness, Minerals, Paleontological Resources, and Wild Horses and Burros.

3.2.1 AIR QUALITY

Federal and state laws and regulations govern air quality and the emissions of air pollutants.

Clean Air Act (CAA)

The CAA and the subsequent CAA Amendments of 1990 authorize the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. The CAA established NAAQS for six common air pollutants, known as “criteria” pollutants because the ambient standards set for these pollutants satisfy “criteria” specified in the CAA. These commonly found air pollutants are located all over the United States and include

⁵ Other Resources determined to be Not Present or Present/Not Affected need not be carried forward for analysis or discussed further in the document based on the rationale provided.

particulate matter, ground-level ozone (O₃), carbon monoxide (CO), sulfur oxides (SO_x), nitrogen oxides (NO_x), and lead (Pb). These pollutants can harm human health and the environment, or cause property damage (EPA 2012e). The criteria pollutants regulated by the CAA and their currently applicable NAAQS set by the EPA are listed in Table 3-3.

Nevada State Ambient Air Quality Standards

Nevada Administrative Code (NAC) 445B.22097 includes ambient air quality standards for the State of Nevada (Table 3-3). These standards closely mirror the NAAQS, with the exception of the following:

- The 8-hour O₃ standard revised by the EPA in 2008;
- An additional state standard for CO in areas with an elevation in excess of 5,000 feet above mean sea level (amsl);
- The 1-hour NAAQS standards for nitrogen dioxide (NO₂) and sulfur dioxide (SO₂);
- The state standard for particulate matter (PM₁₀) (annual arithmetic mean) where the comparable NAAQS standard was revoked by the EPA in 2006;
- The 24-hour and annual NAAQS standards for particulate matter (PM_{2.5}) promulgated by the EPA in 2006; and
- For some pollutants, the determination of when a violation of a state standard or federal standard occurs.

**Table 3-3
Federal and State Ambient Air Quality Standards for Criteria Pollutants**

Criteria Pollutant	Averaging Period	Nevada Standards	Federal Standards	
		Concentration	Primary	Secondary
O ₃	1-Hour ⁶	0.12 ppm	--	Same as Primary Standards
	8-Hour ⁶	--	0.075 ppm	
CO	8-Hour (<5,000') ⁷	9 ppm	9 ppm	None

⁶ To attain the 8-hour NAAQS standard, the three-year average of the fourth highest daily maximum 8-hour average O₃ concentrations measured at each monitor within an area over each year must not exceed 0.075 parts per million (ppm) (effective May 27, 2008). The EPA revoked the 1-hour standard in all areas, although some areas have continuing obligations under that standard (“anti-backsliding”). The 1-hour standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

Criteria Pollutant	Averaging Period	Nevada Standards	Federal Standards	
		Concentration	Primary	Secondary
	8-Hour ($\geq 5,000'$) ⁷	6 ppm	9 ppm	
	1-Hour ⁷	35 ppm	35 ppm	
NO ₂	Annual (Arithmetic Mean)	0.053 ppm	0.053 ppm	Same as Primary Standards
	1-Hour ⁸	--	0.1 ppm	None
SO ₂	1-Hour ⁹	0.075 ppm	0.075 ppm	None
	Annual (Arithmetic Mean)	0.030 ppm	--	None
	24-Hour ⁷	0.14 ppm	--	
	3-Hour ⁷	0.5 ppm	None	
PM ₁₀	24-Hour ⁷	150 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	Same as Primary Standards
	Annual Arithmetic Mean	50 $\mu\text{g}/\text{m}^3$	--	
PM _{2.5}	24-Hour (Based on the 98 th Percentile Averaged Over Three Years)	--	35 $\mu\text{g}/\text{m}^3$	Same as Primary Standards
	Annual Arithmetic Mean Averaged Over Three Years	--	15.0 $\mu\text{g}/\text{m}^3$	
Pb	Rolling Three-Month Average	--	0.15 $\mu\text{g}/\text{m}^3$	Same as Primary Standards
	Quarterly Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$	--	
Hydrogen Sulfide (H ₂ S)	1 hour	0.08 ppm	--	--

Source: NAC §445B.22097 and EPA 2012d

Attainment and Non-attainment Areas

Pursuant to the CAA, the EPA has developed classifications for distinct geographic regions known as air quality management areas (AQMAs). Under these classifications, for each federal criteria pollutant, each AQMA is classified as in “attainment,” “non-attainment,” “maintenance,”

⁷ A violation of the federal standard occurs on the second exceedance during a calendar year; a violation of the State of Nevada standard occurs on the first exceedance during a calendar year.

⁸ The 1-hour nitrogen dioxide standard is attained when the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area does not exceed 100 parts per billion (ppb) (effective January 22, 2010).

⁹ To attain this standard, the three-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb. Final rule signed June 2, 2010.

or “attainment-unclassifiable.” Areas of the country where air pollution levels consistently exceed the NAAQS may be designated as “non-attainment,” while regions where the concentrations of pollutants do not exceed federal standards are considered in “attainment.” “Maintenance” areas are geographic areas that had a history of non-attainment, but are now consistently meeting the NAAQS. “Attainment-unclassifiable” designations are for areas that cannot be classified based on available information. A “non-attainment” area cannot be re-designated as an “attainment” area, and any area that contains a site for which air quality violates the NAAQS is designated as “non-attainment” (EPA 2008).

3.2.1.1 AFFECTED ENVIRONMENT

Climate and Meteorology

Elevations in the project area range from approximately 4,500 to 4,870 feet amsl. The climate is characterized by warm, dry summers and cool, moist winters. Based on the data collected and compiled by the Western Regional Climate Center (WRCC) from the Battle Mountain 4 SE, Nevada (260691) weather station over the period 1944 through 2012, the average annual maximum temperature was 66.3 degrees Fahrenheit and the average annual minimum temperature was 32.3 degrees Fahrenheit. July is the warmest month, with the average high temperature reaching 94.1 degrees Fahrenheit. The coldest month is January, with an average low temperature of 16.1 degrees Fahrenheit. The average annual precipitation in the area was 8.10 inches, with most precipitation falling from April to June. The average annual snowfall was 22.0 inches (WRCC 2012).

A key component of assessing meteorological effects on an airshed is through atmospheric dispersion. The primary factors affecting transport and dispersion of pollutants in the atmosphere are wind (speed and direction), temperature inversions (mixing heights), and atmospheric stability (EPA 2010). Based on data collected between 1992 and 2006, the winds at the Winnemucca Airport Automated Stations at Reporting Airports (ASOS) station (closest WRCC ASOS station to the project area with wind data) were typically from the south and averaged 7.6 mph. Month-to-month variations were small, with average wind speeds ranging from 6.7 to 8.4 mph (WRCC 2002, 2006).

Mixing height is the height to which the lower atmosphere will undergo mechanical or turbulent mixing, producing a nearly homogeneous air mass (National Oceanic and Atmospheric Administration [NOAA] 2012). Mixing heights at the Winnemucca, Nevada station (approximately 50 miles from the project area) are estimated at 919 feet above ground level (annual average) in the morning and approximately 7,897 feet above ground level (annual average) in the late afternoon (Holzworth 1972).

Atmospheric stability and the presence of atmospheric turbulence are predominant factors that determine the rate at which airborne pollutants are diffused. Atmospheric stability determines the extent to which vertical mixing will occur and, consequently, the degree to which airborne pollutants are mixed within a parcel of air. The stability is expressed in terms of the Pasquill-Gifford (P-G) stability classification system, which identifies six classes ranging from Class A (very unstable) to Class F (very stable) (Federal Aviation Administration [FAA] 1997). No site-specific data on stability is available.

Air Quality

Nevada is divided into different hydrographic areas, which are used to define local “airsheds.” The project area is located in the Lower Reese River Valley (Hydrographic Area 59) and Clovers Area (Hydrographic Area 64) hydrographic areas (Nevada Division of Water Resources [NDWR] 2011). Air quality monitoring stations are not operated in the Lower Reese River Valley or Clovers Area hydrographic areas, or anywhere nearby. Therefore, the air quality in the project area has been designated as “attainment-unclassifiable” for all pollutants. This means the area either meets or is assumed to meet the applicable federal ambient air quality standards for all criteria air pollutants (EPA 2012a). There are no NO₂, SO₂, CO, PM_{2.5}, or Pb non-attainment areas located within the state of Nevada. The closest non-attainment area to the project area is the PM₁₀ non-attainment area located in Washoe County, Nevada (EPA 2012c). This area is located more than 100 miles west of the project area.

The Ambient Air Quality Monitoring Program of the Nevada Division of Environmental Protection (NDEP)-Bureau of Air Quality Planning (BAQP) operates an ambient air quality-monitoring network of gaseous and particulate pollutant monitors throughout rural Nevada. The BAQP operates three types of ambient monitoring networks: State or Local Air Monitoring Stations (SLAMS), Special Purpose Monitor Stations (SPMS), and National Air Monitoring Stations (NAMS) (NDEP 2012). Currently, the BAQP does not conduct air quality monitoring near the project area. The closest station to the project area is located in Elko, Nevada, which is approximately 60 miles northeast. This site is a SLAMS for continuous monitoring of PM₁₀ only (NDEP 2010). The latest *Nevada Air Quality Trend Report* for 1998 to 2009 reported the highest 24-hour PM₁₀ concentration to be 150 micrograms per cubic meter (µg/m³). In 2009, the mean concentration measured for a 24-hour period for PM₁₀ was only 25 µg/m³ (Table 3-4).

Table 3-4
Ambient PM₁₀ Monitoring Data from the Elko SLAMS Site

Year	24-Hour Average PM ₁₀ Concentration (µg/m ³)		
	1 st High	2 nd High	Arithmetic Mean
1998	100	70	22
1999	80	80	25

Year	24-Hour Average PM ₁₀ Concentration (µg/m ³)		
	1 st High	2 nd High	Arithmetic Mean
2000	90	80	25
2001	100	70	25
2002	150	90	22
2003	110	80	19
2004	80	70	21
2005	90	70	21
2006	130	130	26
2007	90	90	26
2008	40	40	15
2009	140	130	25
Average	100.0	83.3	22.7

Source: NDEP 2011

The project area is not located in or adjacent to any Native American Class I areas, NPS Class I areas, or USFS Class I areas. The only Class I area in Nevada is the Jarbidge Wilderness area (USFS Class I area), which is located more than 100 miles northeast of the project area (EPA 2012b). The air quality class for the entire BMD is Prevention of Significant Deterioration (PSD) Class II (40 CFR 52.21 (e) (3)). Class II allows for temporary, moderate deterioration of air quality (BLM 2012a).

3.2.1.2 ENVIRONMENTAL CONSEQUENCES

3.2.1.2.1 PROPOSED ACTION

Mowing/Mastication

Under the Proposed Action, vegetation in the project area would be reduced using mechanical equipment. This may result in temporary, negative air quality effects from equipment and vehicle emissions. Gasoline-powered string trimmers or mowers would cause localized air pollution because of dust and exhaust emissions. However, these emissions would be short-term, localized, and negligible in nature. In addition, negligible impacts would occur through exhaust from combustion engines associated with vehicles and equipment used for mechanical treatments.

When mechanical treatment is used to control cheatgrass or other noxious weeds and non-native invasive species, periodic re-treatment is often necessary. Therefore, impacts from mechanical treatment (mowing/mastication) can be recurring.

One of the main purposes of the Proposed Action is to reduce the likelihood of wildfire in the WUI around Battle Mountain. Over time, the removal of hazardous fuels should limit the

ignition sources for wildland fires, which would reduce the smoke generated by wildland fires. Therefore, implementation of the Proposed Action would be beneficial in the long-term by reducing the introduction of air pollutants that would result from a wildfire.

Prescribed Grazing

Prescribed grazing could directly affect air quality in the project area through the generation of fugitive dust emissions (PM₁₀) due to soil disturbance from the trampling action of livestock when soil moisture levels are low.

Indirectly, increased vehicle and equipment use that may be required for the routine operation and maintenance of the proposed grazing regime would result in air quality effects. However, emissions from these support vehicles and equipment are assumed negligible.

The chemical byproducts produced in the fecal material of grazing animals may also affect air quality. Ruminant animals emit methane, a greenhouse gas, which is a precursor emission for ozone. However, manure deposited on fields and pastures in the dry form produces insignificant amounts of methane (EPA 2011).

Chemical Application

The use of herbicides for the control of cheatgrass and other noxious weeds and non-native invasive species in the project area can pose a short-term, minor, localized, negative impact to air quality in that some herbicide sprayed onto vegetation would evaporate and some drift is inevitable. However, Plateau® does not evaporate easily and is not volatile; it binds weakly or moderately with most soil types. In addition, photolysis in Plateau® does not occur (Tu et. al 2004).

The best drift management strategy, and most effective way to reduce drift potential, is to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions.

Different methods of application can have significantly different effects on air quality. Under the Proposed Action, broadcast spraying would be the most typical. Broadcast spraying may result in temporary, localized odors that may persist at the spray site for several hours or days. However, by following the design features described in Section 2.1.1, the BLM would reduce drift from broadcast spraying and prevent impacts to air quality.

The use of tractors or ATVs for chemical treatment could occur during implementation of the Proposed Action, which in turn would have a short-term, localized, negligible, impact on air quality from exhaust emissions and dust.

Seeding

Restoring native plants following treatment via broadcast seeding would result in a negligible, beneficial impact to air quality by stabilizing the soil, which reduces dust. However, because treated areas may be monitored for one year prior to seeding, there would be the potential for short-term impacts to air quality due to the lack of significant vegetative cover, which could result in wind-blown dust entering the atmosphere. Dust would be expected to decrease after the first growing season as vegetation becomes established, either naturally or by seeding. This trend would be expected to continue in subsequent growing seasons as a vegetative community develops and organic matter accumulates on the soil surface.

Additional direct impacts would occur because of vehicle use associated with seeding activities. Vehicles used to transport personnel and equipment would emit particulate matter and exhaust gasses into the local atmosphere. However, these emissions would be negligible, localized, and short-term.

3.2.1.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, no proposed WUI treatment activities would occur on public land near the community of Battle Mountain to reduce the potential for wildland fire. As a result, the potential for smoke impacts from wildfire events would remain due to continued hazardous fuel accumulation. As fuel loads increase over time, the risk of wildfire also increases. Impacts to air quality from wildfires depend on the amount of biomass material consumed and atmospheric conditions. High-intensity wildfires with heavy fuel loadings result in a high level of emissions.

If a widespread fire were to occur, it would produce short-term, negative, minor to moderate, regional effects to air quality as large quantities of pollutants (primarily particulates) were released to the atmosphere. Indirect effects from these emissions would include impaired visibility and potential health effects (particularly respiratory problems).

3.2.2 CULTURAL/HISTORICAL RESOURCES

Cultural and historical resources are typically divided into three major categories: archaeological resources (prehistoric or historic), architectural resources, and traditional cultural properties.

- Archaeological resources consist of the physical remains of past human activity. The scientific study of these remains is essential to the understanding and appreciation of prehistoric and historic cultural development. Prehistoric refers to any time or object that predates recorded history, while historic refers to any time or object of the past, after written record.
- Architectural resources are those standing structures that are usually over 50 years of age and are of significant historic or aesthetic importance to be considered for inclusion on the National Register of Historic Places (NRHP).
- Traditional cultural properties are properties or places that are eligible for inclusion on the NRHP because of their association with cultural practices or beliefs that are (1) rooted in the history of a community, and (2) are important to maintaining the continuity of that community's traditional beliefs and practices. The American Indian Religious Freedom Act of 1978 (AIRFA) and the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) protect traditional cultural properties.

The NHPA is legislation intended to preserve historical and archaeological sites in the United States. This act requires federal agencies to evaluate the effects of all federally funded or permitted projects on historic properties through a process known as "Section 106 Review."

BLM compliance with Section 106 of the NHPA is principally accomplished through the State Protocol Agreement between the BLM and SHPO. This agreement establishes procedures undertaken by the BLM to evaluate cultural resources. Specifically, this agreement streamlines the Section 106 process by eliminating case-by-case consultation with SHPO on undertakings that culminate in no effect or no adverse effect determinations. A determination of adverse effects requires that BLM consult with SHPO per the regulations at 36 CFR 800 (BLM 2012e).

3.2.2.1 AFFECTED ENVIRONMENT

The BMD has completed approximately 20 cultural resource investigations in, or near, the project area. However, all but two of these are outdated and for purposes of this project considered inadequate. The two more recent inventories are linear in scope and are located within current project treatment blocks, but do not adequately cover these block areas. Therefore, in compliance with Section 106 of the NHPA, as amended, the BLM would conduct cultural resources inventory in all project areas prior to project implementation so that cultural resource sites could be recorded and avoided.

Past cultural resource inventories have identified seven sites within the proposed treatment units. Site types recorded during these inventories included four open lithic scatters and three historic

trash scatters/dumps. The three historic trash scatters/dumps are not eligible for nomination on the NRHP; the four open lithic scatters are unevaluated.

As required by the AIRFA (42 U.S.C. 1531) and the NHPA (16 U.S.C. 1531), local Native American tribes were notified of the Proposed Action during the coordination process of this project. The BMD received no response from tribal entities.

3.2.2.2 ENVIRONMENTAL CONSEQUENCES

3.2.2.2.1 PROPOSED ACTION

The BLM would conduct a cultural resources inventory in compliance with Section 106 of the NHPA, as amended, at each treatment unit prior to ground-disturbing activities associated with the Proposed Action. The BLM would avoid all cultural resources identified in the project area, utilizing the standard avoidance procedures outlined in the State Protocol Agreement between the BLM and SHPO. As stated in the Proposed Action, sensitive cultural sites would be identified and avoided (may use an onsite monitor to mitigate public knowledge of site locations). Therefore, no significant, adverse impacts to cultural resources would occur under implementation of the Proposed Action.

Indirect, beneficial effects to cultural resources would be realized because of decreased hazardous fuels and the subsequent reduction in the number and severity of wildland fires. If left untreated, there is the potential for high-intensity fires in the Battle Mountain WUI, which may damage cultural resources.

In the long-term, the removal of noxious weeds and non-native invasive species would have positive benefits for the protection of prehistoric or historic sites by protecting and enhancing native plant communities that stabilize the soil. In addition, direct effects from seeding include promoting re-vegetation and preventing additional degradation or loss of cultural resources due to exposure and/or access.

3.2.2.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, no ground-disturbing activities would take place and pre-treatment surveys would not occur. As a result, the BLM would not be obligated to implement Section 106 of the NHPA and its implementing regulations (36 CFR Part 800). All operations would remain the same in the project area, resulting in no impacts to cultural resources.

Under this alternative, the BLM would not remove hazardous fuels from the Battle Mountain WUI. As a result, wildland fires would become more likely within the treatment units and cultural resources would be at an increased risk of damage from wildland fire. Since the BLM

would not reduce fuel loads, this may increase the likelihood of a fire spreading faster, potentially affecting existing cultural sites. The nature and severity of fire effects to cultural resources is dependent on multiple variables, such as fire intensity, duration, and heat penetration into the soil.

The No Action Alternative could result in severe post-fire erosion and consequent loss or damage to cultural resources. Erosion affects the spatial distribution of cultural materials on the surface of a site; if severe, prolonged, or repeated, erosion also affects buried cultural deposits. In addition, structural loss or damage could result from severe erosion episodes.

3.2.3 FLOODPLAINS

Executive Order (EO) 11988, *Floodplain Management*, addresses concerns about the potential loss of the natural and beneficial functions of the nation's floodplains, as well as the increased cost to federal, state, and local governments due to flooding disasters that are caused or worsened by unwise development of floodplains. When funding actions, federal agencies are required to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The Federal Emergency Management Agency's (FEMA) procedures for implementing this EO are found at 44 CFR Part 9.

3.2.3.1 AFFECTED ENVIRONMENT

FEMA characterizes flooding hazards and portrays these hazards on Flood Insurance Rate Maps (FIRM). The relevant maps for the project area are included on the Lander County, Nevada (Lander Co. Community) maps, including the following panels:

- 320013-0140-E (as revised July 15, 1988);
- 320013-0175-D (as revised September 28, 1990);
- 320013-0230-D (as revised July 15, 1988);
- 320013-0235-D (as revised July 15, 1988); and
- 320013-0275-C (as revised July 15, 1988).

Portions of the project area are located within area mapped as Zone X, which are areas determined to be located outside of the 500-year floodplain. However, a large portion of the project area is located within areas mapped as Zone A, which designates areas inundated by the

100-year flood event. This floodplain area is of varying width and is associated with the Humboldt River.

3.2.3.2 ENVIRONMENTAL CONSEQUENCES

3.2.3.2.1 PROPOSED ACTION

Whenever possible, the BLM would avoid occupancy and modification of the 100-year floodplain surrounding the Humboldt River. However, when unavoidable, hazardous fuel reduction in the approximate 2,839-acre project area would result in a temporary and minor increase in soil erosion. Increased erosion could result in minor and temporary sedimentation of the Humboldt River.

Under the Proposed Action, some residual Plateau® herbicide may reside in the soil and be transported to the Humboldt River. However, by following the design features described in Section 2.1.1, the BLM would decrease this potential by buffering the river by 100 feet, which would effectively remove any spraying from the floodplain, and by restricting spraying in windy or rainy conditions. Potential human toxicity would be related to a spill or if Plateau® was misapplied directly into surface waters. Human toxicity would require the ingestion of the contaminated water and would be a problem if it occurred. However, design features for avoiding surface waters should protect human health.

3.2.3.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, no treatment activities would occur in the project area. Therefore, there would be no impacts to the floodplain located in the area.

3.2.4 HUMAN HEALTH AND SAFETY

3.2.4.1 AFFECTED ENVIRONMENT

Wildfires have the potential to affect human health and safety, particularly during high-fire severity periods. Risks include that of inhalation as well as the possibility of obscuring visibility on nearby roads. In addition, wildfires that get out of control present risks from smoke, flames, and for firefighters, the possibility of injuries from use of equipment or from accidental spills of flame-retardants.

The BLM is proposing to use herbicides, in particular Plateau®, within the treatment units for controlling noxious weeds and non-native invasive species. Health and safety warnings for Plateau® use, including precautionary statements, are included on the product label (Appendix

E, pages E-1 thru E-15). According to the Plateau® Safety Data Sheet (Appendix E, pages E-16 thru E-23), Plateau® presents the following potential health effects:

- **Primary Routes of Exposure**—Routes of entry for solids and liquids include eye and skin contact, ingestion, and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.
- **Acute Toxicity**—Relatively nontoxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.
- **Irritation**—May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.
- **Sensitization**—Skin-sensitizing effects were not observed in animal studies.
- **Repeated Dose Toxicity**—No other known chronic effects.
- **Medical Conditions Aggravated by Overexposure**—Individuals with pre-existing diseases of the respiratory, skin, or eyes may have increased susceptibility to excessive exposures.

Under the Proposed Action, all herbicide use would follow the BLM’s Risk Management Worksheet (Appendix E, pages E-25 and E-26). This worksheet provides control measures that the BLM developed for identified hazards and provides specific measures taken to reduce the probability of a hazard.

3.2.4.2 ENVIRONMENTAL CONSEQUENCES

3.2.4.2.1 PROPOSED ACTION

The primary goal of the Proposed Action is to effectively reduce the potential of wildfire and protect life and property. Therefore, implementation of this alternative would result in long-term, minor to moderate, beneficial effects to employees, visitors, firefighters, neighbors, and nearby communities. By reducing the potential for wildfire, associated potential loss of life and property and exposure to the dangers of fire would be decreased.

Mowing/Mastication

Conducting hazardous fuels reduction projects could cause safety concerns due to exposure of workers to potentially dangerous equipment. Mowing noxious weeds and non-native invasive species is expected to have a minor impact on human health and safety. Individuals who engage

in mechanical control activities face risks that are similar to those encountered when people are involved in strenuous outdoor activities. Risks include dehydration, fatigue, heat exhaustion, or heat stroke. In addition, falls or other accidents are possible. Other potential hazards related to manual operations include eye irritation or damage from flying debris and bodily injuries from hand tools. However, diligent training of work crews and use of PPE would reduce the level of risk. Therefore, any short-term, negative effects of mechanical treatments would be negligible.

Chemical Application

According to the Plateau® Safety Data Sheet (Appendix E, pages E-16 thru E-23), Plateau® has the following toxicological risks.

**Table 3-5
Toxicological Information of Plateau® Herbicide**

Route	Species	Dose/Explanation
Oral (LD50)	rat	>5,000 mg/kg
Inhalation (LC50)	rat	>2.38 mg/l / 4 h Moderately Toxic
	rat	>9.52 mg/l / 1 h
Dermal (LD50)	rabbit	>5,000 mg/kg
Skin Irritation	rabbit	non-irritant (primary skin irritation test)
Eye Irritation	rabbit	non-irritant
Skin Sensitization	guinea pig	skin sensitizing effects were not observed in animal studies
Genetic Toxicity	guinea pig	no mutagenic effect was found in various tests with microorganisms and mammals
Carcinogenicity	rats and mice	carcinogenic effect was not observed
Reproductive Toxicity	animal studies	no indication of a fertility impairing effect
Develop. Toxicity/ Teratogenicity	animal studies	no indications of a developmental toxic / teratogenic effect were seen

Source: BASF, The Chemical Company, 2008

There can be an indirect effect on human health from herbicide use through improper application, mixing, or contamination of a water source. However, as described in the Proposed Action, the BLM would strictly follow herbicide-labeling instructions. Therefore, the greatest safety concern of chemical application involves the workers that apply the herbicides. However, the toxicity data presented in Table 3-5 suggests that Plateau® is generally safe if properly used in accordance with its label.

All workers applying herbicides under the Proposed Action would be licensed or supervised by licensed applicators. Research shows that PPE such as long-sleeve shirts, long pants, chemical-resistant gloves made out of waterproof material, and shoes plus socks can substantially reduce dermal exposure.

3.2.4.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be the continued accumulation of fuels in the proposed treatment areas. Therefore, the risk of exposure to wildfire in these areas would increase. Small fires, as well as suppression efforts, would pose little threat to the public and a minor threat to firefighters. However, a spread of fire or larger fires would result in increased risk to health and safety.

Factors most likely to negatively affect firefighter health and safety under the No Action Alternative include activities associated with wildland fire suppression efforts (such as accidental spills), injuries from the use of fire-fighting equipment, smoke inhalation, and in severe cases, direct injuries from wildland fires. Impacts to the public could include smoke inhalation and injuries from fire.

Smoke inhalation could create human health and safety hazards. Smoke from wildland fires is composed of hundreds of chemicals in gaseous, liquid, and solid forms. The chief inhalation hazards appear to be CO, aldehydes, particulate matter (PM_{2.5}), and total suspended particulate (TSP). Negative health effects of smoke exposure begin with acute, instantaneous eye and respiratory irritation and shortness of breath, but can develop into headaches, dizziness, and nausea lasting up to several hours.

Overall, the risks to public health and safety from wildfires could include loss of life and property, injury, and health effects caused by exposure to smoke emissions. These risks represent a minor to moderate, short- to long-term effect. Human safety is the first priority during a wildfire, and evacuation of the area would occur if a wildfire threatened occupied structures.

3.2.5 MIGRATORY BIRDS

Migratory bird means any bird protected by the Migratory Bird Treaty Act (MBTA), as listed in 50 CFR 10.13. All native birds commonly found in the United States, with the exception of native, resident, gallinaceous birds, are protected under the provisions of the MBTA (16 U.S.C. 703-711). The MBTA makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal

regulations. BLM Instruction Memorandum (IM) 2008-05 (*Migratory Bird Treaty Act—Interim Management Guidance*) directs the BLM to consider the goals and objectives established by local, state, and federal conservation strategies in accordance with the MBTA.

Additional direction comes from a January 17, 2001 Memorandum of Understanding (MOU) between the BLM and the U.S. Fish and Wildlife Service (USFWS). This MOU strengthens migratory bird conservation through enhanced collaboration between the two agencies, in coordination with state, tribal, and local governments. The MOU identifies management practices that could affect populations of high priority migratory bird species including migratory bird nesting, migration, and over-wintering habitats, and develops objectives and recommendations that would avoid or minimize these impacts.

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973.” These birds are known as “birds of conservation concern” (BCC).

3.2.5.1 AFFECTED ENVIRONMENT

Bird species that the MBTA protects could occur virtually anywhere within the proposed project area. The project area is located within Lander County, Nevada, which is near a principal migratory route, known as the Pacific Flyway. Appendix F provides a list of breeding, migratory birds that are known to have over a ten percent probability of occurrence within the project area (Great Basin Bird Observatory [GBBO] 2006).

The project area is located within Bird Conservation Region (BCR) 9. Birds included on the BCC 2008 list that either occur, or have the potential to occur, within the project area based on nesting and/or foraging requirements include black rosy-finch (*Leucostictes atrata*), Brewer’s sparrow (*Euphagus cyanocephalus*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), loggerhead shrike (*Lanius ludovicianus*), long-billed curlew (*Numenius americanus*) sage sparrow (*Amphispiza belli*), and sage thrasher (*Oreoscoptes montanus*). Other migratory bird species that have the potential to occur within the project area include Swainson’s hawk (*Buteo swainsoni*) and western burrowing owl (*Athene cunicularia*).

Table 3-6 provides each of the above-listed species’ habitat requirements, as well as their potential to occur within the project area and potential impacts from implementing the proposed treatments.

**Table 3-6
 Habitat Types of the Migratory Bird Species within the Project Area**

Migratory Bird Species	Species' Habitat Types within Project Area	Treatment Units with Habitat	Treatment Proposed
Black Rosy-Finch	Cliffs and Canyons	None—Immediately adjacent to Airport Unit	M, C, B
	Grasslands and Meadows	Battle Mountain West, Copper Basin, Airport	M, C, B
Brewer's Sparrow	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B
Ferruginous Hawk	Cliffs and Canyons	None—Immediately adjacent to Airport Unit	M, C, B
	Grasslands and Meadows	Battle Mountain West, Copper Basin, Airport	M, C, B
	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B
Golden Eagle	Cliffs and Canyons	None—Immediately adjacent to Airport Unit	M, C, B
	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B
Loggerhead Shrike	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B
Long-Billed Curlew	Desert Playas and Ephemeral Pools	Blossom Spring	M, C, B
Sage Sparrow	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B
Sage Thrasher	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B
Western Burrowing Owl	Grasslands and Meadows	Battle Mountain West, Copper Basin, Airport	M, C, B
	Intermountain Cold Desert Scrub	All units	M, C, B
	Sagebrush	All units ¹⁰	M, C, B

Source: NDOW, 2012; M = Mechanical; C = Chemical; B = Biological

Black Rosy-Finch

The black rosy-finch is a BLM sensitive species. In Nevada, this species is associated with cliffs, montane shrub, and sagebrush (*Artemisia spp.*) habitat types (Neel 1999). This bird breeds in eastern Nevada on the highest mountains in Elko and White Pine counties (Nevada

¹⁰ Although big sagebrush has the potential to be present in all treatment units, it is more likely that the treatment units are dominated by salt desert shrub communities (i.e. bud sagebrush and shadscale) or cheatgrass.

Department of Wildlife [NDOW] 1993). In the winter, mixed flocks of this species are found at lower elevations throughout Nevada. These flocks can range from small groups of 10 to 20 birds to flocks over 1,500 birds (Alcorn 1988). In Nevada, black rosy-finches prefer to breed and nest in alpine tundra habitat (Neel 1999).

Brewer's Sparrow

Brewer's sparrow is a BLM sensitive species. These sparrows are neo-tropical migrants that typically arrive in Nevada in early April, with a few individuals occasionally arriving in mid-March (Hansley and Beauvais 2004). They primarily breed in shrub-steppe habitats and are considered shrub-steppe obligates. This sparrow usually constructs its nest in the mid to upper canopy of tall, dense sagebrush. The clutch size is usually three to four eggs, and the incubation period is 10 to 12 days. Hatching generally begins in late May and peaks during the middle of June. Active nests that are found between late June and mid-July may represent re-nesting after failed attempts or double brooding. Nestlings will leave the nest within six to nine days, and remain around the nest area for several days until they are capable of flight. Loss of sagebrush-steppe habitat is considered the main threat to the Brewer's sparrow (Parrish et. al. 2002).

Ferruginous Hawk

The ferruginous hawk is a BLM sensitive species. Ferruginous hawks are associated with pinyon-juniper, sagebrush, cliff, and agricultural habitat types in Nevada. Dispersed juniper (*Juniperus spp.*) trees found at the ecotone of pinyon-juniper and desert shrub communities provide ideal nesting trees for ferruginous hawks. The hawk is also commonly observed nesting in cliffs. Ideal ferruginous hawk hunting territory consists of sagebrush communities associated with native grasses and forbs, as these communities generally support a high density of ground squirrels (*Spermophilus spp.*) and lagomorphs. A major threat to the hawk is the conversion of native rangelands to exotic forbs and grasses through over-grazing and fire (Neel 1999).

Golden Eagle

The golden eagle is a BLM sensitive species and is Nevada's largest resident bird of prey, sometimes weighing over twelve pounds and having a wingspan that may exceed seven feet. Golden eagles use a variety of habitat types in Nevada, including sagebrush, salt desert scrub, cliffs, agricultural lands, mountain mahogany (*Cercocarpus spp.*), pinyon-juniper, aspen (*Populus spp.*), lowland riparian, and mountain riparian (SWReGAP Analysis Wildlife Habitat Relationship 2005). The bird is a common year-round resident within the project area and feeds on a variety of small mammals, snakes, birds, juvenile ungulates, and carrion. The eagle generally constructs its nest on cliffs or in large trees (UDWR, Undated).

Loggerhead Shrike

The loggerhead shrike is a BLM sensitive species. Within Nevada, loggerhead shrikes are associated with montane shrub, sagebrush, and salt desert scrub habitats. More specifically, this bird prefers shadscale (*Atriplex confertifolia*), sagebrush, and greasewood (*Sarcobatus spp.*) areas. Loggerhead shrikes nest in isolated trees or large shrubs and use scattered, tall shrubs and fences as perches to feed on a variety of prey, which includes small birds, lizards, and mice. Maintaining mature classes of sagebrush and salt desert scrub is important for the conservation of the species (Neel 1999).

Long-Billed Curlew

Long-billed curlews breed across northern Nevada, but there is a pronounced concentration in the northeast quadrant of the state. In Nevada, these birds are found breeding and foraging in open habitats with moderate grass or other ground cover. The curlew generally avoids areas with trees, high shrub densities, and tall dense grasses. Habitat threats for this species include loss of wet meadows, loss of flood-irrigated agricultural fields, and heavy livestock grazing, haying, or dragging (GBBO 2012d).

Sage Sparrow

Sage sparrows are sagebrush obligate species that prefer areas with shrubs at least 18 inches tall with 10 to 25 percent crown cover mixed with a sparse grass and forb component (Neel 1999). The sparrow is a ground-feeding omnivore during the summer and a grain eater in the winter. Sage sparrows will primarily nest in shrubs, but they may also nest on the ground under a shrub or in bunchgrass. Egg laying begins in mid-April and extends through mid-June. Sage sparrows will generally begin to fly south for their winter migration during early fall (Parrish et. al 2002).

Sage Thrasher

The sage thrasher is a BLM sensitive species. Sage thrashers are sagebrush obligates ranging from 4,900 to 8,200 feet in elevation. The sage thrasher either constructs its nest in the branches of sagebrush or places its nest underneath the shrub. Insects comprise the majority of a sage thrasher's diet, but the bird will also forage on fruits and berries. Management recommendations include maintaining areas with sagebrush at least 23.6 inches tall with a greater than 30 percent canopy closure, as well as a grass and forb component to provide insects (Neel 1999).

Swainson's Hawk

Swainson's hawks are summer residents throughout Nevada and are associated with montane shrub, sagebrush, and agricultural habitats. Nesting generally occurs within these habitats at

elevations between 3,000 and 4,500 feet. However, individual pairs have been observed nesting at elevations up to 6,000 feet. Isolated cottonwood (*Populus spp.*) trees are generally the preferred nesting tree, but nests located in junipers and aspen have been documented. The primary food sources for the bird are small mammals and large insects (Neel 1999).

Western Burrowing Owl

Western burrowing owls are summer inhabitants of Nevada and are associated with sagebrush, salt desert scrub, and agricultural habitats. Within these habitat types, suitable areas for the owl consists of shrubs spaced far apart or low stature vegetation that allows the bird to see for long distances. Ideal habitats are also closely associated with burrowing animals such as ground squirrels and badgers (*Taxidea taxus*), as burrowing owls use holes created by these species as nest sites. Prey for burrowing owls consists of small rodents and insects (Neel 1999).

3.2.5.2 ENVIRONMENTAL CONSEQUENCES

3.2.5.2.1 PROPOSED ACTION

The Proposed Action would result in up to approximately 2,839 acres of disturbance. Disturbance could impact 2,839 acres of available nesting and foraging habitat for shrub-nesting and ground-nesting species, as well as the foraging habitat for raptor species. Any ground-clearing or other vegetation-disturbing activities during the migratory bird nesting season risks a violation of the MBTA by destroying the eggs or young of common shrub-nesting birds such as the sage thrasher, sage sparrow, and Brewer's sparrow. However, it is unlikely that the Proposed Action would adversely affect the overall populations of any migratory bird species. The temporary loss of approximately 2,839 acres of nesting and foraging habitat, with the majority being unsuitable cheatgrass, would be minimal compared to the amount of available nesting and foraging habitat within the Reese River Valley and nearby Shoshone and Battle Mountains.

Though the plan would be to conduct treatment activities outside the migratory bird nesting season, appropriate design features (as outlined in Section 2.1.1) would be implemented if treatment were to occur during the nesting season. The nesting season for raptor species is from March 1 to July 31, and the nesting season for all other avian species is between April 1 and July 31.

Noise could displace individual birds from the proposed treatment areas during project implementation. However, this disturbance would be minimal and short-term.

The BLM would conduct project activities with the potential to disturb migratory bird nests outside of the bird-nesting season, whenever practicable.

Chemical Application

The EPA classifies pesticides according to their acute toxicity responses (Table 3-7). Compounds with acute values > 2,000 milligrams per kilogram (mg/kg) are classified “practically non-toxic” (best rating), while compounds with acute values of 501 to 2,000 mg/kg are classified as “slightly toxic” (second best classification) (EPA 2012f). According to the Material Safety Data Sheet (MSDS) for Plateau®, Plateau® has an acute oral toxicity of > 5,000 mg/kg and is therefore classified as “practically non-toxic” to avian wildlife (BASF 2008). Therefore, there would be little chance of take from the Proposed Action. Because of the relatively low toxicity of this chemical and the fact that it does not bioaccumulate or involve vegetation that associated bird species generally use for forage or nesting purposes, there is no reasonable probability that migratory bird species would be exposed to meaningful levels of this herbicide.

**Table 3-7
Ecotoxicity Categories for Terrestrial and Aquatic Organisms**

Toxicity Category	Avian: Acute Oral Conc. (mg/kg)	Avian: Dietary Conc. (ppm)	Aquatic Organisms: Acute Conc. (ppm)	Wild Mammals: Acute Oral Conc. (mg/kg)	Non-Target Insects: Acute Conc. (µg/bee)
Very Highly Toxic	< 10	< 50	< 0.1	< 10	
Highly Toxic	10-50	50-500	0.1-1	10-50	< 2
Moderately Toxic	51-500	501-1,000	> 1 – 10	51-500	2-11
Slightly Toxic	501-2,000	1,001-5,000	> 10-100	501-2,000	
Practically Nontoxic	> 2,000	> 5,000	> 100	> 2,000	> 11

Source: EPA 2012f

The treatment of cheatgrass, as well as the seeding of desired vegetative species if deemed necessary, could increase the quality of foraging and nesting habitat for avian species within the project area over the long-term. This would help restore habitat for migratory birds, which would be beneficial in the long-term.

3.2.5.2.2 NO ACTION ALTERNATIVE

There would be no chance of take of migratory birds from the No Action Alternative. In addition, there would be no potential exposure of migratory bird species to Plateau® or other similar herbicides. Consequently, the proposed treatment units would remain dominated by annual, noxious weeds and non-native invasive species, such as cheatgrass. Without treatment, these areas would remain static, allowing for the continued suppression of native vegetation, whose resources would be more beneficial to migratory bird species.

3.2.6 NATIVE AMERICAN RELIGIOUS CONCERNS

In accordance with the NHPA (P.L. 89-665), NEPA (P.L. 91-190), FLPMA (P.L. 94-579), AIRFA (P.L. 95-341), the NAGPRA (P.L. 101-601), Archaeological Resources Protection Act (ARPA) (P.L. 96-95), EO 13007 (*Indian Sacred Sites*, 1996), EO 13175 (*Consultation and Coordination with Indian Tribal Governments*, 2000), and the DOI policy on consultation with Indian Tribes (IM 2012-062), the BLM must provide affected tribes, organizations, and/or individuals an opportunity to participate in, comment, and consult on the proposed project. The BLM must attempt to limit, reduce, or possibly eliminate any negative impacts to Native American traditional/cultural/spiritual sites, activities, and resources.

According to the NAGPRA, Section (3) (d) (1), upon discovery of a Native American cultural item, the discovering individual must notify the land manager in writing of such a discovery. If the discovery occurs in connection with an authorized use, the activity in the area of the discovery shall cease. Following notification and upon certification that the land manager has received the notification, the activity may resume after 30 days.

3.2.6.1 AFFECTED ENVIRONMENT

Recognized tribes with interests within the project area include the Duckwater Shoshone Tribe, Yomba Shoshone Tribe, Te-Moak Tribe of Western Shoshone, and Battle Mountain Band. The BLM sent these tribes a coordination letter, which described the proposed project (Appendix C, pages C-5 thru C-12). The BLM did not receive any comments from these tribes regarding the proposed project.

All pertinent documentation of cultural sites and activities has been considered in this EA and the BLM has committed to avoidance of all cultural sites.

3.2.6.2 ENVIRONMENTAL CONSEQUENCES

3.2.6.2.1 PROPOSED ACTION

Communication and coordination have occurred with the Duckwater Shoshone Tribe, Yomba Shoshone Tribe, Te-Moak Tribe of Western Shoshone, and Battle Mountain Band. The BLM would identify cultural resources in the project area prior to project implementation. Therefore, implementation of the Proposed Action would not likely result in any adverse impacts to Native American concerns.

Though the possibility of disturbing Native American gravesites within the project area is low, inadvertent discovery procedures would be followed (NAGPRA 1990). If a discovery occurs in connection with an authorized use, the activity would cease and the BLM would protect the

material. In addition, persons conducting project implementation would not collect cultural properties, items, or artifacts.

Fire-sensitive cultural sites that wildfire could destroy would likely remain in existence if the intensity of wildfire was decreased through fuels reduction activities of the Proposed Action.

The use of Plateau® herbicide would not present risk to any receptors when applied in routine situations either at the typical or maximum application rate.

3.2.6.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not have a federal action and conditions would remain the same as existing conditions. Therefore, there would be no impacts to Native American religious concerns.

3.2.7 NOXIOUS WEEDS/NON-NATIVE INVASIVE SPECIES

Noxious weeds and non-native invasive species are designated by state, federal, or other laws and regulations and are mandated to be prevented or controlled because of their potential to cause economic harm (i.e. affect the quality of forage on rangelands, affect cropland, or affect forest land productivity), environmental harm (i.e. displace native plants and natural habitats), or harm human and animal health. The BLM defines a noxious weed as “a plant that interferes with management objectives for a given area of land at a given point in time.” An invasive species is defined as a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (EO 13112). Noxious weeds and non-native invasive species are highly competitive, aggressive, and easily spread. The potential impacts from ground disturbances would be reduced by the design features outlined in Section 2.1.1 requiring the use of BMPs to reduce the introduction or spread of noxious weeds and non-native invasive species.

The BLM follows all federal noxious weeds and non-native invasive species’ laws, EO 13112 (*Prevention and Control of Invasive Species*), various BLM Manuals, and National Regulatory Services (NRS) and NAC Chapter 555.

3.2.7.1 AFFECTED ENVIRONMENT

The BMD recognizes the current noxious weed list designated by the Nevada Department of Agriculture (NDOA) (Appendix G). The BLM has established a partnership with the Lander County Conservation District (LCCD) to manage noxious weeds and non-native invasive species on BLM-administered lands. The LCCD also provides private landowners with financial, technical, and educational assistance to control noxious weeds and non-native invasive species.

Noxious weed species in the state of Nevada that are considered detrimental to the environment have been placed on a special list in the NAC and have been classified into three categories. Noxious weeds are designated as Category A, B, or C. Category A noxious weeds are weeds that are generally not found or that are limited in distribution throughout Nevada. Category B listed noxious species are weeds that are generally established in scattered populations in some counties of Nevada. Category C listed noxious weeds are weeds that are generally established and generally widespread in many counties of Nevada. Table 3-8 provides a list of the noxious weeds observed in and around the project area.

**Table 3-8
Noxious Weeds in and around the Project Area**

Common Name	Scientific Name
CATEGORY B	
Russian Knapweed	<i>Centaurea repens</i>
CATEGORY C	
Hoary Cress	<i>Cardaria draba</i>
Perennial Pepperweed	<i>Lepidium latifolium</i>
Salt Cedar	<i>Tamarix parviflora</i>

Source: NDOA 2009

Cheatgrass is a non-native and invasive species that is also found throughout the project area. It is an annual grass that forms tufts up to two feet tall. The leaves and sheaths are covered in short, soft hairs. The flowers occur as drooping, open, terminal clusters that can have a greenish, red, or purple hue. Flowering occurs in the early summer and germination occurs in fall or spring. Senescence usually occurs in summer. Cheatgrass invades rangelands, pastures, prairies, and other open areas. This species has the potential to completely alter the ecosystems it invades. Cheatgrass can completely replace native vegetation and change fire regimes (Invasive Plant Atlas [IPA] 2012).

Saltlover (*Halogeton glomeratus*) and Russian thistle (*Salsola spp.*) are non-native invasive species known to be present in the project area. The *Integrated Weed Management Plan, Department of the Interior, Bureau of Land Management, Battle Mountain District, Nevada* provides additional information on the management of the above-listed species.

3.2.7.2 ENVIRONMENTAL CONSEQUENCES

3.2.7.2.1 PROPOSED ACTION

The Proposed Action would result in surface disturbance of up to 2,839 acres near the community of Battle Mountain. Cheatgrass infestations already present in the project area would likely return following implementation of the Proposed Action (in particular ground-disturbing

activities) until native vegetation is established either naturally or by seeding. Seeding would promote the establishment of native vegetation species and would therefore result in a long-term, beneficial impact.

Any ground disturbance that takes place under the Proposed Action has the potential to provide the opportunity for noxious weeds and non-native invasive species to become established. As soil disturbance increases, the risk of noxious weeds and non-native invasive species establishment and spreading into neighboring habitats also increases. However, impacts would be minimized through the implementation of design features outlined in Section 2.1.1 requiring the use of BMPs to reduce the introduction or spread of noxious weeds and non-native invasive species. Mastication treatment methods that minimize ground disturbance near the soil surface would be applied.

Heavy equipment has the potential to disturb soils and to provide a seedbed. However, impacts would be minimized through the implementation of design features outlined in Section 2.1.1 requiring equipment to be washed in accordance with BLM standard operating procedures to prevent the transfer of undesirable weed seeds from other areas.

Mowing/Mastication

While noxious weeds and non-native invasive species can invade natural landscapes regardless of their ecological status, areas of disturbance usually provide fertile ground for noxious weeds and non-native invasive species to gain a foothold. Therefore, any management practice that results in soil disturbance, such as mowing, could result in some degree of noxious weeds and non-native invasive species establishment. However, as mentioned above, shrub mastication under the Proposed Action would not occur all the way down to the soil.

Prescribed Grazing

Livestock grazing can contribute to the establishment and spread of noxious weeds and non-native invasive species in the project area. However, this is usually the result of heavy grazing. Under the Proposed Action, the BLM would rest grazed areas to prevent overgrazing. Therefore, native vegetation communities in the project area should remain healthy and intact following grazing.

Livestock grazing could result in the spread of noxious weeds and non-native invasive species into uninfested areas via livestock feces.

Chemical Application

Site-specific use of Plateau® offers great potential in improving the success rate of re-vegetation of disturbed areas with adapted perennial species, thereby preempting the establishment and proliferation of cheatgrass. Application of herbicide would directly hinder noxious weeds and non-native invasive species establishment and growth in treated areas. This would enable greater competitive interactions of native and seeded plant species against noxious weeds and non-native invasive species, which should increase the success rate for the propagation, establishment, and further growth of seeded plants and current vegetative communities.

The BLM can apply Plateau® as a pre- or post-emergent herbicide to control cheatgrass, creating a fallow environment that the BLM can subsequently seed with adapted species to stabilize the disturbed areas. The successful establishment of these species would prevent cheatgrass from dominating the post disturbance environment.

Seeding

Seeding mitigates the risk of site occupation by noxious weeds and non-native invasive species because once desirable seeds establish they tend to compete with undesirable species. Therefore, seeding would result in a long-term, beneficial impact to native species in the treatment units.

3.2.7.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no direct effects to noxious weeds and non-native invasive species resulting from mowing/mastication, prescribed grazing, chemical application, and seeding. Areas that have degraded conditions due to the prevalence of noxious weeds and non-native invasive species, such as cheatgrass, would remain in that state with a lack of adequate cover of native grasses, forbs, and shrubs. This may allow for further encroachment and establishment of noxious weeds and non-native invasive species into adjacent native rangelands. Areas that are already colonized by noxious weeds and non-native invasive species would likely increase in size unless treated. This is particularly true along roadways and other disturbed sites.

The current presence and potential increase in noxious weeds and non-native invasive species would also increase the potential for large scale, high intensity wildfires. Burned areas provide favorable conditions for cheatgrass propagation and further establishment.

3.2.8 RIPARIAN/WETLANDS

Management considerations must comply with EO 11990, *Protection of Wetlands*. The purpose of this EO is to “minimize the destruction, loss, or degradation of wetlands and to preserve and

enhance the natural and beneficial values of wetlands.” To meet these objections, EO 11990 requires federal agencies to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

Section 404 of the Clean Water Act (CWA) regulates the placement of dredged or fill materials into wetlands and other waters of the United States. The U.S. Army Corps of Engineers (USACE) administers a permit review process, which regulates proposed activities.

3.2.8.1 AFFECTED ENVIRONMENT

A review of the USFWS’ National Wetlands Inventory for the project area indicates that there are no wetlands within the proposed treatment units. In addition, there are no riparian areas located within the proposed treatment areas. However, there are 9 wetlands near these units, as shown in Figure 3-1. All of these wetlands are either freshwater forested/shrub (PSS) or freshwater emergent (PEM) wetlands. Table 3-9 provides detailed information on each of these wetlands.

**Table 3-9
Wetlands near the Project Area**

Attribute	Type	Acres	Approximate Distance and Direction from Project Area
PEM	Freshwater Emergent	57,608.25	11.36 miles north
PSS	Freshwater Forested/Shrub	68.28	5.51 miles north
PSS	Freshwater Forested/Shrub	141.55	5.33 miles north
PSS	Freshwater Forested/Shrub	21,327.07	5.06 miles north
PSS	Freshwater Forested/Shrub	421.41	3.91 acres north
PSS	Freshwater Forested/Shrub	372.52	3.87 miles north
PSS	Freshwater Forested/Shrub	647.42	3.23 miles north
PSS	Freshwater Forested/Shrub	149.51	2.37 miles north
PEM	Freshwater Emergent	763.78	2.97 miles south

Source: USFWS 2012a

The USFWS classifies all of the wetlands located near the project area in the Palustrine System. The Palustrine System includes all non-tidal wetlands that are dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 parts per thousand (ppt). Wetlands lacking such vegetation are also included in this system if they exhibit all of the following characteristics:

- Are less than 20 acres;
- Do not have an active wave-formed or bedrock shoreline feature;

- Have at low water a depth less than 6.6 feet in the deepest part of the basin; and
- Have salinity due to ocean-derived salts less than 0.5 ppt.

Shrubs, small trees, or trees over 20 feet tall characterize the Freshwater Forested/Shrub wetlands. Erect, rooted, herbaceous hydrophytes, excluding mosses and lichens, characterize the Freshwater Emergent wetlands. This vegetation is present for most of the growing season in most years. Perennial plants usually dominate these wetlands.

3.2.8.2 ENVIRONMENTAL CONSEQUENCES

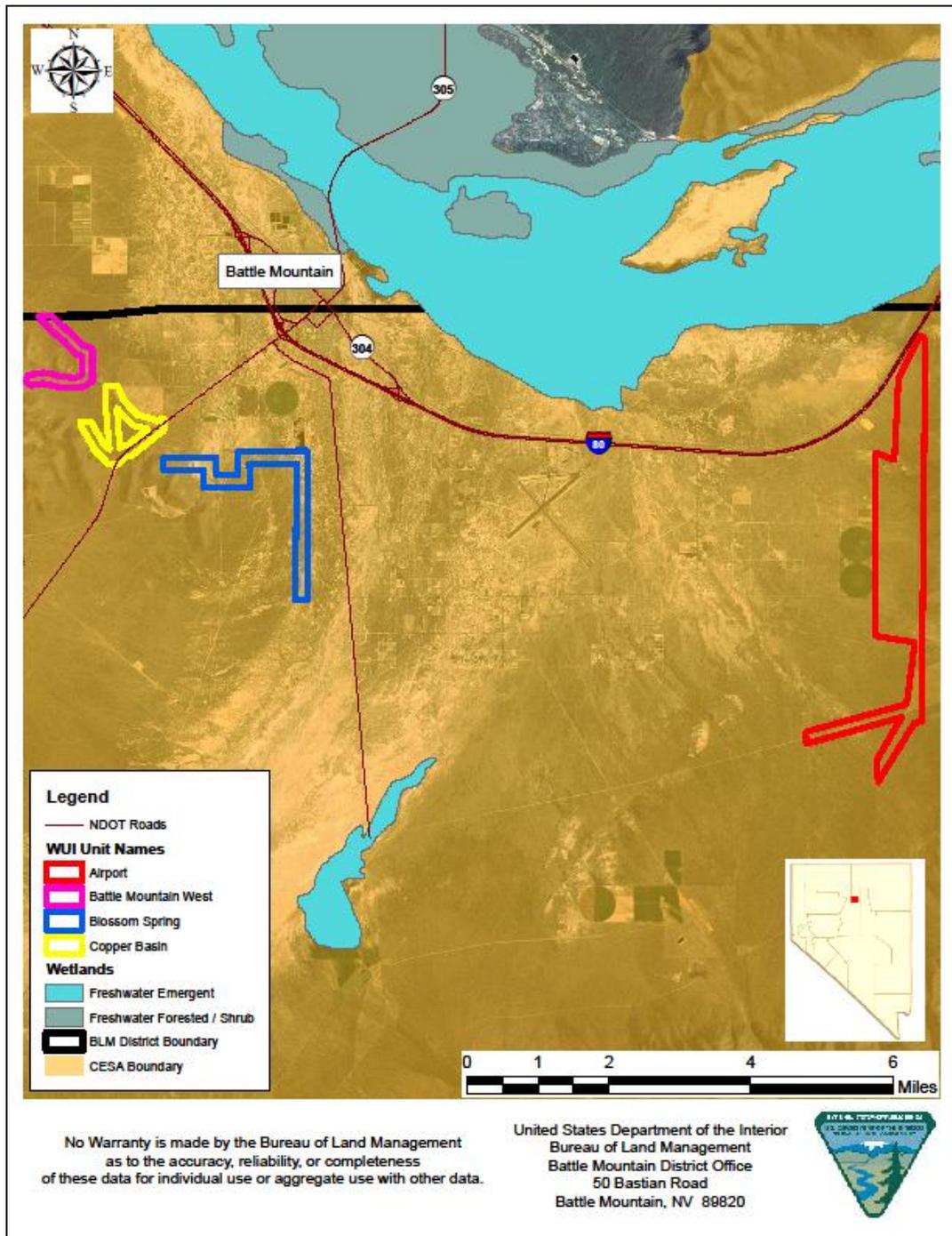
3.2.8.2.1 PROPOSED ACTION

There are no wetlands occurring in the proposed project area that would be affected by the Proposed Action. However, fuel reduction treatments would have the potential for short-term, negligible effects on nearby wetlands. These impacts would potentially result from treatments in areas adjacent to, or closely upgradient of wetlands. However, impacts would be minimized through the implementation of design features outlined in Section 2.1.1 requiring that debris removed from treatment areas would not be transported through wetlands.

3.2.8.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not alter hazardous fuels in the Battle Mountain WUI; hazardous fuels would continue to accumulate. Therefore, there would be an increased potential for an uncontrolled wildfire. Such a fire could cause direct and indirect, negligible to moderate effects to riparian and wetland resources.

A large wildfire would result in elimination of vegetation, which would expose surface soils to erosion. Sediments could accumulate in the runoff to nearby streams (i.e. Humboldt River), causing temporary deterioration of water quality. Otherwise, conditions would largely remain the same and there would be no impacts to nearby riparian areas or wetlands under the No Action Alternative.



Source: Adapted from USFWS, National Wetlands Inventory, 2012

Figure 3-1
Wetlands Located within the CESA Boundary

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3.2.9 WATER QUALITY

NDEP requires compliance with the National Pollution Discharge Elimination System (NPDES) related to discharges to waters of the United States. In addition, NDEP requires that discharges into subsurface waters be controlled if the potential for contamination of groundwater supplies exist.

The Nevada Water Pollution Control Law provides the state the authority to maintain water quality for public use, wildlife, existing industries, agriculture, and economic development. NDEP defines waters of the state to include surface water, waterways, drainage systems, and underground water.

3.2.9.1 AFFECTED ENVIRONMENT

Groundwater

According to the Groundwater Atlas of the United States, the project area is located within the Basin and Range aquifers. These aquifers underlie most of Nevada and are formed of volcanic and carbonate rocks and unconsolidated to consolidated basin-fill deposits. The type of aquifers found in the project area is basin-fill aquifers, which are primarily unconsolidated sand and gravel of Quaternary and Tertiary age (U.S. Geological Survey [USGS] 1995).

Surface Water

The project area is located within the Humboldt River Basin. This basin includes a drainage area of approximately 4,742,000 acres. The Reese River occurs within the proposed project area. In addition, numerous streams and creeks are located to the north of the project area, including the Humboldt River and Rock Creek.

Reese River—The Reese River is a 181-mile long tributary of the Humboldt River, located in central Nevada. Although considered a tributary of the Humboldt River, in most years the Reese River dwindles into a chain of shallow pools long before it reaches the main stem. Only during infrequent floods does the Reese River contribute water to the Humboldt River, entering near Battle Mountain.

Humboldt River—The Humboldt River is approximately 330 miles long and is the second longest river in the Great Basin. It has no outlet to the ocean, but instead empties into the Humboldt Sink. Through its tributaries, the river drains most of northern Nevada, traversing the state roughly east to west, and passing through repeated gaps in the north-south running mountain ranges.

Appendix H provides NDEP's 2008 to 2010 303(d) list for the Humboldt River Basin. Portions of the Reese River and Humboldt River are included on this list.

3.2.9.2 ENVIRONMENTAL CONSEQUENCES

3.2.9.2.1 PROPOSED ACTION

Under the Proposed Action, the BLM would control cheatgrass and other noxious weeds and non-native invasive species. Noxious weeds and non-native invasive species control is known to maintain healthy watersheds by reducing competition and promoting the establishment of native species adapted to local soil and erosion conditions. In addition, long-term, indirect effects from noxious weeds and non-native invasive species treatments would include improved hydrologic function of the watershed as the site becomes re-vegetated with desirable species. Mechanical treatments (i.e. mowing) would result in very little site disturbance and soil compaction, having little impact on infiltration rates.

The Proposed Action would include the application of Plateau®, or other similar herbicides, to control areas that cheatgrass dominates. It is unlikely that the applied herbicide would make it to water bodies. The primary methods of Plateau® movement are runoff, drift, misapplication/spills, and leaching. Any of these means could affect surface and groundwater. However, in aquatic systems, Plateau® rapidly photo-degrades, with a half-life of 1 to 2 days and does not persist in surface waters past 30 days with oxygen. Application rates should not be such that this chemical would move past the rooting zone of cheatgrass, which is very shallow. Therefore, with successful application, no impacts to groundwater are expected. In addition, Plateau is documented to be of low-toxicity to fish, other aquatic organisms, and wildlife. The BLM would use the herbicide in accordance with label directions.

3.2.9.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not alter hazardous fuels in the Battle Mountain WUI or take any steps to reduce the potential for wildfire. Therefore, hazardous fuel accumulation would continue and fire risk would increase. Should a wildfire result, the fire could eliminate vegetation, exposing surface soils to erosion. In addition, sediments could accumulate in the runoff to nearby streams and creeks, causing temporary deterioration of water quality. Otherwise, conditions would remain the same and there would be no impacts to water quality under the No Action Alternative.

3.2.10 GRAZING MANAGEMENT

The BLM has established standards and guidelines that have been approved by the Secretary of the Interior (43 CFR 4180) for livestock grazing. The purpose of these standards is to ensure that

BLM administration of grazing helps preserve currently healthy conditions and restores healthy conditions of rangelands (BLM 2001a).

3.2.10.1 AFFECTED ENVIRONMENT

Within the project area, there are two BLM livestock grazing allotments: the Argenta Allotment and the Copper Canyon Allotment (Figure 3-2).

Argenta Allotment

Within this allotment, there are 141,678 acres of public land and 189,842 acres of private lands, totaling 331,520 acres. The allotment has 18,025 AUMs on public land. The Shoshone-Eureka RMP Final EIS and Record of Decision, as amended (BLM 1984, BLM 1986a), designates the Argenta Allotment as an "Improve" (I) status allotment.

There are areas within the allotment that are susceptible to wildfire due to the domination of cheatgrass in certain areas.

Livestock use in the Argenta Allotment is managed through multiple grazing permits, held by the following: Elko Land and Livestock Company, Chiara, Ellison Ranching Company, Julian Tomera Ranches, Inc., Rand Properties, LLC, Henry Filippini, Jr., and Cortez Joint Venture. These permits and applications establish terms and conditions regarding livestock numbers, duration of use, and timing of livestock. Livestock use is measured through Animal Unit Months (AUMs). According to 43 CFR 4100, an AUM means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month. Within the Argenta Allotment, AUMs are permitted for cattle, sheep, and horse grazing.

Copper Canyon Allotment

Within this allotment, there are 60,948 acres of public land and 45,482 acres of private lands, totaling 106,430 acres. This allotment is designated as an "Improve" (I) status allotment. The allotment has 8,771 AUMs, 5,023 AUMs on public land and 3,748 AUMs on private land. Livestock use is managed by the following permittees: Gary Snow Livestock & Grain, Chiara Ranch, Ellison Ranching Co., and Badger Ranch. The livestock used on this allotment include sheep and cattle.

3.2.10.2 ENVIRONMENTAL CONSEQUENCES

3.2.10.2.1 PROPOSED ACTION

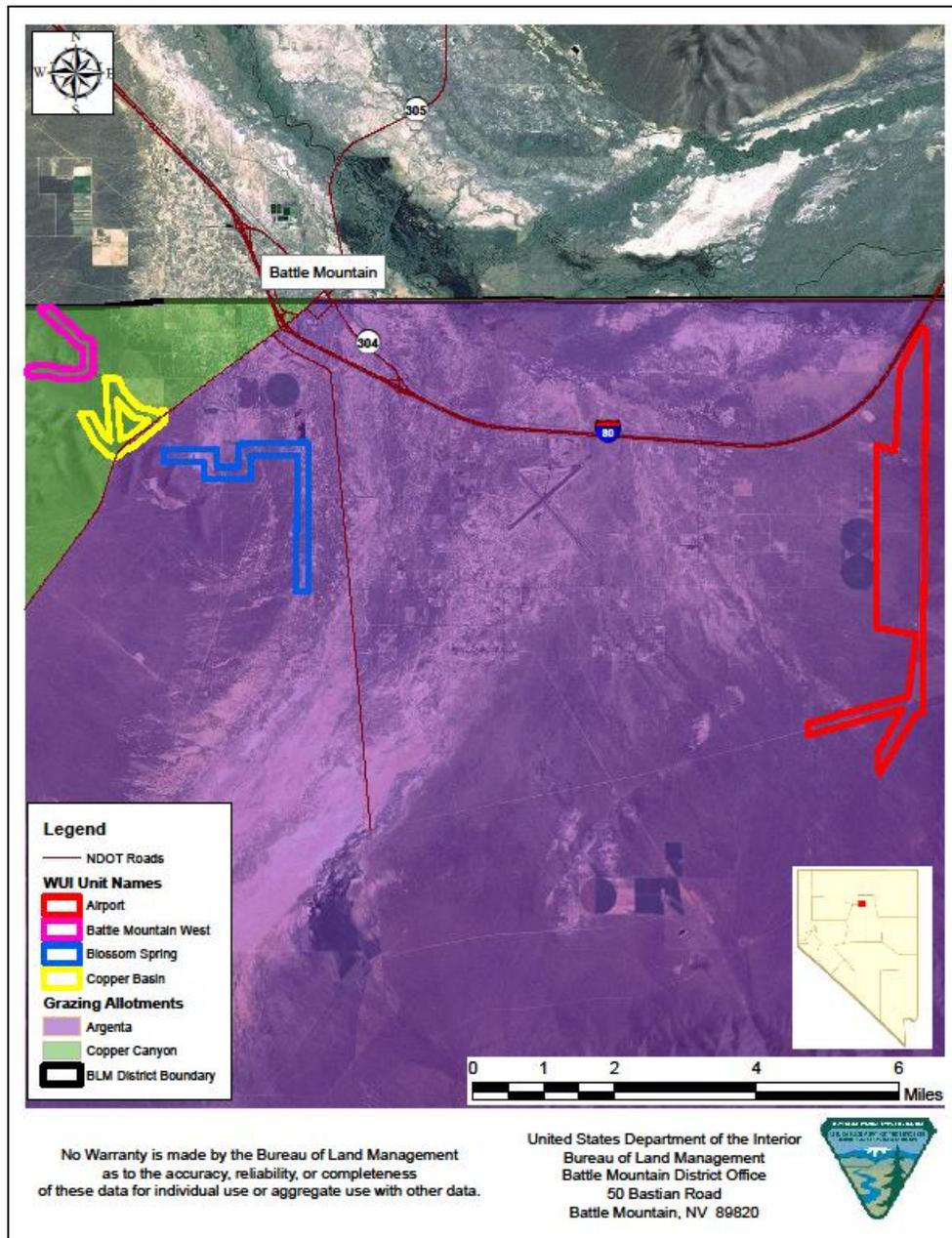
The Proposed Action would result in an increase in native perennial grasses and forbs, as compared to the No Action Alternative. This would positively affect the forage supply for livestock on the Argenta and Copper Canyon Allotments in the long term.

According to the Proposed Action, the BLM would rest any seeded areas from grazing and would fence these areas if needed to facilitate rest. Up to 498 acres of the Blossom Spring Unit and up to 1,830 acres of the Airport Unit would undergo prescribed grazing and may require temporary fencing. The BLM Authorized Officer would determine if resting were needed, based on site conditions. In addition, post-feeding may be necessary based on site conditions.

Excluding livestock from the allotments for one to three years following the proposed treatments would result in a short-term, negative impact to the grazing allotments' leases. The permittees would need to find another source of forage for their livestock during these periods. The Argenta Allotment currently has 18,025 AUMs associated with 141,689 acres of BLM land. This results in 8 acres per AUM. The impact of resting grazed areas can be quantified by multiplying 8 acres per AUM by the number of acres to be rested. Therefore, under the Proposed Action, the maximum AUM loss (if the entire Blossom Spring and Airport units are rested at the same time) would be 291 AUMs.

Long-term impacts would be beneficial to the grazing permittees with treated areas providing enhanced forage production. This would be accomplished by:

- The removal of hazardous fuels, which would allow for an increase of herbaceous plants;
- Using a preferred seed mix that includes appropriate grass and forb species;
- Rehabilitating cheatgrass (which is of poor forage quality) infested areas which have poor forage quality with desired plants of higher forage quality; and
- Maintaining previous range improvement seedings to regain production levels.



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 3-2
Grazing Allotments within the Project Area

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Ground-disturbing activities associated with fuels treatment operations may result in damage to rangeland improvements, such as fences, gates, or stock tanks. This could result in openings in fences or gates, which may result in livestock being able to move into or from areas where restrictions or pasture rotations are scheduled. Therefore, unauthorized use could occur including increased use or overuse in areas having prior functional rangeland health concerns. However, if the BLM implemented project design features (PDFs) properly, there would be little to no impact on livestock grazing due to ground-disturbing activities. In addition, the BLM would be responsible to fix any damages done to range improvements in a timely manner. If any livestock leakages occur during the proposed projects, the BLM would notify the permittees immediately and would give them five days to gather livestock.

3.2.10.2.2 NO ACTION ALTERNATIVE

The likely result of the No Action Alternative would be an increase in weedy annual grasses and forbs. This would negatively affect the forage supply for livestock on the Argenta and Copper Canyon grazing allotments.

3.2.11 LAND USE AUTHORIZATION

NEPA requires the consideration of local plans and policies in the assessment of the social and environmental effects of proposals involving federal lands. Federal, state, and local plans and guidelines that apply to land use authorizations and access within the project area include the following: Shoshone-Eureka RMP and the 2010 Lander County Master Plan.

3.2.11.1 AFFECTED ENVIRONMENT

According to the Lander County Master Plan (2010), almost 93 percent of the land in the county is public land managed by the BLM. The BLM primarily uses this land for livestock grazing, mining, geothermal energy production, and outdoor recreation. The single greatest land use within the county is open space agriculture comprised of a series of grazing allotments. Also interspersed throughout the county are 24 mining districts. Active mining operations can be found primarily in the northern portion of Lander County, near Battle Mountain.

Over the last 10 to 15 years, a relatively large number of new parcels have been created or developed to the south of Battle Mountain. Higher density residential and commercial development is now extending into areas south of Interstate 80.

3.2.11.2 ENVIRONMENTAL CONSEQUENCES

3.2.11.2.1 PROPOSED ACTION

Implementation of the Proposed Action would result in the temporary disturbance of approximately 2,839 acres of BLM land. However, this alternative would not result in any impacts or changes to land ownership within the project area. Plans and regulations currently in place to guide development in Lander County include the Shoshone-Eureka RMP and the 2010 Lander County Master Plan. The Proposed Action would not conflict with any federal land use plans or regulations.

3.2.11.2.2 NO ACTION ALTERNATIVE

There would be no impacts to land use in the project area under the No Action Alternative.

3.2.12 RECREATION

3.2.12.1 AFFECTED ENVIRONMENT

The Copper Basin Mountain Bike Trail is the only BLM recreation site within the treatment boundaries. The trail is located west of Highway 305 about 2.75 miles south of the town of Battle Mountain and Interstate 80. This trail offers a combination of single and double track trails. It winds through historic mining areas, sagebrush covered canyons, and rocky ridge tops in the northern Battle Mountain Range. This recreational area would not be closed during any of the proposed treatments.

3.2.12.2 ENVIRONMENTAL CONSEQUENCES

3.2.12.2.1 PROPOSED ACTION

The impact of fuel reduction treatments in the Battle Mountain WUI is anticipated to be very small in scale. Therefore, the potential impacts from implementation of the Proposed Action on recreation are expected to be localized, temporary, and minor. Fuel reduction activities would benefit recreation by promoting public safety and reestablishing ecosystem health. In addition, treatments would reduce the potential for catastrophic wildfire and decrease the resulting loss of recreational opportunities due to wildfire.

Under the Proposed Action, noxious weeds and non-native invasive species would be removed and prevented from further spread. This would prevent species that might otherwise out-compete native plant communities from becoming established in the project area. As a result, the aesthetic integrity and recreational value of native plant communities would increase.

3.2.12.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing recreational resources located in, or near, the proposed project would remain as they currently exist. Therefore, there would be no adverse impacts to recreation under the No Action Alternative.

3.2.13 SOCIOECONOMIC VALUES

3.2.13.1 AFFECTED ENVIRONMENT

Population

The project area is located in Lander County, near the town of Battle Mountain. In 2011, Battle Mountain had an estimated total population of 3,667 people and Lander County had an estimated total population of 5,651 people. Battle Mountain is the primary population center for Lander County and is the county seat.

In 2010, the population density in Lander County was 1.1 persons per square mile. Overall, the population density of Lander County was significantly less than the Nevada state average (24.6 persons per square mile). Similarly, in 2000, population density was 1.1 persons per square mile in Lander County, which was significantly less than the Nevada state average (18.2 persons per square mile) (Table I-1, Appendix I).

Immigration plays a significant role in the demographics of the project area. Battle Mountain and Lander County have large populations (53.5 percent and 58.4 percent, respectively) that were born in another state (Table I-2, Appendix I).

Income Distribution

Overall, median household income increased for Battle Mountain and Lander County between 2000 and 2010. Battle Mountain had a median household income of \$65,318, whereas Lander County had a median household income of \$66,525 in 2010 (Table I-3, Appendix I). Nevada had a significantly lower median household income (\$51,001) than Battle Mountain or Lander County in the year 2010.

The income distribution of Battle Mountain and Lander County can be better understood when compared to the income distribution of the state of Nevada. The 2010 Census indicated that the state of Nevada had a higher per capita income (\$25,284) than Battle Mountain (\$22,596) and a nearly equivalent per capita income to Lander County (\$25,287).

Employment of Residents

Employment can be viewed as a key economic indicator, as economic cycles and local economic activity largely drive patterns of growth and decline in a region's employment. Table I-4, Appendix I shows the employment patterns for the project area.

The *2011 Socioeconomic Baseline Assessment Report, Battle Mountain District* provides additional socioeconomic data for the BMD.

3.2.13.2 ENVIRONMENTAL CONSEQUENCES

3.2.13.2.1 PROPOSED ACTION

Under the Proposed Action, BLM staff or contractors would conduct hazardous fuels treatment activities, which would result in economic opportunity by providing employment to complete vegetation management activities. However, this would not affect the local population or create a demand for public or private services. Therefore, impacts to social and economic values would be minimal.

The project area would also experience long-term, negligible economic effects under implementation of the Proposed Action. Reduction in fuel loading within the Battle Mountain WUI would help protect infrastructure from the adverse economic effects caused by wildfire. This added protection would provide negligible, localized, beneficial effects.

3.2.13.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, economic conditions would reasonably be expected to continue at the baseline level. There would be no short-term economic consequences because of continuing current management. However, long-term effects would include continued potential for wildfire in the treatment units.

In the event of a wildfire, economic losses would be both direct and indirect. Direct economic losses are those related to property and asset damage caused by the fire. Tourism and activities related to visitation near the project area could be affected during the fire, if access is restricted or if smoke obscures views or makes visitors uncomfortable.

Indirectly, fire suppression costs would be higher under the No Action Alternative because the BLM would not reduce fuel loads. Therefore, this alternative would cause the potential for increased fire suppression costs because of higher severity fires and limited safe access to areas.

Failure to effectively control noxious weeds and non-native invasive species, particularly cheatgrass, might result in a long-term detrimental economic impact. Failure to take appropriate action at this time could result in an accelerated invasion of these species, which might result in the need for more expensive control measures in the future.

3.2.14 SOILS

3.2.14.1 AFFECTED ENVIRONMENT

The Natural Resource Conservation Service (NRCS) mapped soils within the project area (Figure 3-3). According to this figure, the dominant soil types within the project area include Argenta, Batan, Blacka, Blacka-Broyles, Broyles, Bubus, Bubus-Playas, Creemon, Havington-Burruta association, Old Camp-Rock outcrop-Colbar association, Paranat, Raglan, Ricert-Whirlo-Pineval association, Rosney, Sonoma, Teman, Tenabo, Wendane, Whirlo-Oxcorel association, Whirlo-Tenabo association, Wholan, Wiskan-Linrose association, and Yipor soil map units. Table 3-10 lists the soil units that are present within the proposed treatment units.

**Table 3-10
Soil Map Units within the Project Area**

Map Unit Symbol	Soil Series Name	Slope	Soil Texture	Treatment Units
150	Argenta	-	Very fine sandy loam	Blossom Spring
161	Batan	-	Silt loam	Blossom Spring
211	Blacka	0-2%	Very fine sandy loam	Copper Basin
213	Blacka-Broyles	2-4%	Very fine sandy loam, saline	Blossom Spring
230	Broyles	0-2%	Very fine sandy loam	Copper Basin, Blossom Spring
231	Broyles	2-4%	Very fine sandy loam	BM West, Copper Basin, Blossom Spring
233	Broyles	0-2%	Very fine sandy loam, moderately saline	Copper Basin
240	Bubus	-	Very fine sandy loam	Blossom Spring
242	Bubus	-	Very fine sandy loam, gravelly substratum	Blossom Spring
243	Bubus-Playas	-	-	Blossom Spring
290	Creemon	0-2%	Silt loam	Airport
291	Creemon	2-4%	Silt loam	Airport
486	Havington-Burruta	-	-	BM West
711	Paranat	-	Silty clay loam	Blossom Spring
731	Yipor	-	Silt loam, moderately	Airport

Map Unit Symbol	Soil Series Name	Slope	Soil Texture	Treatment Units
			saline-sodic	
800	Raglan	-	Silt loam, gravelly substratum	Blossom Spring
891	Rosney	-	Cemented substratum	Blossom Spring
892	Rosney	-	Silt loam	Airport
995	Sonoma	-	Silty clay loam, strongly saline, occasionally flooded	Blossom Spring
1031	Temam	-	Silt loam	Airport
1042	Tenabo	2-8%	Very gravelly loam	Airport
1140	Wendane	-	Silt loam, frequently flooded	Blossom Spring
1168	Whirlo-Oxcorel	-	-	BM West, Copper Basin, Blossom Spring
1170	Wholan	-	Silt loam	Airport
1216	Wiskan-Linrose	-	-	BM West
1281	Ricert-Whirlo-Pineval	-	-	Airport
2802	Old Camp-Rock outcrop-Colbar	Steep	-	Copper Basin
BPB	Broyles	2-8%	Silt loam	Airport
Ru	Rosney	-	Silt loam	Airport
WH	Whirlo-Tenabo	-	-	Airport

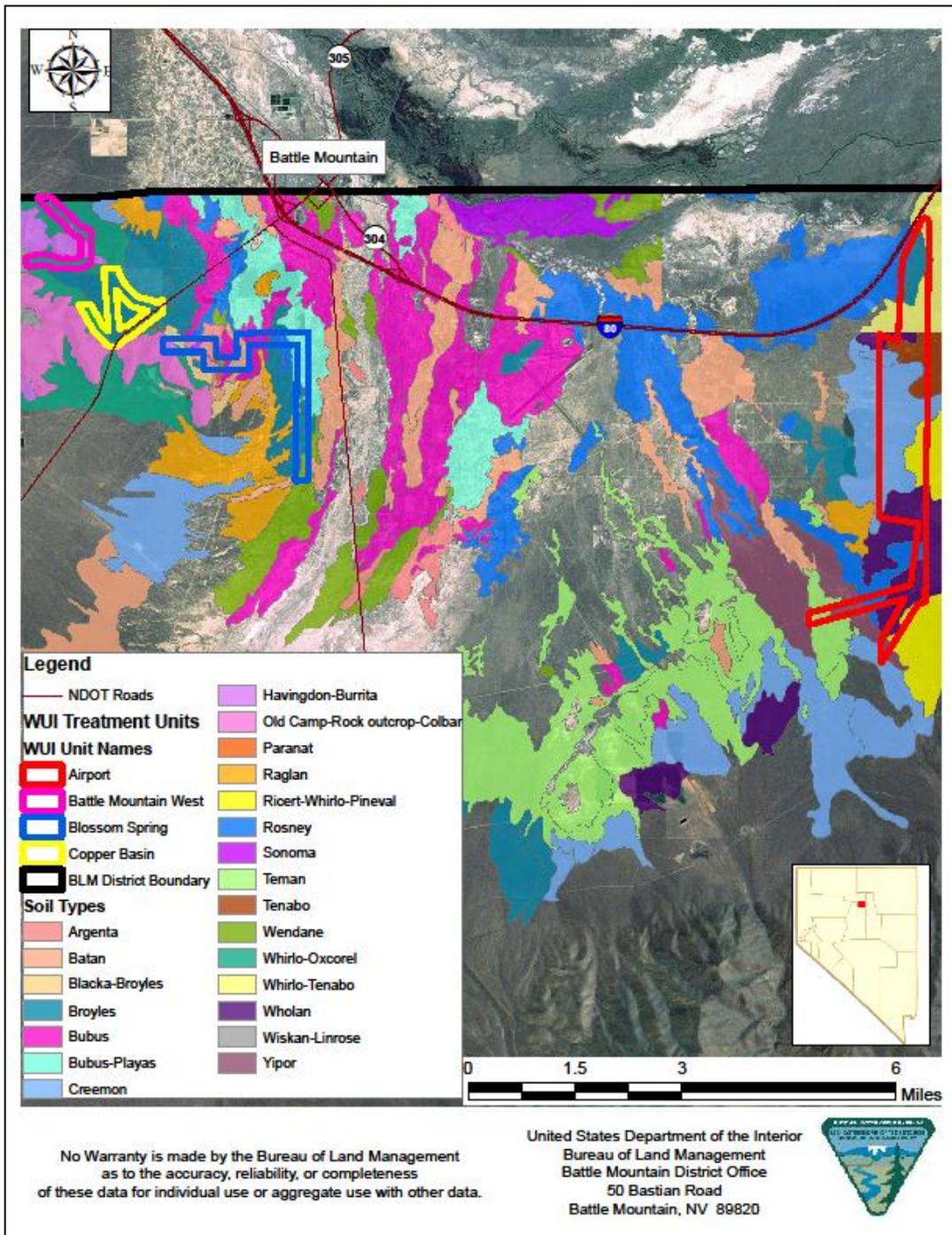
Source: U.S. Department of Agriculture [USDA], NRCS, Soil Survey of Lander County, Nevada, North Part (Volume I), 1992

Argenta Series

The Argenta series consists of very deep, somewhat poorly drained soils that formed in volcanic ash and alluvium derived from mixed rocks. Argenta soils are on inset fans, basin floor remnants, lake plains, alluvial plains, alluvial flats, and stream terraces.

Batan Series

The Batan series consists of very deep, moderately well-drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Batan soils are on stream terraces, floodplains, and alluvial flat remnants.



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 3-3
Dominant Soil Types within the Project Area

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Blacka Series

The Blacka series consists of moderately deep, well-drained soils that formed in loess over alluvium from mixed rock sources. The Blacka soils are on fan piedmont remnants.

Broyles Series

The Broyles series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks with a thin surficial mantle of loess and volcanic ash. Broyles soils are on fan remnants, fan skirts, fan aprons, inset fans, beach plains, and alluvial fans.

Bubus Series

The Bubus series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks of mostly volcanic origin that are high in pyroclastic materials. Bubus soils are on alluvial flat remnants, alluvial flats, inset fans, fan skirts, alluvial plain terraces, stream terraces, and basin floor remnants.

Burrita Series

The Burrita series consists of shallow, well-drained soils that formed in residuum and colluvium derived from interbedded chert, quartzite, sandstone, shale, and volcanic rocks. The Burrita soils are on plateaus, mountains, and hill crests, as well as on summit shoulders and side slopes.

Colbar Series

The Colbar series consists of moderately deep, well-drained soils that formed in residuum and colluvium derived from rhyolitic and andesitic rocks. Colbar soils are on mountains and hills.

Creemon Series

The Creemon series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks with a component of volcanic ash and loess. Creemon soils are on fan skirts, stream terraces, inset fans, beach terraces, and fan aprons.

Havingdon Series

The Havingdon series consists of moderately deep, well-drained soils that formed in residuum derived from chert and shale with some influence from loess and volcanic ash. Havingdon soils are on mountain and foothill side slopes and shoulders.

Linrose Series

The Linrose series consists of moderately deep, well-drained soils that formed in residuum and colluvium derived from shale, chert, and quartzite. Linrose soils are on mountains.

Old Camp Series

The Old Camp series consists of shallow, well-drained soils that formed in residuum and colluvium derived from volcanic rocks. Old Camp soils are on hills, mountains, and plateaus.

Oxcorel Series

The Oxcorel series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks with surficial deposits of loess. Oxcorel soils are on fan remnants and plateaus.

Paranat Series

The Paranat series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rocks. Paranat soils are on axial stream floodplains, alluvial flats, and stream terraces.

Pineval Series

The Pineval series consists of very deep, well-drained soils that formed in alluvium derived from volcanic or mixed rocks. Pineval soils are on fan remnants and fan aprons.

Raglan Series

The Raglan series consists of very deep, well-drained soils that formed in alluvium and lacustrine deposits derived from mixed rocks with a component of loess and volcanic ash. Raglan soils are on fan skirts, alluvial fan remnants, basin floor remnants, and lake plain terraces.

Ricert Series

The Ricert series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Ricert soils are on fan remnants.

Rosney Series

The Rosney soils consist of very deep, well-drained soils that formed in loess capped silty alluvium or lacustrine materials derived from mixed rock sources with some influence of volcanic ash. The Rosney soils are on alluvial flat remnants and fan skirt foot slopes.

Sonoma Series

The Sonoma series consists of very deep, poorly drained soils that formed in alluvium derived from mixed rocks with a component of volcanic ash. Sonoma soils are on low stream terraces, floodplains, lake plains, and alluvial flats.

Teman Series

The Teman series consists of very deep, moderately well-drained soils that formed in alluvium derived from mixed rocks mostly of volcanic origin that are high in pyroclastic materials. The Teman soils are on inset fans and fan skirts.

Tenabo Series

The Tenabo series consists of shallow to a duripan, well-drained soils that are formed in a thin loess mantle high in volcanic ash over alluvium derived from mixed rocks. Tenabo soils are on fan piedmonts and plateaus.

Wendane Series

The Wendane series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Wendane soils are on alluvial flats, stream terraces, and floodplains.

Whirlo Series

The Whirlo series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks with a component of loess. Whirlo soils are on inset fans, fan aprons, fan collars, and fan skirts.

Wholan Series

The Wholan series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks, loess, and volcanic ash. Wholan soils are on inset fans, fan skirts, fan remnants, and lake plains.

Wiskan Series

The Wiskan series consist of moderately deep, well-drained soils that formed in a thin loess layer over residuum and colluvium derived from chert, argillite, and other mixed rocks. Wiskan soils are on mountain crests, shoulders, and side slopes.

Yipor Series

The Yipor series consists of very deep, well-drained soils that formed in alluvium derived from mixed rocks with admixture of loess. These soils are on inset fans, fan skirts, and lake plain terraces.

3.2.14.2 ENVIRONMENTAL CONSEQUENCES

3.2.14.2.1 PROPOSED ACTION

The Proposed Action would result in surface disturbance up to approximately 2,839 acres near the community of Battle Mountain. This alternative would result in the removal of vegetation and compaction of soils, which would increase the erosion potential in treated areas since vegetation acts to stabilize soils. In addition, the removal of vegetation would decrease the ability of water to infiltrate and promote more rapid runoff. However, these impacts would be temporary because it is highly likely that surrounding vegetation would recolonize treated areas. If not, the BLM would implement seeding treatments. Table 3-11 provides the dimensions and ecological systems of each treatment area.

Table 3-11
Dimension and Ecological Systems of the Proposed Treatment Areas

Treatment Area	Size / Dimension	Ecological Systems	Treatment Type
Battle Mountain West	193 acres	Great Basin Xeric Mixed Sagebrush Shrubland Intermountain Basins Big Sagebrush Shrubland Intermountain Basins Salt Desert Scrub Invasive Annual Grassland	Mechanical, Chemical
Copper Basin	309 acres	Great Basin Xeric Mixed Sagebrush Shrubland Intermountain Basins Big Sagebrush Shrubland Intermountain Basins Greasewood Flat Intermountain Basins Salt Desert Scrub Invasive Annual Grassland	Mechanical, Chemical
Blossom Spring	498 acres	Great Basin Xeric Mixed Sagebrush Shrubland Intermountain Basins Big Sagebrush Shrubland Intermountain Basins Greasewood Flat Intermountain Basins Playa	Mechanical, Chemical, Biological

Treatment Area	Size / Dimension	Ecological Systems	Treatment Type
		Intermountain Basins Salt Desert Scrub	
Airport Unit	1,839 acres	Intermountain Basins Big Sagebrush Shrubland Intermountain Basins Big Sagebrush Steppe Intermountain Basins Cliff & Canyon Intermountain Basins Greasewood Flat Invasive Annual & Biennial Forbland Invasive Annual Grassland Invasive Perennial Grassland	Mechanical, Chemical, Biological

Source: Nevada Natural Heritage Program, 2008

Under the Proposed Action, the BLM would remove cheatgrass via mowing, herbicide treatments, and grazing. Cheatgrass appears to change soil physical characteristics and alter the cycling of carbon and nitrogen, which are negative impacts. Therefore, any action that reduces cheatgrass establishment and favors establishment of desirable perennial plant cover would have a positive impact on soils and soil formation.

The BLM would remove hazardous fuels under this alternative in the Battle Mountain WUI. Hazardous fuels treatments would better prevent, control, and manage wildfires in the project area. This would result in a positive benefit to soils because large, severe wildfires could have short and long-term, detrimental effects on soil properties.

Mowing/Mastication

Mowing does not always kill (and may even spread) some noxious weeds and non-native invasive species that can sprout from rhizomes. However, impacts would be minimized through the implementation of design features outlined in Section 2.1.1 requiring the BLM to implement other control methods in combination with mowing.

Mowing of shrubs and noxious weeds and non-native invasive species would cause minor impacts to soils and would have a minor impact on native species growing amongst the exotics by cutting them. Mowing to reduce fuel loads may result in localized soil compaction, but soil erosion rates are not expected to increase because the BLM would not completely remove the vegetative cover.

Prescribed Grazing

The BLM would rest any seeded areas from overgrazing. This would allow soils to redevelop physical soil crusts and vegetation cover, which would improve water infiltration and stability.

Chemical Application

Plateau® has limited mobility in soil due to soil binding, with binding increasing with time. Plateau® does not volatilize from the soil surface and the ability of this herbicide to decompose on the soil surface due to sunlight is negligible. Therefore, the major route of Plateau® loss from soil is through microbial degradation.

In the long-term, chemical treatment would interrupt the grass-fire cycle, which would allow native plant communities to regenerate. This would reduce the frequency of fire-associated soil loss because vegetation dominated by native species has lower fire frequency, intensity, and fire size when compared to vegetation communities with cheatgrass as a major component. Therefore, maintaining the natural fire regime would result in a moderate improvement in long-term soil productivity and fertility, when compared to the No Action Alternative.

Seeding

Seeding treatments could have short-term impacts to the remaining vegetation and to the soil surface by increasing the rate of wind erosion in sandy soils or sealing the soil surface in clay soils. However, broadcast seeding would have less short-term soil impacts than other mechanical methods used to prepare soils for seeding. Site and seedbed preparation methods that expose the soil surface would have the highest short-term impacts.

Despite a variety of potential soil impacts from seeding treatments, the long-term benefits from re-establishing perennial vegetation would outweigh the short-term disturbances because re-vegetation would provide long-term soil and water quality protection.

Controlling annual grasses and establishing native or desirable non-native vegetation would result in more natural fire cycles, with fires burning at lower intensities. Therefore, potential wildfires would be less damaging to the soil and would produce less erosion in the long-term following implementation of the Proposed Action.

3.2.14.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no expected change to soil resources in the Battle Mountain WUI in the short-term. However, this alternative would not improve the condition of the area, which would increase the probability of a wildfire. In the event of a wildfire, high temperatures and fire suppression activities would affect soils. Severe fire temperatures may kill mychorrhizae and microbes responsible for nutrient cycling. In addition, wildfires could alter soil hydrology by increasing infiltration or forming hydrophobic soils. These alterations could lead to increased erosion. The direct effects of wildfires on soils are

generally short-term, minor to moderate, and localized. However, the indirect effects of accelerated erosion and increased sedimentation may persist for several years.

Firefighting activities could have negligible to minor, direct, short-term effects on soils. Firefighting could use heavy equipment, which would increase soil compaction. Therefore, to assure recovery of soils, mitigation and rehabilitation actions following firefighting activities would be necessary.

3.2.15 SPECIAL STATUS SPECIES

In addition to federally listed species, the BLM protects special status species by policy. BLM Manual 6840 provides policy and direction for the conservation of special status species of plants and animals, and the ecosystems upon which they depend.

Special status species are:

- Those plants or animals that are federally listed as endangered, threatened, candidate, or proposed for listing by the ESA; and
- Species designated by each state's BLM Director as sensitive and requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA (BLM 2011a).

3.2.15.1 AFFECTED ENVIRONMENT

The Nevada Natural Heritage Program provided a data response letter regarding the endangered, threatened, candidate, and/or at risk plant and animal taxa recorded within or near (within a five kilometer radius) the project area (Appendix J). According to the Nevada Natural Heritage Program, the following species have been recorded near the project area: winged milkvetch (*Astragalus pterocarpus*), Beatley buckwheat (*Eriogonum beatleyae*), Tiehm beardtongue (*Penstemon tiehmii*), Sadas pyrg (*Pyrgulopsis sadai*), and pygmy rabbit (*Brachylagus idahoensis*). In addition, habitat may also be available for the Nevada viceroy (*Limenitis archippus lahontani*), a taxon determined to be critically imperiled by the Nevada Natural Heritage Program, and windloving buckwheat (*Eriogonum anemophilum*), a Nevada BLM sensitive species.

Animal Species

Special status species that are known or have the potential to occur in the project area include the dark kangaroo mouse (*Microdipodops megacephalus*), pale kangaroo mouse (*Microdipodops pallidus*), and a number of bats, raptors, and migratory bird species. In addition, the greater

sage-grouse and pygmy rabbit are known to occur to the east and west of the project area in the Shoshone Mountains (approximately 1.3 miles to the east of the project boundary) and Battle Mountains (approximately 1.7 miles to the west of the project boundary), respectively. However, the vegetative composition within the proposed treatment areas does not provide suitable habitat for these two species.

According to the Nevada Natural Heritage Program, the Sadas pyrg and pygmy rabbit are also recorded near (within a five kilometer radius) the project area. However, these species are not found within the proposed treatment units.

Appendix K includes a detailed list of special status species that are likely to occur in the BMD.

Table 3-12 provides each of the above-listed species' habitat requirements, as well as their potential to occur within the project area.

**Table 3-12
Habitat Requirements of the Special Status Species within the Project Area**

Special Status Species	Species' Habitat Types within Project Area	Treatment Units with Habitat	Treatment Proposed
Dark Kangaroo Mouse	Desert Playas and Ephemeral Pools	Blossom Spring	M, C, B
	Grasslands and Meadows	Battle Mountain West, Copper Basin, Airport	M, C, B
	Intermountain Cold Desert Shrub	All units	M, C, B
	Sagebrush	All units ¹¹	M, C, B
Greater Sage-Grouse	Grasslands and Meadows	None	N/A
	Sagebrush	None	N/A
Lahontan Cutthroat Trout	None	None	N/A
Pale Kangaroo Mouse	Grasslands and Meadows	Battle Mountain West, Copper Basin, Airport	M, C, B
	Intermountain Cold Desert Shrub	All units	M, C, B
	Sagebrush	All units ¹²	M, C, B
Pygmy Rabbit	Sagebrush	None	N/A

Source: NDOW 2012

M = Mechanical; C = Chemical; B = Biological

¹¹ Although big sagebrush has the potential to be present in all treatment units, it is more likely that the treatment units are dominated by salt desert shrub communities (i.e. bud sagebrush and shadscale) or cheatgrass.

Dark Kangaroo Mouse—The dark kangaroo mouse has blackish to grayish hair above, with the hair being gray or lead-colored at the base. Its total length is about 5.75 to 7 inches long, with the tail being up to 4 inches long. This species is found in loose sand and gravel in shadscale scrub, sagebrush scrub, and alkali sink plant communities. Seeds are its primary food source, but it will also eat some insects. It is unknown if this species hibernates, but when inactive, they are underground. Activity has only been observed from March to October. This species is nocturnal with peak activity occurring in the first two hours after sunset (Linzey, A.V. & NatureServe 2008).

Greater Sage-Grouse—The greater sage-grouse is a BLM special status species and a USFWS candidate species. It can grow up to 30 inches in length and up to 2 feet in height. Males often weigh in excess of four to five pounds, while hens weigh between two to three pounds (USFWS 2013). Identified threats to greater sage-grouse include habitat conversion and fragmentation from improper grazing practices, wildfire, invasive plants, energy, and infrastructure development, and urbanization (BLM 2010).

The greater sage-grouse is found at elevations ranging from 4,000 to over 9,000 feet. This species feeds on leafy vegetation, insects, and the seeds of forbs, shrubs, and grasses. This bird is completely reliant on sagebrush and cannot occur in areas without it (USFWS 2013). Figure 3-4 shows the preliminary priority habitat (PPH) and preliminary general habitat (PGH) around the project area. The project area does not provide suitable habitat for greater sage-grouse (Blomber, E.J., et. al 2012).

Lekking Habitat—The most critical habitats for greater sage-grouse are breeding habitats, which include strutting grounds, nest sites, and upland meadows that provide succulent forage from mid-summer to early fall. The majority of nests are located under sagebrush. However, other shrubs such as bitterbrush (*Purshia spp.*) and rabbitbrush are occasionally used (BLM 2012d).

During March and April, males gather on traditional “strutting grounds” (leks) and put on courtship performances. Females visit these grounds during the first part of April and usually mate with only a few dominant males. Sites chosen as leks are usually openings with an abundance of sagebrush within 300 to 650 feet for escape cover. These lek sites usually occur in broad valleys, ridges, benches and plateaus, or mesas (BLM 2010). There are no known leks within a three-mile radius of the project area.

Nesting Habitat— Within one to two weeks after mating, greater sage-grouse hens search for suitable nesting and brood-rearing sites that are usually within 0.68 to 3.85 miles of a lek. Ideal greater sage-grouse nesting and brood-rearing habitat contains taller (>20 inches) sagebrush with 15 to 25 percent canopy cover, at least 10 percent forb cover, and greater than 15 percent grass

cover. Nests are shallow depressions lined with grass or twigs and are usually located under sagebrush (BLM 2010).

Brood-Rearing Habitat—Following hatching (late May to early June), the brood may remain in the vicinity of the nest for two to seven weeks or longer, depending on the availability of succulent forbs. Preferred brood-rearing areas are located in or around upland wet meadows, stream channels, mountain brush, and low sage communities, or in floodplains where succulent forbs are available (BLM 2010).

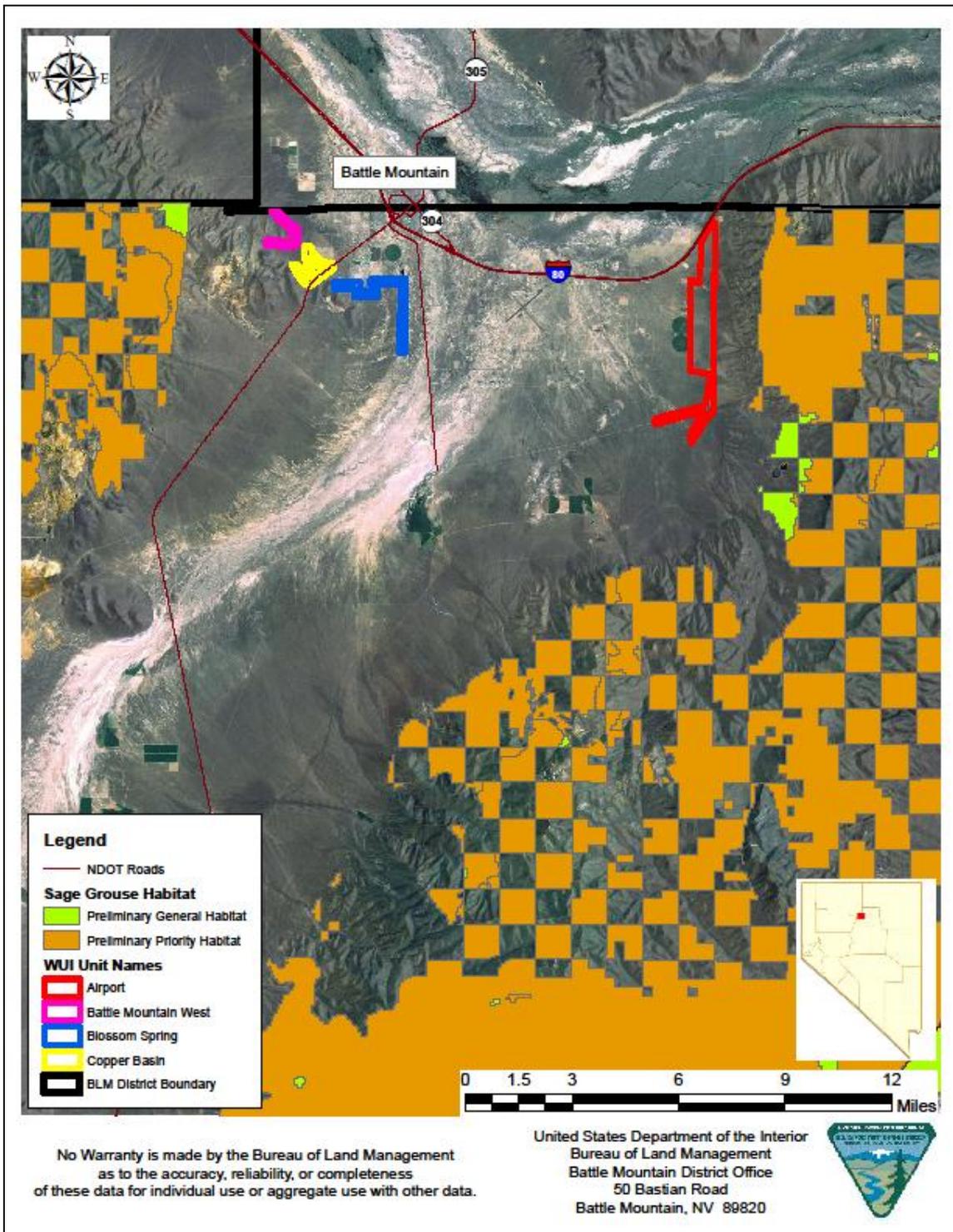
Wintering Habitat-- Snow depth determines the areas available to greater sage-grouse during the winter. In general, ideal winter habitat contains tall, vigorous sagebrush that extends above the snow and exhibits sufficient canopy coverage. During winter, sagebrush leaves are the primary food source for the greater sage-grouse (BLM 2010). There is no greater sage-grouse habitat located within the project area. However, sage-grouse habitat does exist surrounding the proposed WUI treatment units (Figure 3-4).

Pale Kangaroo Mouse—The pale kangaroo mouse is a Nevada species that is restricted to valley bottoms containing stabilized dunes with fine, windblown sand. Elevations range from 3,898 to 5,699 feet and always appear to be in the zone below that dominated by sagebrush. This species feeds on seeds of forbs, shrubs, grasses, insects, and leafy vegetation. Moderate canopy coverage of saltbush (*Atriplex spp.*)/greasewood is preferred. The breeding season is from March to September. Litter size averages four, but ranges from two to six (O'Farrell, Undated).

Pygmy Rabbit—The pygmy rabbit is a BLM special status species. This rabbit reaches a body length of 9.25 to 11.65 inches and is distinguished by its small size, short ears, gray color, small hind legs, and lack of white fur on the tail (USFWS 2012b).

Pygmy rabbits raise their young inside burrows. These burrows are typically three inches in diameter and are found in relatively deep, loose soils. Each burrow may have three or more entrances. Pygmy rabbits occasionally make use of burrows abandoned by other species and as a result may occur in areas of shallower or more compact soils that support sufficient shrub cover. Female readiness determines breeding time, which seems to be influenced by photoperiod and the condition of local food plants. Average litter size is six and there is a maximum of three litters in one breeding season (USFWS 2012b).

Pygmy rabbits are typically found in areas of tall, dense sagebrush cover, and are highly dependent on sagebrush to provide both food and shelter throughout the year. In the winter, their diet consists of up to 99 percent sagebrush (USFWS 2012b).



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 3-4
Greater Sage-Grouse Habitat near the Project Area

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The primary threat to pygmy rabbits is habitat loss and fragmentation caused by conversion of sagebrush rangeland to agriculture, development (including oil and gas production), and wildfire frequency. Common predators of the rabbit include weasels, coyote (*Canis latrans*), badger, bobcats (*Lynx rufus*), raptors, owls, ravens (*Corvus corax*), and foxes (USFWS 2012b).

Bats—Species of bat that are known to occur in the project area that are included on the Nevada BLM’s Sensitive Species List (2011) include little brown myotis (*Myotis lucifugus*), spotted bat (*Euderma maculatum*), and western small-footed myotis (*Myotis ciliolabrum*). There is a probability that a variety of these bat species could be found in the proposed project area. Table 3-13 describes the habitat requirements for these species as well as the treatment areas that contain suitable habitat.

Table 3-13
Habitat Requirements of the Special Status Bat Species within the Project Area

Bat Species	Species’ Habitat Types within Project Area	Treatment Units with Habitat	Treatment Proposed
Little Brown Myotis	Cliffs and Canyons	None—Immediately adjacent to Airport Unit	M, C, B
Spotted Bat	Cliffs and Canyons	None—Immediately adjacent to Airport Unit	M, C, B
Western Small-Footed Myotis	Cliffs and Canyons	None—Immediately adjacent to Airport Unit	M, C, B
	Sagebrush	All units ¹²	M, C, B

Source: NDOW 2012

M = Mechanical; C = Chemical; B = Biological

Little Brown Myotis—Little brown bats commonly use man-made structures for resting and maternity sites, but will also use caves, hollow trees, and rock outcrops. In Nevada, this species hibernates in mines and caves. Little brown bats feed heavily on aquatic insects such as caddis flies, midges, and mayflies, although a variety of other terrestrial insects may be eaten. Foraging occurs in open areas among vegetation, along water margins, and sometimes a few feet from the water surface (NDOW 2012).

Spotted Bat—Spotted bats are found in a wide variety of habitats from low elevation desert scrub to high elevation coniferous forests, if suitable roosting habitat exists. This species is a year-round resident of Nevada that hibernates during the winter. The bat primarily roosts in cracks, crevices, and caves associated with cliff faces but may also use caves and mines

¹² Although big sagebrush has the potential to be present in all treatment units, it is more likely that the treatment units are dominated by salt desert shrub communities (i.e. bud sagebrush and shadscale) or cheatgrass.

occasionally. In addition, this species will sometimes roost on or in buildings. Spotted bats forage primarily on moths in canyons, in the open, over riparian vegetation, over meadows along forest edges, or in open coniferous woodland. This species is capable of long-distance flight and can forage some distance away from roost sites (NDOW 2012).

Western Small-Footed Myotis—The western small-footed myotis uses crevices for roosting, including caves, mines, buildings, rock crevices, hollow trees, and exfoliating bark on trees. It is found in a wide variety of habitats including desert scrub, grasslands, sagebrush steppe, blackrush, greasewood, pinyon-juniper woodlands, pine fir forests, agriculture, and urban areas. This bat forages early in the evening on a variety of insects including small moths, flies, ants, and beetles that occur in open areas (NDOW 2012).

Migratory Birds—There are a wide variety of songbirds and migrants that spend at least a part of the year within the general project area. Birds that are dependent on salt desert shrub communities and isolated pockets of sagebrush would be found within the proposed treatment units. Section 3.2.5 provides additional information about the migratory bird species of the project area.

Raptors—The project area and surrounding areas provide habitat for a variety of raptors such as eagles, falcons, hawks, and owls. Special habitat needs for raptors include nest sites, foraging areas, and roosting or resting sites. A variety of birds, small mammals, reptiles, amphibians, and insects constitute the bulk of the prey base for raptor species. Section 3.2.5 provides additional information about the raptor species of the project area.

Plant Species

According to the Nevada Natural Heritage Program, the following plant species have the potential to occur near the project area: Beatley buckwheat, Tiehm beardtongue, windloving buckwheat, and winged milkvetch.

Beatley Buckwheat—Beatley buckwheat is an herbaceous perennial that forms highly branched mats, has broadly elliptic leaves, and yellowish to reddish-yellow flowers. It is unknown if this species occurs in Lander County and is typically recorded at elevations from 5,000 to 8,745 feet. This plant is found in dry volcanic outcrops (Nevada Natural Heritage Program, 2001). The project area does not contain the preferred habitat for this species.

Tiehm Beardtongue—Tiehm beardtongue is a perennial herb with purple flowers and mostly petiolate leaves. This species is known to occur in Lander County and has only been found near one mountain peak and in a canyon leading to the west. This herb has been found in neutral sandy-loam soil pockets on steep, southerly-facing volcanic talus and scree slopes (Nevada

Natural Heritage Program, 2001). The project area does not contain the preferred habitat for this species.

Windloving Buckwheat—Windloving buckwheat is a low perennial herb with leafless flower stalks rising about 6.5 centimeters above clumps of white-hairy leaves. The stalks of this species bear a terminal, globular cluster of white flowers. Windloving buckwheat has been recorded in Lander County and is typically found in elevations from 4,750 to 9,836 feet. It is found on high elevations on dry, exposed, relatively barren, gravelly, limestone or volcanic ridges and ridgeline knolls on outcrops or shallow rocky soils over bedrock (Nevada Natural Heritage Program, 2001). The project area does not contain the preferred habitat for this species.

Winged Milkvetch—The winged milkvetch is a perennial herb with silvery pubescent leaflets, purplish flowers, and winged pods. It has been recorded in Lander County, Nevada, in elevations from 4,000 to 4,900 feet. This herb is found in light-colored, alkaline, often seasonally moist, sandy silt or clay soils of saltgrass meadows, shrubby bottomlands, and low knolls. In addition, it is often in washes or gullies in the shadscale and lower sagebrush zones (Nevada Natural Heritage Program, 2001).

3.2.15.2 ENVIRONMENTAL CONSEQUENCES

3.2.15.2.1 PROPOSED ACTION

Typically, special status species will avoid treatment areas when operations are in progress. Thus, implementation of the various treatments under the Proposed Action should not result in any long-term impacts to special status species.

Application of Plateau® is not likely to pose a risk to special status species. Plateau® is considered to have an extremely low toxicity to wildlife, with little potential for bioaccumulation (Tu et. al 2004). Removal of cheatgrass by chemical application may improve the habitat quality for many special status species.

Animal Species

The vegetative composition of the project area does not provide ideal habitat for the greater sage-grouse and pygmy rabbit. However, both these species are known to occur near the treatment units in the Shoshone and Battle Mountains. Implementation of the Proposed Action would have no effect on these nearby areas; therefore, the proposed project would not result in any negative impacts to these species. In addition, there is no habitat available for the Lahontan cutthroat trout or Sadas pyrg in the treatment units. In addition, the project would not affect any riparian areas. Therefore, these species would not be affected by the Proposed Action.

During mowing/mastication treatments of the Proposed Action, the dark kangaroo mouse and the pale kangaroo mouse could be directly killed. However, due to the size of the treatment area in comparison with the available habitat throughout the Reese River Valley, direct mortality would not result in a significant impact to these species' population levels. On the contrary, the Proposed Action may result in the re-establishment of native vegetation and the reduction of cheatgrass, which could increase the quality and quantity of available habitat for these species in the long-term.

The bat species that have the potential to occur within the project area include the little brown myotis, spotted bat, and western small-footed myotis. Foraging habitat of these species may be affected during implementation of the Proposed Action. However, any impact to foraging habitat within the treatment units is considered minimal since the surrounding area provides similar habitat. The Proposed Action is not anticipated to result in any long-term, significant impacts to bat species since riparian and roosting areas would not be affected.

Plant Species

According to the Nevada Natural Heritage Program, the following plant species occur near the project area: Beatley buckwheat, Tiehm beardtongue, windloving buckwheat, and winged milkvetch. The project area does not provide the habitat requirements for Beatley buckwheat, Tiehm beardtongue, and windloving buckwheat. Therefore, these species would not be affected under the Proposed Action. In addition, winged milkvetch has not been recorded in the treatment units.

3.2.15.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no changes to the project area. The potential for a large wildland fire would remain high and shrub communities would continue to decline, as would native grasses and forbs that are essential for special status species.

3.2.16 VEGETATION

3.2.16.1 AFFECTED ENVIRONMENT

The following ecological sites are located within the proposed treatment units:

- R024XY002NV
- R024XY003NV
- R024XY004NV
- R024XY006NV
- R024XY007NV

- R024XY009NV
- R024XY035NV
- R024XY011NV
- R024XY047N
- R024XY012NV

Figure 3-5 shows the location of these ecological sites within the project area. Appendix L provides the ecological site descriptions for these sites. Table 3-14 provides the average annual precipitation, mean annual air temperature, average growing season, and potential native vegetation for each ecological site.

**Table 3-14
Climatic and Vegetation Factors for the Ecological Sites found within the Proposed
Treatment Units**

Ecological Site	Climatic Factors			Potential Native Vegetation
	Average Annual Precipitation	Mean Annual Air Temperature	Average Growing Season	
R024XY002NV	5-8"	45-53 °F	90-130 days	Shadscale, bud sagebrush, and Indian ricegrass
R024XY003NV	4-8"	45-53 °F	90-130 days	Shadscale and black greasewood
R024XY004NV	4-8"	45-53 °F	90-130 days	Winterfat, Indian ricegrass, bud sagebrush, and bottlebrush squirreltail
R024XY006NV	6-10"	45-53 °F	90-130 days	Basin wildrye, basin big sagebrush, and black greasewood
R024XY007NV	6-10"	45-53 °F	90-130 days	Basin wildrye and black greasewood
R024XY009NV	6-10"	45-53 °F	90-130 days	Alkali sacaton, alkali muhly
R024XY011NV	6-8"	45-53 °F	90-130 days	Black greasewood
R024XY012NV	6-8"	45-53 °F	80-130 days	Sickle saltbush, Indian ricegrass, and bottlebrush squirreltail
R024XY035NV	10-14"	43-47 °F	80-100 days	Bluebunch wheatgrass, Thurber's needlegrass, and big sagebrush
R024XY047NV	8-10"	46-50 °F	90-110 days	Thurber's needlegrass, Indian ricegrass, and Wyoming big sagebrush

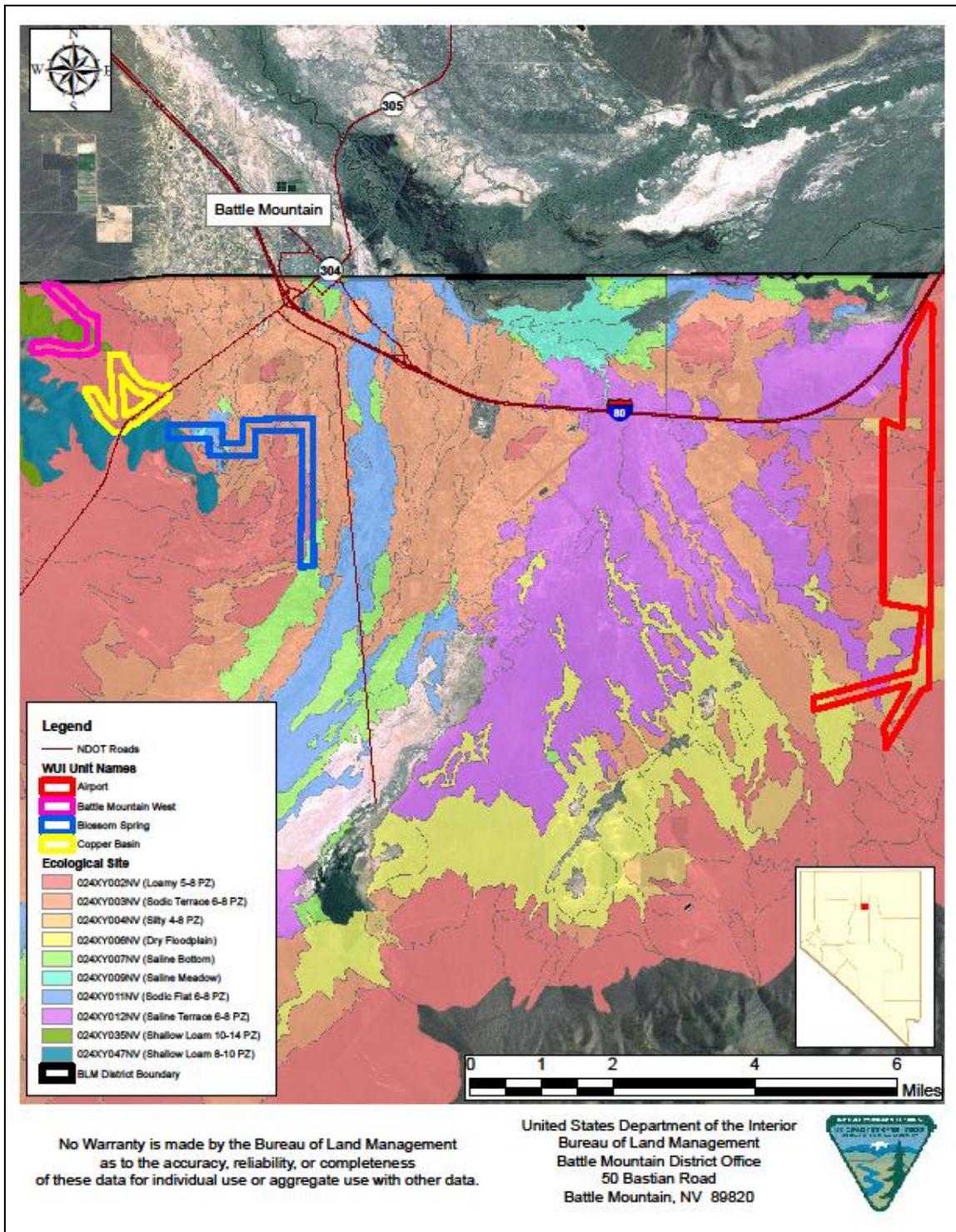
Source: USDA, 2003

Table 3-15 shows the key management areas (KMAs) of the Argenta Allotment that are near (within a five mile radius) of a proposed treatment unit.

**Table 3-15
Potential Native Vegetation and Current Vegetation of the KMAs within the Argenta Allotment that occur near (within a five mile radius) a Proposed Treatment Unit**

KMA	Ecological Site	Potential Native Vegetation	Current Vegetation	Direction and Distance to Treatment Unit
AR-1	025XY019NV	Thurber's needlegrass, bluebunch wheatgrass, and Wyoming big sagebrush	Forage kochia, Indian ricegrass, sandberg bluegrass, and rabbitbrush	3.49 miles east of the Airport Unit
AR-6	024XY002NV	Shadscale, bud sagebrush, and Indian ricegrass	Shadscale, burr buttercup, bud sagebrush, and bluegrass	0.40 miles east of Airport Unit
AR-7	024XY002NV	Shadscale, bud sagebrush, and Indian ricegrass	Shadscale, burr buttercup, bud sagebrush, and bluegrass	1.91 miles south of Airport Unit
AR-12	024XY002NV	Thurber's needlegrass, bluebunch wheatgrass, and Wyoming big sagebrush	Forage kochia, Indian ricegrass, sandberg bluegrass, and rabbitbrush	3.14 miles south of Copper Basin Unit and 3.31 miles southwest of Blossom Spring Unit
AR-21	025XY014NV	Bluebunch wheatgrass, Thurber's needlegrass, and big sagebrush	Forage kochia, Thurber's needlegrass, basin wildrye, cheatgrass, bottlebrush squirreltail, and crested wheatgrass	3.01 miles east of Airport Unit

Source: BLM 2010



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 3-5
Ecological Sites within the Project Area

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3.2.16.2 ENVIRONMENTAL CONSEQUENCES

3.2.16.2.1 PROPOSED ACTION

The Proposed Action would result in surface disturbance of up to 2,839 acres near the community of Battle Mountain. If successful, this alternative would result in beneficial impacts to native vegetation by reducing the early germination and competition of cheatgrass. The reduction of cheatgrass would allow native vegetation to utilize available soil and water resources, thus increasing its abundance, diversity, reproduction, and perseverance.

Mowing/Mastication

Impacts to vegetation would occur because of mowing/mastication treatments. Mowing would not remove 100 percent of the vegetation, but would leave vegetation growing above the ground.

The vegetation left in place would continue to grow, thus requiring additional treatment after two to four years. Therefore, the impacts to shrubs from this treatment method are short-term.

The equipment used during mowing/mastication, regardless of the specific equipment type, would produce direct effects on vegetation. The degree and extent of these effects would vary, based on equipment type, size, attachments, and resource objectives. Direct effects would include damage, reduction, and alteration by equipment operation.

The BLM would intentionally direct most of these effects at target vegetation to achieve fuels reduction or noxious weeds and non-native invasive species control. However, some unintended damage to residual or non-target vegetation could also occur. Making adjustments based on close monitoring of operations in conjunction with use of proper types of equipment for the purpose of mowing/mastication treatments could reduce damage to desirable vegetation.

When mowed, some noxious weeds and non-native invasive species still flower in a dwarfed state and can still produce seed. Therefore, timing of mowing is critical. For example, mowing before the plant flowers and sets seed can reduce the amount of viable seed, but mowing after a plant sets seed will scatter seed over a wider area.

Mowing generally does not kill (and may even spread) some noxious weeds and non-native invasive species that can sprout from rhizomes. However, mowing in combination with other control techniques, such as using Plateau® (or other similar herbicides), can be very effective.

Prescribed Grazing

Under the Proposed Action, grazing livestock would remove a portion of the annual forage production. However, the prescribed grazing proposed under this alternative would likely maintain or improve rangeland health conditions in the treatment units by providing a stocking rate that is appropriate throughout the year.

Chemical Application

Plateau® is both foliarly and soil active and offers a broad spectrum of cheatgrass control. Plateau® shows potential at very low rates (< 4 ounces per acre for post emergence) to kill cheatgrass while not harming established perennial grasses.

Application of Plateau®, or other similar herbicides, would enable greater competitive interactions of native and seeded plant species to propagate and establish by hindering noxious weeds and non-native invasive species (i.e. cheatgrass) growth development. This is a beneficial impact to the vegetation of the area.

Seeding

Under this alternative, seeding would occur, if necessary, following fuel treatments using one of the BLM-approved seed mixes discussed in Section 2.1.2. Surrounding vegetation would likely recolonize disturbances from proposed treatments. Restoring disturbed sites to natural conditions prevents soil erosion and enhances native plant communities. Maintaining healthy native plant communities in a healthy, vigorous condition can favor native plants over noxious weeds and non-native invasive species.

Seeding a native or desired plant mix within the project area would reduce the current herbaceous monoculture of cheatgrass over the long-term. This would allow for the maintenance of desired plant levels that are appropriate for the site, and provide for enhanced plant diversity and greater biotic functions, hydrologic interactions, and soil stability.

3.2.16.2.2 NO ACTION ALTERNATIVE

The No Action Alternative would not result in any surface disturbance or fuels reduction activities. This would result in an increased risk of wildfire as fuels continued to build-up, which could result in a greater loss of vegetation in the case of a wildfire. In addition, there would be no improvement of ecological diversity or ecosystem health under this alternative. Cheatgrass would continue to persist in the treatment units, limiting the abundance, diversity, reproduction, and perseverance of desired native species.

3.2.17 VISUAL RESOURCES

Scenic quality is a measure of the visual appeal of a tract of land (BLM 1986b). Section 102(a) (8) of the FLPMA states that public lands will be managed in a manner that will protect the quality of scenic values (BLM 2001b). In addition, Section 101(b) of NEPA requires that measures be taken to ensure that aesthetically pleasing surroundings be retained for all Americans.

The BLM's Visual Resource Management (VRM) system provides a way to inventory and analyze scenic values in order to determine appropriate levels of management. The BLM's Visual Resource Inventory (VRI) consists of the following three primary components: (1) Scenic Quality Evaluation, (2) Sensitivity Level Analysis, and (3) Distance Zones. Based on these factors, BLM-administered lands are placed into one of four visual resource inventory classes. Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of the least value (BLM 1986b).

3.2.17.1 *AFFECTED ENVIRONMENT*

VRM classes are assigned for all BLM-administered lands. The entire project area is located within the BLM's VRM Class IV (Figure 3-6).

Management objectives of a VRM Class IV are "to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities can dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of such activities through careful location, minimal disturbance, and repeating the basic elements of line, form, color, and texture (BLM 1986b).

3.2.17.2 *ENVIRONMENTAL CONSEQUENCES*

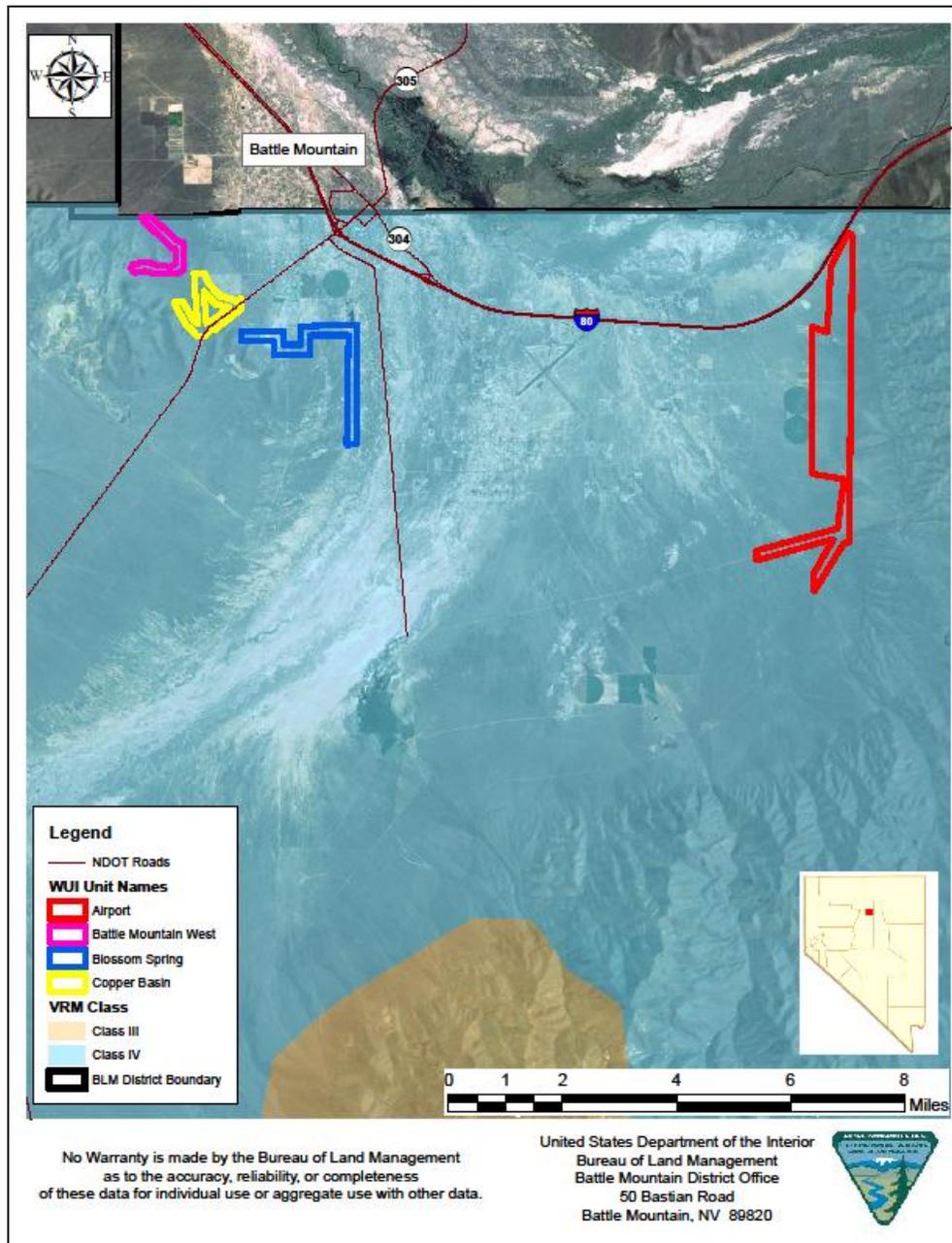
3.2.17.2.1 PROPOSED ACTION

The Proposed Action activities are consistent with the VRM Class IV objectives. Therefore, there would be no impacts to the VRM classes due to implementation of the Proposed Action.

3.2.17.2.2 NO ACTION ALTERNATIVE

Visually, the area associated with the project would remain the same under the No Action Alternative. There would be no change in the classification of VRM Class IV to the project area.

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Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 3-6
Visual Resource Classes of the Project Area

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3.2.18 WILDLIFE

The BLM and NDOW cooperatively manage wildlife and fish resources and their habitat on public lands under an MOU as established in 1971. The MOU describes the BLM's commitment to manage wildlife and fisheries resource habitat, and the NDOW's role in managing populations. The BLM meets its obligations by managing public lands to protect and enhance food, shelter, and breeding areas for wild animals. NDOW assures healthy wildlife numbers through a variety of management tools, including wildlife and fisheries stocking programs, hunting and fishing regulations, land purchases for wildlife management, cooperative enhancement projects, and other activities.

NDOW is the state agency responsible for the restoration and management of fish and wildlife resources within the state. NDOW administers state wildlife management and protection programs, as set forth in NRS Chapter 501, *Wildlife Administration and Enforcement*, and NAC Chapter 503, *Hunting, Fishing, and Trapping: Miscellaneous Protective Measures*. NRS 501.110 defines the various categories of wildlife in Nevada, including protected categories. NAC 503.010 thru 503.080, 503.110, and 503.140 list the wildlife species currently placed in the state's various legal categories, including protected species, game species, and pest species.

3.2.18.1 AFFECTED ENVIRONMENT

Big Game Species

Mule deer (*Odocoileus hemionus*) and pronghorn antelope (*Antilocapra americana*) are the big game species that reside within and around the project area. Mule deer year-round habitat occurs in the project area just to the east of the Battle Mountains, and pronghorn year-round habitat occurs throughout the treatment units.

Mule Deer—Mule deer habitat is located within the proposed WUI treatment areas, to the east of the Battle Mountains. Winter range consists of more xeric, lower elevation areas containing sagebrush, pinyon-juniper, or mountain mahogany communities. Summer range is characterized as more mesic, higher elevation areas containing sagebrush, sagebrush steppe, pinyon-juniper, mountain mahogany, or grassland vegetative communities.

Between October and November, mule deer generally migrate between the summer and winter ranges. This deer's year-round habitat consists of lowland riparian, salt desert scrub, and greasewood vegetative communities.

Pronghorn Antelope—The entire project area contains year-round habitat for the pronghorn antelope. The vegetative cover within this habitat includes salt desert shrub, greasewood, grassland, agriculture, and sagebrush steppe. The winter range of this species is located to the

east of the project area and consists primarily of sagebrush steppe. Pronghorn migration times are variable and depend on environmental conditions.

Upland Game Species

Upland game species that are known to occur, or could potentially occur, in the vicinity of the project include the chukar (*Alectoris chukar*), California quail (*Callipepla californica*), wild turkey (*Meleagris gallopavo*), greater sage-grouse, white-winged dove (*Zenaida asiatica*), gray partridge (*Perdix perdix*), mountain cottontail (*Sylvilagus nuttallii*), pygmy rabbit, and white-tailed jackrabbit (*Lepus townsendii*).

Other Species

Wildlife species known to occur in the project area that are not discussed in previous sections include a variety of mammalian, avian, and reptilian species. Mammalian species include the American badger, coyote, bobcat, kit fox (*Vulpes macrotis*), western spotted skunk (*Spilogale gracilis*), and Great Basin pocket mouse (*Perognathus parvus*).

3.2.18.2 ENVIRONMENTAL CONSEQUENCES

3.2.18.2.1 PROPOSED ACTION

Under the Proposed Action, loss of protective cover could expose smaller species to predators in the short-term. In addition, short-term loss of herbaceous plant species associated with fuel reductions in fuel loading and shrub heights would reduce nesting and foraging habitat.

During treatment operations, displacement or loss of species could occur, especially to wildlife that are sensitive to human activity and noise. However, additional habitat is located adjacent to and between the treatment units and wildlife could be expected to move into nearby similar habitat during project implementation. The impact from the displacement of species during treatment activities is considered negligible due to the small size of the proposed treatment areas and the temporal brevity of the treatments.

Mowing/Mastication

Mowing and the associated use of mechanical equipment may affect nesting birds or nests. However, by following the design features described in Section 2.1.1 in which the BLM would conduct pre-disturbance surveys and would conduct project activities outside of the bird-nesting season, the impact to nesting migratory birds would not be significant.

Mowing would result in a short-term loss of forage for mule deer and pronghorn antelope. However, due to the surrounding areas of available habitat, this impact is considered short-term and minimal. In addition, noise created by mowing could alter the habitat use of some wildlife species within and around the treatment units. However, noise would be short-term and therefore is not considered a significant impact.

Mowing/mastication treatments have the potential to directly affect small mammals in the short-term from direct mortality and reduced hiding cover. However, this impact would be short-term and would not be considered significant.

In the long-term, mowing/mastication, in combination with seeding, could improve ecological diversity, protect wildlife habitat from the effects of severe wildland fire, and improve ecosystem health.

Chemical Application

Application of Plateau® is not anticipated to affect wildlife species. Plateau® is well established in the literature as being essentially non-toxic to mammals, birds, and insects through either contact or ingestion (Tu et. al 2004; JPR 2003; WDOT Undated).

Cheatgrass and other noxious weeds and non-native invasive species are dominating rangelands in the project area, which negatively affects resident wildlife. In the short-term, chemical treatment may suppress desirable vegetation interspersed with these noxious weeds and non-native invasive species, but this intervention is the only means available to effectively hinder cheatgrass proliferation at larger scales and promote long-term restoration of habitat values derived from native and desired plants.

Seeding

Re-vegetation with desired species, in combination with noxious weeds and non-native invasive species treatments would benefit most wildlife species in the long-term by maintaining ecosystem integrity, promoting continuation of the natural fire regime, and increasing the overall quality of habitat for wildlife.

3.2.18.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, wildlife habitats would remain in their current condition and availability. However, this alternative would not allow for reduction of fuel loads in the Battle Mountain WUI. In the event of a wildfire, the heavy fuel loads would likely create fire conditions that would be more severe and suppression measures would require a greater effort than if the BLM reduced fuel loads, as in the Proposed Action. Assuming that such a fire would

eventually occur, the effects to wildlife would primarily be short-term, direct, and the impacts would range from negligible to moderate, depending on the intensity and size of the wildfire and the suppression effort.

Under the No Action Alternative, fuel loads would increase, which could result in a wildfire that could spread onto areas of quality wildlife habitat. If this were to occur, re-establishing the shrub components lost from the fire in lower precipitation zones could be very problematic. In addition, under this scenario, there would be a high potential for areas of high quality habitat to become dominated by cheatgrass. Therefore, the No Action Alternative could potentially result in long-term, minor to significant impacts to quality wildlife habitat.

4.0 CUMULATIVE IMPACTS

For the purpose of this EA, the cumulative impacts are the sum of all past and present actions, the Proposed Action, and reasonably foreseeable future actions (RFFAs).

The CEQ regulations for implementing NEPA (40 CFR 1508.7) define cumulative impacts as follows:

“...the impact on the environment which results from the 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.”

The following analysis identifies other past, present, or RFFAs that, together with the proposed project, may incrementally affect the environment, and addresses the potential cumulative impacts of these actions and the proposed project.

4.1 INTRODUCTION

Environmental consequences of the Proposed Action were evaluated previously in Chapter 3 for the various environmental resources. Discussed in the following sections are the resources that have potential to be cumulatively affected by the Proposed Action within the project area.

Figure 4-1 shows the Cumulative Effects Study Area (CESA) boundary map for the Battle Mountain WUI. This figure depicts the HUC10 watershed boundary, which encompasses the proposed project area. Any past, present, or future projects that occur within this boundary are described and analyzed in this cumulative impacts section.

Based on the preceding analysis in Chapter 3, the Proposed Action would have minimal, temporary, or no impacts to the following resources and would therefore not have cumulative impacts: air quality, environmental justice, floodplains, human health and safety, grazing management, Native American religious concerns, riparian/wetlands, land use authorization, recreation, special status species, and visual resources. These resources are not discussed further in the cumulative impacts section.

4.2 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

Past actions have been associated primarily with mining, minerals, oil and gas exploration, livestock grazing, agriculture, dispersed recreation, and wildland fires.

The RFFAs within the project area include any treatments that may occur on private land or on adjacent BLM districts, such as the Winnemucca District. However, there are no formal project plans developed at this time (BLM, Joshua Tibbetts, BMD, Prescribed Fire and Fuels Specialist, 1/2/2012).

All future projects proposed within the project area would be analyzed in separate site-specific environmental analyses.

4.3 CUMULATIVE IMPACTS

4.3.1 PROPOSED ACTION

Migratory Birds

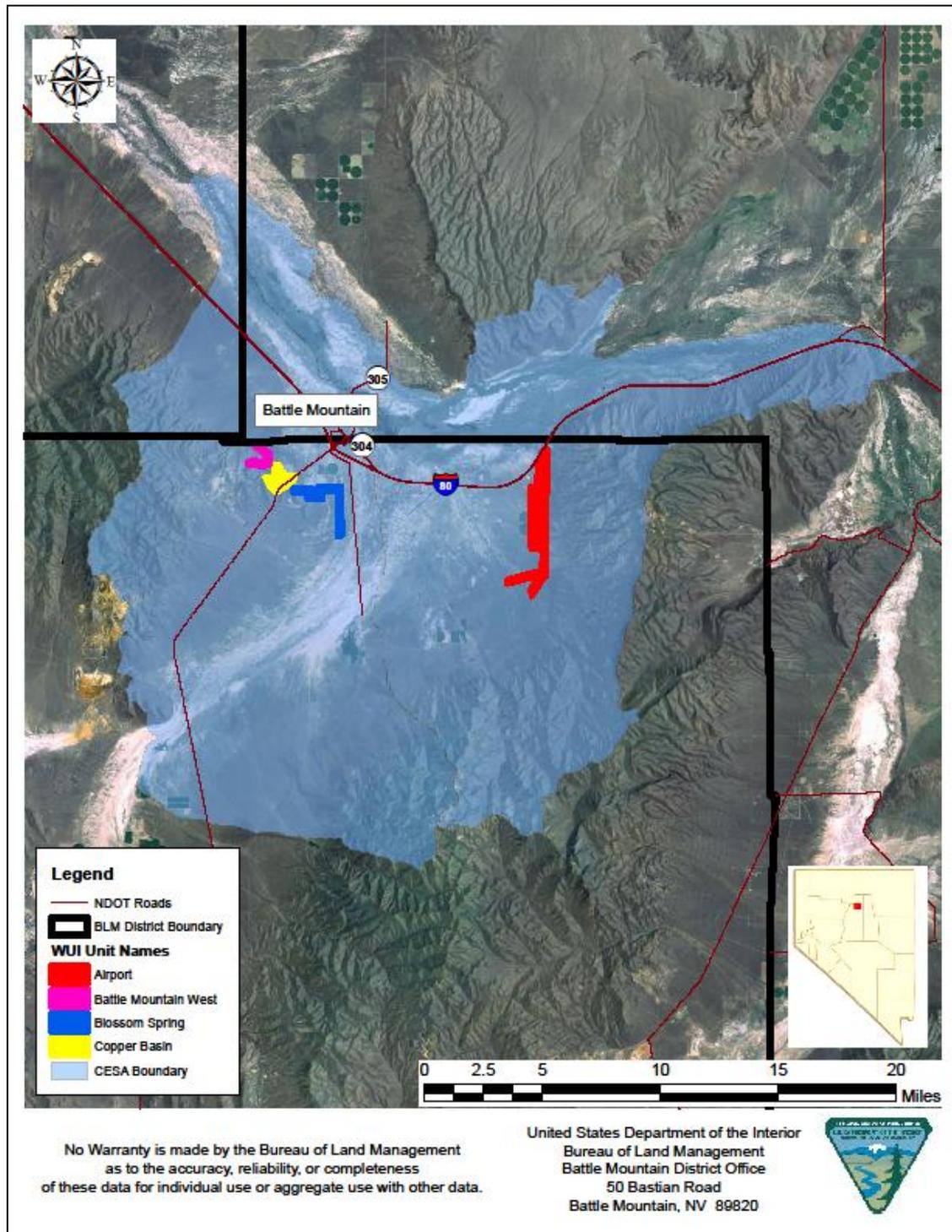
Mining activities, livestock grazing, agriculture, dispersed recreation, and wildland fires in combination with the Proposed Action could result in impacts to migratory bird species, including nesting and foraging habitat. In addition, RFFAs could produce additional noise, which could further displace individual birds from the proposed treatment areas. However, this impact would be short-term and would only last the duration of the project.

Noxious Weeds and Non-Native Invasive Species

RFFAs, in combination with the Proposed Action, would result in ground disturbance, which provides noxious weeds and non-native invasive species the opportunity to become established. The greater the amount of soil disturbance, the higher the risk of noxious weeds and non-native invasive species establishment. In addition, if RFFAs consist of grazing, this may increase the chance of noxious weeds and non-native invasive species establishment, especially if overgrazing occurs. Wildland fires that may occur within the CESA boundary could also result in an increase in noxious weeds and non-native invasive species, as burned areas provide favorable conditions for cheatgrass propagation and establishment.

Water Quality

Mining activities, agriculture, dispersed recreation, and wildland fires would result in ground disturbance, which could eliminate vegetation and expose surface soils to erosion. Sediments could accumulate in the runoff to nearby streams and creeks, causing temporary deterioration of water quality. However, the Proposed Action would only minimally, if at all, contribute to these impacts.



Source: Adapted from BLM GIS Database, BMD, 04/2013

Figure 4-1
CESA Boundary Map for the Proposed Project

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Socioeconomic Values

RFFAs, in combination with the Proposed Action, would result in economic opportunities by providing employment positions. Wildland fires that could potentially occur on nearby lands could result in long-term, negative impacts if infrastructure becomes damaged.

Soils

Mining activities, livestock grazing, wildfires, etc. in combination with the Proposed Action would result in impacts to soils. The magnitude of these impacts depends on the amount of surface disturbance. RFFAs could result in additional removal of vegetation and compaction of soils, which would increase the erosion potential in the CESA boundary. However, the proposed project would only minimally contribute to these impacts.

Vegetation

RFFAs would directly and indirectly result in impacts to vegetation, depending on the action. Grazing would remove additional forage in the area, which could result in a short-term negative impact to grazing allotments. In addition, wildland fires would result in a greater loss of vegetation. However, the Proposed Action is only anticipated to contribute to these impacts minimally.

Wildlife

Mining activities, livestock grazing, wildfires, etc. in combination with the Proposed Action would result in minor impacts to wildlife habitat (including available protective cover, nesting sites, forage, etc.). However, the proposed project would only minimally contribute to these impacts.

4.3.2 NO ACTION ALTERNATIVE

None of the proposed fuels reduction treatments would be undertaken if the No Action Alternative were selected. Therefore, there would be no cumulative effects from the proposed project on any of the identified resources or activities from the No Action Alternative.

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5.0 CONSULTATION AND COORDINATION

5.1 LIST OF PREPARERS

This EA was prepared by Environmental Express Services, Inc. (EES) under contract with and direction from the BLM, Battle Mountain District. The following is a list of individuals that assisted in the preparation of the EA.

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- Melanie Register, Environmental Planner/GIS
- Ellen Stutsman, Technical Editor/Writer/Quality Assurance

5.2 PERSONS, GROUPS, AND AGENCIES CONSULTED

The following individuals, organizations, and agency representatives were contacted during the scoping and/or preparation of this EA:

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- Center for Biological Diversity, Rob Mrowka
- Churchill County Commissioners
- Cloud Foundation, The, Lauryn Wachs
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- Dave Woolfolk
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- Teton Science Schools, Brenda Younkin
- Tom Connolly
- TS Ranch, Dan Gralian
- Western Watersheds Project, Katie Fite
- Yomba Shoshone Tribe, Elisha Mockerman

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Appendix A

Acronyms and Abbreviations

ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
ACEC	Areas of Critical Environmental Concern
AIRFA	American Indian Religious Freedom Act
amsl	Above Mean Sea Level
AQMA	Air Quality Management Area
ARPA	Archaeological Resources Protection Act
ASOS	Automated Stations at Reporting Airports
ATV	All-Terrain Vehicle
AUM	Animal Unit Month
BAQP	Bureau of Air Quality Planning
BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BLM	Bureau of Land Management
BMD	Battle Mountain District
BMPs	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DOI	Department of the Interior

EA	Environmental Assessment
EES	Environmental Express Services, Inc.
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
GBBO	Great Basin Bird Observatory
H ₂ S	Hydrogen Sulfide
HFI	Healthy Forests Initiative
HFRA	Healthy Forests Restoration Act
HILF	High Intensity, Low Frequency
IM	Instruction Memorandum
IPA	Invasive Plant Atlas
LCCD	Lander County Conservation District
MBTA	Migratory Bird Treaty Act
Mg/kg	Milligrams per Kilogram
MLFO	Mount Lewis Field Office
MOU	Memorandum of Understanding

mph	Miles per Hour
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NAGPRA	Native American Graves Protection and Repatriation Act
NAMS	National Air Monitoring Station
NDEP	Nevada Division of Environmental Protection
NDOA	Nevada Department of Agriculture
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO _x	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
O ₃	Ozone
P-G	Pasquill-Gifford

Pb	Lead
PDFs	Project Design Features
PEM	Freshwater Emergent
P.L.	Public Law
PLS	Pure Live Seed
ppb	Parts per Billion
PPE	Personal Protective Equipment
ppm	Parts per Million
ppt	Parts per Thousand
PSD	Prevention of Significant Deterioration
PSS	Freshwater Forested/Shrub
RFFA	Reasonably Foreseeable Future Action
RMP	Resource Management Plan
ROD	Record of Decision
SHPO	Nevada State Historic Preservation Office
SLAMS	State or Local Air Monitoring Station
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxides
SPMS	Special Purpose Monitor Station
SPOC	Single Point of Contact
TSP	Total Suspended Particulate
USACE	United States Army Corps of Engineers
U.S.C.	United States Code

USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
V.O.R.	Very High Frequency Omni-Directional Radio-Range
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WRCC	Western Regional Climate Center
WUI	Wildland-Urban Interface

Appendix B

Glossary

GLOSSARY

100-Year Floodplain: the area of land that has a one percent chance of being inundated by flood waters in a given year

500-Year Floodplain: the area of land that has a 0.2 percent chance of being inundated by flood waters in a given year

Airshed: a part of the atmosphere that behaves in a coherent way with respect to the dispersion of emissions

Aldehyde: an organic compound containing the group CHO, formed by the oxidation of alcohols

Alkaline: having a pH greater than 7

Alluvium: a deposit of clay, silt, sand, and gravel left by flowing streams in a river valley or delta, typically producing fertile soil

American Indian Religious Freedom Act of 1978: a United States federal law and a joint resolution of Congress that was passed in 1978 that was enacted to protect and preserve the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts, and Native Hawaiians

Andesitic: (andesite) a dark grey volcanic rock

Animal Unit Months: the amount of forage needed to sustain one animal unit, or its equivalent, for one month

Aquifer: an underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt, or clay) from which groundwater can be usefully extracted using a water well

Archaeological Resources Protection Act of 1979: the purpose of this Act is to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before the date of the enactment of this Act

Argillite: a sedimentary rock that does not split easily, formed from consolidated clay

Attainment-Unclassifiable: designation to attainment-unclassifiable means that the area has sufficient data to determine that the area is meeting the 8-hour ozone NAAQS or that due to no data or insufficient data, EPA cannot make a determination

Bioaccumulation: refers to the accumulation of substances, such as pesticides, or other organic chemicals in an organism

Biomass: the total mass of living matter in a given unit area

Broadcast Seeding: a method of seeding that involves scattering seed, by hand or mechanically, over a relatively large area

Bureau of Air Quality Planning: an agency created to protect and enhance the environment in order to sustain health ecosystems and contribute to a vibrant economy

Candidate Species: a species that is possibly declining and that is being considered for threatened or endangered status

Canopy: the uppermost trees or branches of trees in a forest, forming a more or less continuous layer of foliage

Carbonate: a common mineral or rock type consisting of carbonates of calcium, iron, and/or magnesium

Chert: a hard, dark, opaque rock composed of silica (chalcedony) with an amorphous or microscopically fine-grained texture; it occurs as nodules (flint) or, less often, in massive beds

Clean Air Act: a United States federal law designed to control air pollution on a national level

Clean Air Act Amendments of 1990: included provisions for the U.S. SO₂ Allowance Trading Program, which strengthened the ability of EPA to set and enforce pollution control programs aimed at protecting human health and the environment

Clutch: used to describe the collective eggs that a bird lays at one time

Colluvium: the name for loose bodies of sediment that have been deposited or built up at the bottom of a low-grade slope or against a barrier on that slope, transported by gravity

Coniferous: any of various mostly needle-leaved or scale-leaved, chiefly evergreen, cone-bearing gymnospermous trees or shrubs such as pines, spruces, and firs.

Council on Environmental Quality: a division of the Executive Office of the President that coordinates federal environmental efforts in the United States and works closely with agencies and other White House offices in the development of environmental and energy policies and initiatives

Demographics: statistical characteristics of a population; commonly examined demographics include gender, age, ethnicity, knowledge of languages, disabilities, mobility, home ownership, employment status, and location

Double Brooding: producing two broods each year; a brood is the young of certain animals, especially a group of young birds or fowl hatched at one time and cared for by the same mother

Drill-Seeding: a method of seeding that uses a seed drill to place seeds at a specific depth and spacing; contrast with broadcast seeding which involves scattering the seed on the surface of the soil

Duripan: a diagnostic soil horizon (a layer parallel to the soil surface, whose physical characteristics differ from the layers above and beneath) of the USDA soil taxonomy (developed by the USDA and the National Cooperative Soil Survey) that provides an elaborate classification of soil types according to several parameters and in several levels

Ecosystem: a system formed by the interaction of a community of organisms with their physical environment

Ecotone: the zone between two major ecological communities

Endangered Species: a species of organisms facing a very high risk of extinction

Endangered Species Act of 1973: a U.S. Fish and Wildlife Service law that provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend

Environmental Impact Statement: a document required by the National Environmental Policy Act for federal government agency actions “significantly affecting the quality of the human environment”

Environmental Justice: the fair treatment of people of all races and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies

Fallow: farmland that is plowed and harrowed but left unsown for a period in order to restore its fertility as part of a crop rotation or to avoid surplus production

Federal Emergency Management Agency: an independent agency of the United States government that provides a single point of accountability for all federal emergency preparedness and mitigation and response activities

Federal Land Policy and Management Act of 1976: a United States federal law that governs the way in which public lands administered by the Bureau of Land Management are managed

Finding of No Significant Impact: issued when environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment

Fine Fuel: fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a time lag of one hour or less; these fuels ignite readily and are rapidly consumed by fire when dry

Fire Regime: the pattern, frequency and intensity of fire that prevails in an area; an integral part of fire ecology

Fire Scar: a healing or healed-over injury caused or aggravated by fire on a woody plant; a mark left on a landscape by fire

Fireline: a gap in vegetation or other combustible material that acts as a barrier to slow or stop the progress of a wildfire

Fish and Wildlife Conservation Act: a federal legislation providing protection and management of non-game fish and wildlife; it declares that, fish and wildlife are of ecological, educational, aesthetic, cultural, recreational, economic, and scientific value to the nation

Flashy Fuel: wildland fuels that are easily ignited and that burn rapidly when dry; some examples are grass, leaves, pine needles, fern, tree moss, and some kinds of slash

Flood Insurance Rate Map: an official map of a community within the United States that displays the floodplains, more explicitly special hazard areas and risk premium zones, as delineated by the Federal Emergency Management Agency (FEMA)

Floodplain: a flat or nearly flat land adjacent a stream or river that stretches from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high discharge

Forage: plant material (mainly plant leaves and stems) eaten by grazing livestock

Forb: an herbaceous flowering plant other than a grass

Fuel Break: a gap in vegetation or other combustible material that acts as a barrier to slow or stop the progress of a bushfire or wildfire

Fuel Loading: the amount of flammable material that surrounds a fire

Fugitive Dust: particulate matter that becomes airborne and has the potential to adversely affect human health or the environment

Gallinaceous: relating to birds of an order (Galliformes) which includes domestic poultry and game birds

Germination: the process whereby seeds or spores sprout and begin to grow

Grazing: generally describes a type of feeding, in which a herbivore feeds on plants (such as grasses)

Grazing Allotment: an area of land designated and managed for grazing of livestock (43 CFR 4100.0-5); it may include private, state, and public lands under the jurisdiction of the Bureau of Land Management and/or other federal agencies and may be subdivided into pastures

Great Basin Desert: a Nearctic high desert across eight counties that extends into the Colorado River watershed (Clark & Lincoln counties on the southwest), but which is mostly a portion of the central Nevada watershed of the much larger Great Basin

Green Strip: an uncut strip of timber left along streams and roads; also known as a buffer strip or leave strip

Greenhouse Gas: a gas in the atmosphere that absorbs and emits radiation within the atmosphere

Growing Season: the period of each year, usually determined by climate and elevation, when crops, native plants and ornamental plants grow

Half-Life: the period of time it takes for a substance undergoing decay to decrease by half

Hazardous Fuel: any kind of living or dead vegetation that is flammable

Healthy Forests Initiative (i.e. Healthy Forests Restoration Act): officially known as the Healthy Forests Restoration Act of 2003 (P.L. 108-148), is a law originally proposed by President George W. Bush in response to the widespread forest fires during the summer of 2002

Herbaceous Plant: a plant that has leaves and stems that die down at the end of the growing season to the soil level; they have no persistent woody stem above ground; a herbaceous plant may be annual, biennial or perennial

Humboldt River: runs through northern Nevada in the western United States

Humboldt Sink: an intermittent dry lake bed, approximately 11 miles long, and 4 miles across, in northwestern Nevada in the United States; the body of water in the sink is known as Humboldt Lake

Jarbidge Wilderness: located in the upper elevations of the Jarbidge Mountains in northern Elko County, in northeastern Nevada in the western United States; established in 1964, it was the first wilderness area in the state

Lacustrine: of or relating to lakes

Lagomorph: large gnawing animals; distinguished from rodents by having two pairs of upper incisors specialized for gnawing

Lake Plain: an area dominated by low-lying relief that formed at the bottom of a glacial lake during part of the glacial period

Lander County Conservation District: established to develop plans and programs for both preventative and corrective measures, and assist in carrying them out, for the lasting benefit of residents in both rural and urban areas

Landscape: all the visible features of an area of countryside or land, often considered in terms of their aesthetic appeal

Lek: a patch of ground used for communal display in the breeding season by the males of certain birds and mammals

Loam: a soil with roughly equal proportions of sand, silt, and clay

Loess: a loosely compacted yellowish-gray deposit of windblown sediment of which extensive deposits occur

Mesic: an environment or habitat that contains a moderate amount of moisture

Migratory Bird Treaty Act: under United States Code Title 16, Chapter 7, Subchapter II, the Migratory Bird Treaty Act of 1918 is the United States legislation implementing the convention between the U.S. and Great Britain (for Canada); it replaced the Weeks-McLean Act, which had become effective in 1913

Montane: inhabiting mountainous country

Mychorriza: a fungus that grows in association with the roots of a plant in a symbiotic or mildly pathogenic relationship

National Ambient Air Quality Standards: standards established by the United States Environmental Protection Agency under authority of the Clean Air Act (42 U.S.C. 7401 et seq.) that apply for outdoor air throughout the country; the maximum allowable concentrations of

pollutants that EPA may reasonably anticipate pose a danger to public health or welfare that, when violated, the standards cause an area to be designated a non-attainment area

National Environmental Policy Act of 1969: a United States environmental law that established a U.S. national policy promoting the enhancement of the environment and also established the President's Council on Environmental Quality (CEQ)

National Historic Preservation Act of 1966: legislation intended to preserve historical and archaeological sites in the United States of America

National Pollution Discharge Elimination System: the permit process established under the Clean Water Act that requires municipal and industrial wastewater treatment facilities to obtain permits that specify the types and amounts of pollutants that may be discharged into water bodies

National Register of Historic Places: the United States' official list of districts, sites, buildings, structures, and objects deemed worthy of preservation

Native American Graves Protection and Repatriation Act of 1990: a United States federal law that requires federal agencies and institutions that receive federal funding to return Native American "cultural items" to lineal descendants and culturally affiliated Indian tribes and Native Hawaiian organizations

Natural Resource Conservation Service: a unit of the federal U.S. Department of Agriculture that provides assistance to landowners to help conserve, improve, and sustain our resources and environment

Nevada Department of Agriculture: the Mission of the Department is to benefit the welfare of all persons residing in the state by encouraging the advancement and protection of Nevada's agriculture and related industries

Nevada Division of Environmental Protection: enforces state laws and regulations to protect the human and natural environment

Nevada Division of Water Resources: the mission of the Nevada Division of Water Resources (NDWR) is to conserve, protect, manage, and enhance the State's water resources for Nevada's citizens through the appropriation and reallocation of the public waters

Nevada State Clearinghouse: the single point of contact for National Environmental Policy Act (NEPA) proposals statewide

Nevada State Historic Preservation Office: an office that encourages the preservation, documentation, and use of cultural resources through state and federal programs; works to educate the public about the importance of our cultural heritage so that Nevada's historic and

archaeological properties are preserved, interpreted, and reused for their economic, educational, and intrinsic values and for future generations to appreciate

Nevada Water Pollution Control Law [Act]: the principal water quality statute in the state that is administered by Nevada's Department of Conservation and Natural Resources (DCNR); NWPA governs both surface water and groundwater, and it implements portions of the federal CWA and the federal Safe Drinking Water Act (SDWA)

Noxious Weed: a plant species that has been designated by a national agricultural authority as one that is injurious to agricultural and horticultural crops, natural habitats and ecosystems, and/or humans or livestock

Obligate: able to exist or survive only in a particular environment or by assuming a particular role

Organic Matter: matter that has come from a once-living organism, is capable of decay or is the product of decay, or is composed of organic compounds

Perennial: a plant lasting for three seasons or more

Personal Protective Equipment: any devices or clothing worn by the worker to protect against hazards in the environment (examples are respirators, gloves, and chemical splash goggles)

Photolysis: the decomposition or separation of molecules by the action of light

Photoperiod: the period of time each day during which an organism receives illumination; day length

Piedmont: a gentle slope leading from the base of mountains to a region of flat land

Plateau®: a herbicide that controls more than 60 broadleaf, sedge, and grassy weeds which compete with new native grass seedlings; labeled for use with big bluestem, little bluestem, indiangrass, and sideoats grama

Playa: an area of flat, dried-up land, especially a desert basin from which water evaporates quickly

Prevention of Significant Deterioration: under the Clean Air Act, a planning and management process for air quality when a new source of air pollution is proposed in an area where ambient air quality is better than applicable standards (areas of special importance)

Public Rangeland Improvement Act of 1978: establishes rangeland monitoring and inventory procedures for Bureau of Land Management and United States Forest Service rangelands

Pyroclastic: fragments of rock erupted by a volcano

Quartzite: an extremely compact, hard, granular rock consisting essentially of quartz which often occurs as silicified sandstone, as in sarsen stones

Rangeland: open country used for grazing or hunting animals

Reciprocal Fire Protection Act of 1955: specifically authorizes the execution of agreements between agencies of the United States, and other agencies and instrumentalities for mutual aid in fire protection and other fire management purposes

Record of Decision: a concise, public legal document which identifies publicly and officially discloses the responsible official's decision on the alternative selected for implementation; it is prepared following completion of an Environmental Impact Statement

Rhizome: a continuously growing horizontal underground stem that puts out lateral shoots and adventitious roots at intervals

Rhyolitic: very acid volcanic rock

Riparian: relating to wetlands adjacent to rivers and streams

Ruminant: any of various hoofed, even-toed, usually horned mammals of the suborder Ruminantia, such as cattle, sheep, goats, deer, and giraffes, characteristically having a stomach divided into four compartments and chewing a cud consisting of regurgitated, partially digested food

Section 106 Review: requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment

Seedbed: a bed of fine soil in which seedlings are germinated

Senescence: the stage of growth in a plant or plant part from maturity to death, characterized by an accumulation of metabolic products, an increased respiratory rate, and a loss in dry weight

Sensitive Species: a species not yet officially listed but undergoing status review for listing on the U.S. Fish and Wildlife Service's (FWS) official threatened and endangered list; species whose populations are small and widely dispersed or restricted to a few localities; and species whose numbers are declining

Shale: soft, finely stratified sedimentary rock that formed from consolidated mud or clay and can be split easily into fragile plates

Shrub: distinguished from a tree by its multiple stems and shorter height, usually under 20 feet tall

Shrub-Steppe: a term to describe a landscape with vegetation that is a mixture of shrubs and grasses with few trees

Silt: fine sand, clay, or other material carried by running water and deposited as a sediment

Soil Crust: a hard crust that forms on exposed soil in brittle and semi-brittle environments

Stream Terrace: relict features, such as floodplains, from periods when a stream was flowing at a higher elevation and has downcut to a lower elevation; stream terraces often appear as plateaus on existing valley walls and indicate earlier stream elevations

Subspecies: a taxonomic category that ranks below species, usually a fairly permanent geographically isolated race

Substratum: an underlying layer or substance, in particular a layer of rock or soil beneath the surface of the ground

Taylor Grazing Act of 1934: a United States federal law that provides for the regulation of grazing on public lands (excluding Alaska) to improve rangeland conditions and regulate their use

Thinning: the selective removal of trees, primarily undertaken to improve the growth rate or health of remaining trees

Threatened Species: under the Endangered Species Act in the United States, "threatened" is defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range"

Timber Protection Act of 1922: authorizes the Secretary to protect timber on lands under the Department's jurisdiction from fire, disease and insects

Total Suspended Particulate: refers to particles in the air such as smoke, soot, dust and aerosols that remain suspended and do not settle out easily

Ungulate: a hoofed animal; several groups of mammals, most of which use the tips of their toes, usually hooved, to sustain their whole body weight while moving

U.S. Census Bureau: the government agency that is responsible for the United States Census; it also gathers other national demographic and economic data

U.S. Environmental Protection Agency: a federal government agency that was created for protecting human health and the environment

Vegetative Community: a collection of plant species within a designated geographical unit, which forms a relatively uniform patch, distinguishable from neighboring patches of different vegetation types

Watershed: elevation or divide separating a drainage basin of one river system (or group of river systems) from another river system (or group of systems)

Wetland: an area of land whose soil is saturated with moisture either permanently or seasonally

Wildland-Urban Interface: the zone of transition between unoccupied land and human development

Xeric: an environment or habitat that contains little moisture; is very dry

Appendix C

Coordination Letters

Coordination Letter (dated 09/07/12)C-1
Letter to BMD from Dan and Eddyann Filippini (dated 09/27/12)C-3
Tribal Coordination Letters.....C-5



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Battle Mountain District Office

50 Bastian Road

Battle Mountain, Nevada 89820

Phone: 775-635-4000 Fax: 775-635-4034

http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html

In Reply Refer To:
9210 (NV-064)

September 7, 2012

Dear Interested Parties,

In keeping our public informed of on-going planning efforts, The Bureau of Land Management's (BLM) Battle Mountain District Office (BMDO) wishes to notify interested parties of a planning effort to reduce hazardous fuel loadings and create a defensible buffer from catastrophic wildfire in and around Battle Mountain, NV. Comments on this project may be sent to the BMDO, *ATTN: Battle Mountain Fire Defense System Project Lead*, and will be accepted until 09-28-2012.

A fire risk and hazard assessment has been completed for the Battle Mountain area. The BMDO has identified approximately 22,000 acres of Wildland-urban Interface Public Lands that are at an overall moderate risk of experiencing catastrophic wildfire.

As a result of implementing the proposed action, buffers would be created in strategic areas which would serve to moderate fire behavior within the treated areas, therefore reducing the likelihood of a wildfire entering (or leaving) the community of Battle Mountain. It would create a safer environment for firefighters to engage in suppression operations than what is present now. Further benefits include local watershed protection, improvement of stand structure and increased opportunities for ecological diversity within the Wildland-Urban Interface. In addition, areas within the wildland-urban interface would be more resistant to fire. Upon completion of this project, monitoring, and further maintenance (mechanical, chemical, biological, and/or possible prescribed fire) treatments will be utilized to maintain the project area.

A combination of mechanical, chemical and biological treatments are a cost-effective and eco-friendly way to address the hazardous fuel conditions occurring within the Battle Mountain Fire Defense Systems Assessment Area.

A local scoping meeting will be scheduled in Battle Mountain, Nevada, to meet with interested publics to further develop the project. Reasonable and feasible options will be discussed including brush-beating (shrub mastication), green-stripping and the use of prescribed grazing. The goal is to create a fire defense system within the assessment area to make an established or emerging wildfire easier and safer to manage. Staff from the Battle Mountain District Fire Program will facilitate the meeting in order to gain feedback on the most favorable options for

protecting at-risk resources in the Battle Mountain Assessment Area. Notice for this meeting will be provided via local press releases and flyers posted within the communities.

I am enclosing two maps of the proposed treatment areas within the Battle Mountain area. The first map (Figure 1) illustrates areas that we have identified as potential areas for hazardous fuels reduction work to occur based on the risk assessment that has been completed. The second map (Figure2) illustrates areas that have natural barriers and are already resistant to fire spread.

This package should provide interested parties with a good understanding of what the BMDO intends to accomplish to provide defensible buffers from wildfire. Any other questions regarding this project should be directed to Josh Tibbetts, Prescribed Fire/Fuels Specialist or Chad Lewis, Fuels Program Manager at 775-635-4000.

Sincerely,

\s\

Christopher J. Cook
Mount Lewis Field Office
Field Manager

Enclosures

NV064,jtibbetts;8/27/12

RECEIVED-MAILROOM

2012 SEP 28 PM 1:09

BUREAU OF LAND MANAGEMENT
BATTLE MOUNTAIN
DISTRICT OFFICE

Badger Ranch

Dan and Eddyann Filippini

Battle Mountain, Nevada

September 27, 2012

Battle Mountain District Office
ATTN: Battle Mountain Fire Defense System Project Lead
50 Bastian Road
Battle Mountain, NV 89820

Subject: Battle Mountain Fire Defense System Project

Dear Project Lead:

Thank you for the opportunity to comment on the Battle Mountain Fire Defense Project. We appreciate efforts to protect the Battle Mountain community and the surrounding lands from fire. We commend the project lead for recognizing that fire can travel both ways across the Wildland-Urban interface. We are interested in the development of this project and request to be kept informed of all stages of its development.

We support the concept of vegetation management to provide defensible space for both the wildlands and urban areas. We support all three of the options presented in the letter (brush-beating, green-stripping, and use of targeted grazing). Additionally, we encourage use of large-scale buffer areas where annual grass monocultures are converted to perennial grass seedings. Large seedings should be evaluated and implemented to replace all areas of annual grass (near-) monocultures within the Wildland-Urban Interface. Properly implemented these seedings provide not only a buffer around the urban area that is less flammable and more defensible than annual grass communities, but an opportunity to create better natural resource conditions including improved habitat and soil health. Although seedings tend to be simple in structure during the initial period, examples throughout Nevada show that even monoculture seedings of crested wheatgrass become repopulated with native shrubs and forbs over the long term.

Review of the maps provided by with the letter raises questions for land ownership and project organization. Although this appears to be a BLM project in the letter and the letter states that 22,000 acres of the project area fall on public lands, the large majority of the area identified on the supplied maps as moderate, high, or very high risk occur on private lands. The letter does not identify how the project will incorporate the interests and input of all of the stakeholders and landowners involved. The

letter does not speak of any cooperative effort with the city of Battle Mountain, the Airport, neighborhood associations, the Te-Moak Tribe of Western Shoshone Indians, or other landowners. Please clarify how the project will deal with these issues.

Again, please notify us of all meetings and include us in the planning process.

Sincerely:

Dan Filippini
Eddyann Filippini

Dan and Eddyann Filippini



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Mount Lewis Field Office

50 Bastian Road

Battle Mountain, Nevada 89820

Phone: 775-635-4000

Fax: 775-635-4034

http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html

In Reply Refer To:
(NVB0100)

CERTIFIED MAIL - RETURN RECEIPT REQUESTED 9171 9690 0935 0013 4400 36

Virginia Sanchez - Chairwoman
Duckwater Shoshone Tribe
P.O. Box 140068
Duckwater, NV 89314

Dear Mrs. Virginia Sanchez:

In keeping our public informed of on-going planning efforts, The Bureau of Land Management's (BLM) Battle Mountain District Office (BMDO) wishes to notify Duckwater Shoshone Tribe of a planning effort to reduce hazardous fuel loadings and create a defensible buffer from catastrophic wildfire in and around Battle Mountain, NV. Comments on this project may be sent to the BMDO, *ATTN: Battle Mountain Fire Defense System Project Lead*, and will be accepted until 07-27-2012.

A fire risk and hazard assessment has been completed for the Battle Mountain area. The BMDO has identified approximately 22,000 acres of Wildland-urban Interface Public Lands that are at an overall moderate risk of experiencing catastrophic wildfire.

As a result of implementing the proposed action, buffers would be created in strategic areas which would serve to moderate fire behavior within the treated areas, therefore reducing the likelihood of a wildfire entering (or leaving) the community of Battle Mountain. It would create a safer environment for firefighters to engage in suppression operations than what is present now. Further benefits include local watershed protection, improvement of stand structure and increased opportunities for ecological diversity within the Wildland-Urban Interface. In addition, areas within the wildland-urban interface would be more resistant to fire. Upon completion of this project, monitoring, and further maintenance (mechanical, chemical, biological, and/or possible prescribed fire) treatments will be utilized to maintain the project area.

A combination of mechanical, chemical and biological treatments are a cost-effective and eco-friendly way to address the hazardous fuel conditions occurring within the Battle Mountain Fire Defense Systems Assessment Area.

The BLM is not aware of any specific traditional/cultural sites, activities, or resources within or in close proximity to the project boundary. We value your knowledge, concerns, and

perspectives relating to the project area. Therefore, the BLM asks for your participation in identifying such resources and in developing mitigation measures that may reduce or eliminate any impacts. In accordance with Secretarial Order 3317, the BLM is inviting the Tribe to participate in government-to-government consultation on the proposed project.

Your information will be incorporated into the decision making process. Please respond within 30 days of receipt of this letter or let us know if more time is needed for a response. We look forward to working cooperatively to address your concerns in a thoughtful and respectful manner.

If you would like further information or wish to request a meeting, please contact Tim Coward, at (775) 482-7830. With regard to cultural heritage issues, you may wish to contact Teresa Dixon, Assistant Field Manager, at (775) 635-4062. Thank you for your time and consideration.

Sincerely,

Christopher J. Cook
Field Manager

Enclosure

cc: Maurice-Frank Churchil, Duckwater Shoshone Tribe
Patricia knight, Duckwater Shoshone Tribe



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Mount Lewis Field Office

50 Bastian Road

Battle Mountain, Nevada 89820

Phone: 775-635-4000

Fax: 775-635-4034

http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html

In Reply Refer To:
(NVB0100)

CERTIFIED MAIL - RETURN RECEIPT REQUESTED 9171 9690 0935 0013 4400 29

Elisha Mockerman – Chairwoman
Yomba Shoshone Tribe
HC 61 Box 6275
Austin, Nevada 89310

Dear Ms. Elisha Mockerman:

In keeping our public informed of on-going planning efforts, The Bureau of Land Management's (BLM) Battle Mountain District Office (BMDO) wishes to notify the Yomba Shoshone Tribe of a planning effort to reduce hazardous fuel loadings and create a defensible buffer from catastrophic wildfire in and around Battle Mountain, NV. Comments on this project may be sent to the BMDO, *ATTN: Battle Mountain Fire Defense System Project Lead*, and will be accepted until 07-27-2012.

A fire risk and hazard assessment has been completed for the Battle Mountain area. The BMDO has identified approximately 22,000 acres of Wildland-urban Interface Public Lands that are at an overall moderate risk of experiencing catastrophic wildfire.

As a result of implementing the proposed action, buffers would be created in strategic areas which would serve to moderate fire behavior within the treated areas, therefore reducing the likelihood of a wildfire entering (or leaving) the community of Battle Mountain. It would create a safer environment for firefighters to engage in suppression operations than what is present now. Further benefits include local watershed protection, improvement of stand structure and increased opportunities for ecological diversity within the Wildland-Urban Interface. In addition, areas within the wildland-urban interface would be more resistant to fire. Upon completion of this project, monitoring, and further maintenance (mechanical, chemical, biological, and/or possible prescribed fire) treatments will be utilized to maintain the project area.

A combination of mechanical, chemical and biological treatments are a cost-effective and eco-friendly way to address the hazardous fuel conditions occurring within the Battle Mountain Fire Defense Systems Assessment Area.

The BLM is not aware of any specific traditional/cultural sites, activities, or resources within or in close proximity to the project boundary. We value your knowledge, concerns, and

perspectives relating to the project area. Therefore, the BLM asks for your participation in identifying such resources and in developing mitigation measures that may reduce or eliminate any impacts. In accordance with Secretarial Order 3317, the BLM is inviting the Tribe to participate in government-to-government consultation on the proposed project.

Your information will be incorporated into the decision making process. Please respond within 30 days of receipt of this letter or let us know if more time is needed for a response. We look forward to working cooperatively to address your concerns in a thoughtful and respectful manner.

If you would like further information or wish to request a meeting, please contact Tim Coward, at (775) 482-7830. With regard to cultural heritage issues, you may wish to contact Teresa Dixon, Assistant Field Manager, at (775) 635-4062. Thank you for your time and consideration.

Sincerely,

Christopher J. Cook
Field Manager

Enclosure

cc: Karmel Bryan, Yomba Shoshone Tribe



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Mount Lewis Field Office
50 Bastian Road
Battle Mountain, Nevada 89820
Phone: 775-635-4000 Fax: 775-635-4034
http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html

In Reply Refer To:
(NVB0100)

CERTIFIED MAIL - RETURN RECIEPT REQUESTED 9171 9690 0935 0013 4400 12

Bryan Cassadore – Chairman
Te-Moak Tribe of Western Shoshone
525 Sunset Street
Elko, NV 89801

Dear Mr. Bryan Cassadore:

In keeping our public informed of on-going planning efforts, The Bureau of Land Management's (BLM) Battle Mountain District Office (BMDO) wishes to notify Te-Moak Tribe of Western Shoshone of a planning effort to reduce hazardous fuel loadings and create a defensible buffer from catastrophic wildfire in and around Battle Mountain, NV. Comments on this project may be sent to the BMDO, *ATTN: Battle Mountain Fire Defense System Project Lead*, and will be accepted until 07-27-2012.

A fire risk and hazard assessment has been completed for the Battle Mountain area. The BMDO has identified approximately 22,000 acres of Wildland-urban Interface Public Lands that are at an overall moderate risk of experiencing catastrophic wildfire.

As a result of implementing the proposed action, buffers would be created in strategic areas which would serve to moderate fire behavior within the treated areas, therefore reducing the likelihood of a wildfire entering (or leaving) the community of Battle Mountain. It would create a safer environment for firefighters to engage in suppression operations than what is present now. Further benefits include local watershed protection, improvement of stand structure and increased opportunities for ecological diversity within the Wildland-Urban Interface. In addition, areas within the wildland-urban interface would be more resistant to fire. Upon completion of this project, monitoring, and further maintenance (mechanical, chemical, biological, and/or possible prescribed fire) treatments will be utilized to maintain the project area.

A combination of mechanical, chemical and biological treatments are a cost-effective and eco-friendly way to address the hazardous fuel conditions occurring within the Battle Mountain Fire Defense Systems Assessment Area.

The BLM is not aware of any specific traditional/cultural sites, activities, or resources within or in close proximity to the project boundary. We value your knowledge, concerns, and

perspectives relating to the project area. Therefore, the BLM asks for your participation in identifying such resources and in developing mitigation measures that may reduce or eliminate any impacts. In accordance with Secretarial Order 3317, the BLM is inviting the Tribe to participate in government-to-government consultation on the proposed project.

Your information will be incorporated into the decision making process. Please respond within 30 days of receipt of this letter or let us know if more time is needed for a response. We look forward to working cooperatively to address your concerns in a thoughtful and respectful manner.

If you would like further information or wish to request a meeting, please contact Tim Coward, at (775) 482-7830. With regard to cultural heritage issues, you may wish to contact Teresa Dixon, Assistant Field Manager, at (775) 635-4062. Thank you for your time and consideration.

Sincerely,

Christopher J. Cook
Field Manager

Enclosure

cc: Pat Stevens, Te-Moak Tribe of Western Shoshone



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Mount Lewis Field Office
50 Bastian Road
Battle Mountain, Nevada 89820
Phone: 775-635-4000 Fax: 775-635-4034
http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html

In Reply Refer To:
(NVB0100)

CERTIFIED MAIL - RETURN RECEIPT REQUESTED 9171 9690 0935 0013 4400 43

Gregory Holley – Vice Chairman
Battle Mountain Band Council
37 Mountain View Drive
Battle Mountain, NV 89820

Dear Mr. Gregory Holley:

In keeping our public informed of on-going planning efforts, The Bureau of Land Management's (BLM) Battle Mountain District Office (BMDO) wishes to notify Battle Mountain Band of a planning effort to reduce hazardous fuel loadings and create a defensible buffer from catastrophic wildfire in and around Battle Mountain, NV. Comments on this project may be sent to the BMDO, *ATTN: Battle Mountain Fire Defense System Project Lead*, and will be accepted until *07-27-2012*.

A fire risk and hazard assessment has been completed for the Battle Mountain area. The BMDO has identified approximately 22,000 acres of Wildland-urban Interface Public Lands that are at an overall moderate risk of experiencing catastrophic wildfire.

As a result of implementing the proposed action, buffers would be created in strategic areas which would serve to moderate fire behavior within the treated areas, therefore reducing the likelihood of a wildfire entering (or leaving) the community of Battle Mountain. It would create a safer environment for firefighters to engage in suppression operations than what is present now. Further benefits include local watershed protection, improvement of stand structure and increased opportunities for ecological diversity within the Wildland-Urban Interface. In addition, areas within the wildland-urban interface would be more resistant to fire. Upon completion of this project, monitoring, and further maintenance (mechanical, chemical, biological, and/or possible prescribed fire) treatments will be utilized to maintain the project area.

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The BLM is not aware of any specific traditional/cultural sites, activities, or resources within or

in close proximity to the project boundary. We value your knowledge, concerns, and perspectives relating to the project area. Therefore, the BLM asks for your participation in identifying such resources and in developing mitigation measures that may reduce or eliminate any impacts. In accordance with Secretarial Order 3317, the BLM is inviting the Tribe to participate in government-to-government consultation on the proposed project.

Your information will be incorporated into the decision making process. Please respond within 30 days of receipt of this letter or let us know if more time is needed for a response. We look forward to working cooperatively to address your concerns in a thoughtful and respectful manner.

If you would like further information or wish to request a meeting, please contact Tim Coward, at (775) 482-7830. With regard to cultural heritage issues, you may wish to contact Teresa Dixon, Assistant Field Manager, at (775) 635-4062. Thank you for your time and consideration.

Sincerely,

Christopher J. Cook
Field Manager

Enclosure

cc: Donna Hill, Battle Mountain Band

Appendix D

BLM-Approved Chemicals

<i>Herbicides Approved for Use on BLM Lands in Accordance with the 17 Western States PEIS ROD and Oregon EIS ROD*</i>					
				Update September 1, 2011	
	STATES WITH APPROVAL BASED UPON CURRENT				
ACTIVE				EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Bromacil	AK, AZ, CA, CO, ID, MT, ND,	Bromacil 80DF	Alligare, LLC	81927-4	Y
	NE, NM, NV, OK, OR-East, SD,	Hyvar X	DuPont Crop Protection	352-287	Y
	TX, UT, WA, WY	Hyvar XL	DuPont Crop Protection	352-346	Y
Bromacil + Diuron	AK, AZ, CA, CO, ID, MT, ND,	Bromacil/Diuron 40/40	Alligare, LLC	81927-3	Y
	NE, NM, NV, OK, OR-East, SD,	Krovar I DF	DuPont Crop Protection	352-505	Y
	TX, UT, WA, WY	Weed Blast Res. Weed Cont.	Loveland Products Inc.	34704-576	N
		DiBro 2+2	Nufarm Americas Inc.	228-227	Y
		DiBro 4+4	Nufarm Americas Inc.	228-235	N
		DiBro 4+2	Nufarm Americas Inc.	228-386	N
		Weed Blast 4G	SSI Maxim	34913-19	N
Chlorsulfuron	AK, AZ, CA, CO, ID, MT, ND,	Alligare Chlorsulfuron	Alligare, LLC	81927-43	N
	NE, NM, NV, OK, OR-East, SD,	Telar DF	DuPont Crop Protection	352-522	Y
	TX, UT, WA, WY	Telar XP	DuPont Crop Protection	352-654	Y
		NuFarm Chlorsulf SPC 75 WDG Herbicide	Nufarm Americas Inc.	228-672	N
		Chlorsulfuron E-Pro 75 WDG	Nufarm Americas Inc.	79676-72	N
Clopyralid	AK, AZ, CA, CO, ID, MT, ND,	Spur	Albaugh, Inc.	42750-89	Y
	NE, NM, NV, OK, OR, SD, TX,	Pyramid R&P	Albaugh, Inc.	42750-94	N
	UT, WA, WY	Clopyralid 3	Alligare, LLC	42750-94-81927	Y
		Cody Herbicide	Alligare, LLC	81927-28	Y
		Reclaim	Dow AgroSciences	62719-83	N
		Stinger	Dow AgroSciences	62719-73	Y
		Transline	Dow AgroSciences	62719-259	Y
		CleanSlate	Nufarm Americas Inc.	228-491	Y

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Clopyralid +	AK, AZ, CA, CO, ID, MT, ND,	Commando	Albaugh, Inc.	42750-92	N
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Curtail	Dow AgroSciences	62719-48	N
	UT, WA, WY	Cutback	Nufarm Americas Inc.	71368-72	N
2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Agrisolution 2,4-D LV6	Agriliance, L.L.C.	1381-101	N
	NE, NM, NV, OK, OR, SD, TX,	Agrisolution 2,4-D Amine 4	Agriliance, L.L.C.	1381-103	N
	UT, WA, WY	Agrisolution 2,4-D LV4	Agriliance, L.L.C.	1381-102	N
		2,4-D Amine 4	Albaugh, Inc./Agri Star	42750-19	Y
		2,4-D LV 4	Albaugh, Inc./Agri Star	42750-15	Y
		Solve 2,4-D	Albaugh, Inc./Agri Star	42750-22	Y
		2,4-D LV 6	Albaugh, Inc./Agri Star	42750-20	N
		Five Star	Albaugh, Inc./Agri Star	42750-49	N
		D-638	Albaugh, Inc./Agri Star	42750-36	N
		Alligare 2,4-D Amine	Alligare, LLC	81927-38	N
		2,4-D LV6	Helena Chemical Company	4275-20-5905	N
		2,4-D Amine	Helena Chemical Company	5905-72	N
		2,4-D Amine 4	Helena Chemical Company	42750-19-5905	N
		Opti-Amine	Helena Chemical Company	5905-501	N
		Barrage HF	Helena Chemical Company	5905-529	N
		HardBall	Helena Chemical Company	5905-549	N
		Unison	Helena Chemical Company	5905-542	N
		Clean Amine	Loveland Products Inc.	34704-120	N
		Low Vol 4 Ester Weed Killer	Loveland Products Inc.	34704-124	N
		Low Vol 6 Ester Weed Killer	Loveland Products Inc.	34704-125	N
		Saber	Loveland Products Inc.	34704-803	N
		Salvo	Loveland Products Inc.	34704-609	N
		Savage DS	Loveland Products Inc.	34704-606	Y
		Aqua-Kleen	Nufarm Americas Inc.	71368-4	N
		Aqua-Kleen	Nufarm Americas Inc.	228-378	N
		Esteron 99C	Nufarm Americas Inc.	62719-9-71368	N
	Weedar 64	Nufarm Americas Inc.	71368-1	Y	
	Weedone LV-4	Nufarm Americas Inc.	228-139-71368	Y	
	Weedone LV-4 Solventless	Nufarm Americas Inc.	71368-14	Y	

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
2,4-D - cont.	AK, AZ, CA, CO, ID, MT, ND,	Weedone LV-6	Nufarm Americas Inc.	71368-11	Y
	NE, NM, NV, OK, OR, SD, TX,	Formula 40	Nufarm Americas Inc.	228-357	Y
	UT, WA, WY	2,4-D LV 6 Ester	Nufarm Americas Inc.	228-95	Y
		Platoon	Nufarm Americas Inc.	228-145	N
		WEEDstroy AM-40	Nufarm Americas Inc.	228-145	Y
		Hi-Dep	PBI Gordon Corp.	2217-703	N
		2,4-D Amine	Setre (Helena)	5905-72	N
		Barrage LV Ester	Setre (Helena)	5905-504	N
		2,4-D LV4	Setre (Helena)	5905-90	N
		2,4-D LV6	Setre (Helena)	5905-93	N
		Clean Crop Amine 4	UAP-Platte Chem. Co.	34704-5 CA	Y
		Clean Crop Low Vol 6 Ester	UAP-Platte Chem. Co.	34704-125	N
		Salvo LV Ester	UAP-Platte Chem. Co.	34704-609	N
		2,4-D 4# Amine Weed Killer	UAP-Platte Chem. Co.	34704-120	N
		Clean Crop LV-4 ES	UAP-Platte Chem. Co.	34704-124	N
		Savage DS	UAP-Platte Chem. Co.	34704-606	Y
		Corbalt 4 lb. Amine	Van Diest Supply Co.	11773-2	N
		Corbalt 4# LoVol Ester	Van Diest Supply Co.	11773-3	N
		Corbalt 6# LoVol Ester	Van Diest Supply Co.	11773-4	N
		Amine 4	Wilbur-Ellis Co.	2935-512	N
		Lo Vol-4	Wilbur-Ellis Co.	228-139-2935	N
		Lo Vol-6 Ester	Wilbur-Ellis Co.	228-95-2935	N
		Base Camp Amine 4	Wilbur-Ellis Co.	71368-1-2935	N
	Broadrange 55	Wilbur-Ellis Co.	2217-813-2935	N	
	Agrisolution 2,4-D LV6	Winfield Solutions, LLC	1381-101	N	
	Agrisolution 2,4-D Amine 4	Winfield Solutions, LLC	1381-103	N	
	Agrisolution 2,4-D LV4	Winfield Solutions, LLC	1381-102	N	
Dicamba	AK, AZ, CA, CO, ID, MT, ND,	Dicamba DMA	Albaugh, Inc./Agri Star	42750-40	N
	NE, NM, NV, OK, OR, SD, TX,	Vision	Albaugh, Inc.	42750-98	N
	UT, WA, WY	Cruise Control	Alligare, LLC	42750-40-81927	N
		Banvel	Arysta LifeScience N.A. Corp.	66330-276	Y
		Clarity	BASF Corporation	7969-137	Y

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Dicamba - cont.	AK, AZ, CA, CO, ID, MT, ND,	Vision	Helena Chemical Company	5905-576	Y
	NE, NM, NV, OK, OR, SD, TX,	Rifle	Loveland Products Inc.	34704-861	Y
	UT, WA, WY	Banvel	Micro Flo Company	51036-289	Y
		Diablo	Nufarm Americas Inc.	228-379	Y
		Vanquish Herbicide	Nufarm Americas Inc.	228-397	Y
		Vanquish	Syngenta	100-884	N
		Sterling Blue	Winfield Solutions, LLC	7969-137-1381	Y
Dicamba +	AK, AZ, CA, CO, ID, MT, ND,	Range Star	Albaugh, Inc./Agri Star	42750-55	N
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Weedmaster	BASF Ag. Products	7969-133	Y
	UT, WA, WY	Brush-Rhap	Helena Chemical Company	5905-568	N
		Latigo	Helena Chemical Company	5905-564	N
		Outlaw	Helena Chemical Company	5905-574	N
		Rifle-D	Loveland Products Inc.	34704-869	N
		KambaMaster	Nufarm Americas Inc.	71368-34	N
		Veteran 720	Nufarm Americas Inc.	228-295	Y
		Weedmaster	Nufarm Americas Inc.	71368-34	Y
	Brash	Winfield Solutions, LLC	1381-202	N	
Dicamba +	AZ, CO, ID, MT, ND, NE, NM,	Distinct	BASF Corporation	7969-150	Y
Di flufenzopyr	NV, OK, OR, SD, TX, UT,	Overdrive	BASF Corporation	7969-150	N
	WA, WY				
NOTE: In accordance with the Record of Decision for the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide is prohibited.					
Diquat	AK, AZ, CA, CO, ID, MT, ND,	Alligare Diquat	Alligare, LLC	81927-35	Y
	NE, NM, NV, OK, SD, TX, UT,	NuFarm Diquat SPC 2 L Herbicide	Nufarm Americas Inc.	228-675	N
	WA, WY	Diquat SPC 2 L Herbicide	Nufarm Americas Inc.	79676-75	Y
		Diquat E-Ag 2L	Nufarm Americas Inc.	79676-75	Y
		Reward	Syngena Professional Products	100-1091	Y

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Diuron	AK, AZ, CA, CO, ID, MT, ND,	Diuron 80DF	Agriliance, L.L.C.	9779-318	N
	NE, NM, NV, OK, OR, SD, TX,	Diuron 80DF	Alligare, LLC	81927-12	Y
	UT, WA, WY	Karmex DF	DuPont Crop Protection	352-692	Y
		Karmex XP	DuPont Crop Protection	352-692	Y
		Karmex IWC	DuPont Crop Protection	352-692	Y
		Direx 4L	DuPont Crop Protection	352-678	Y
		Direx 80DF	Griffin Company	1812-362	Y
		Direx 4L	Griffin Company	1812-257	Y
		Diuron 4L	Loveland Products Inc.	34704-854	Y
		Diuron 80 WDG	Loveland Products Inc.	34704-648	N
		Diuron 4L	Makteshim Agan of N.A.	66222-54	N
		Diuron 80WDG	UAP-Platte Chem. Co.	34704-648	N
		Vegetation Man. Diuron 80 DF	Vegetation Man., LLC	66222-51-74477	N
		Diuron-DF	Wilbur-Ellis	00352-00-508-02935	N
		Diuron 80DF	Winfield Solutions, LLC	9779-318	N
Fluridone	AK, AZ, CA, CO, ID, MT, ND,	Avast!	SePRO	67690-30	Y
	NE, NM, NV, OK, OR, SD, TX,	Sonar AS	SePRO	67690-4	Y
	UT, WA, WY	Sonar Precision Release	SePRO	67690-12	Y
		Sonar Q	SePRO	67690-3	Y
		Sonar SRP	SePRO	67690-3	Y
Glyphosate	AK, AZ, CA, CO, ID, MT, ND,	Aqua Star	Albaugh, Inc./Agri Star	42750-59	Y
	NE, NM, NV, OK, OR, SD, TX,	Forest Star	Albaugh, Inc./Agri Star	42570-61	Y
	UT, WA, WY	GlyStar Gold	Albaugh, Inc./Agri Star	42750-61	Y
		Gly Star Original	Albaugh, Inc./Agri Star	42750-60	Y
		Gly Star Plus	Albaugh, Inc./Agri Star	42750-61	Y
		Gly Star Pro	Albaugh, Inc./Agri Star	42750-61	Y
		Glyphosate 4 PLUS	Alligare, LLC	81927-9	Y
		Glyphosate 5.4	Alligare, LLC	81927-8	Y
		Glyfos	Cheminova	4787-31	Y
		Glyfos PRO	Cheminova	67760-57	Y
		Glyfos Aquatic	Cheminova	4787-34	Y

	STATES WITH APPROVAL					
ACTIVE	BASED UPON CURRENT			EPA REG.	CA	
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **	
Glyphosate - cont.	AK, AZ, CA, CO, ID, MT, ND,	ClearOut 41 Plus	Chem. Prod. Tech., LLC	70829-3	N	
	NE, NM, NV, OK, OR, SD, TX,	Accord Concentrate	Dow AgroSciences	62719-324	Y	
	UT, WA, WY	Accord SP	Dow AgroSciences	62719-322	Y	
			Accord XRT	Dow AgroSciences	62719-517	Y
			Accord XRT II	Dow AgroSciences	62719-556	Y
			Glypro	Dow AgroSciences	62719-324	Y
			Glypro Plus	Dow AgroSciences	62719-322	Y
			Rodeo	Dow AgroSciences	62719-324	Y
			Showdown	Helena Chemical Company	71368-25-5905	Y
			Mirage	Loveland Products Inc.	34704-889	Y
			Mirage Plus	Loveland Products Inc.	34704-890	Y
			Aquamaster	Monsanto	524-343	Y
			Roundup Original	Monsanto	524-445	Y
			Roundup Original II	Monsanto	524-454	Y
			Roundup Original II CA	Monsanto	524-475	Y
			Honcho	Monsanto	524-445	Y
			Honcho Plus	Monsanto	524-454	Y
			Roundup PRO	Monsanto	524-475	Y
			Roundup PRO Concentrate	Monsanto	524-529	Y
			Roundup PRO Dry	Monsanto	524-505	Y
			Roundup PROMAX	Monsanto	524-579	Y
			Aqua Neat	Nufarm Americas Inc.	228-365	Y
			Credit Xtreme	Nufarm Americas Inc.	71368-81	Y
			Foresters	Nufarm Americas Inc.	228-381	Y
			Razor	Nufarm Americas Inc.	228-366	Y
			Razor Pro	Nufarm Americas Inc.	228-366	Y
			GlyphoMate 41	PBI/Gordon Corporation	2217-847	Y
			AquaPro Aquatic Herbicide	SePRO Corporation	62719-324-67690	Y
			Rattler	Setre (Helena)	524-445-5905	Y
			Buccaneer	Tenkoz	55467-10	Y
			Buccaneer Plus	Tenkoz	55467-9	Y
		Mirage Herbicide	UAP-Platte Chem. Co.	524-445-34704	Y	
		Mirage Plus Herbicide	UAP-Platte Chem. Co.	524-454-34704	Y	

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Glyphosate - cont.	AK, AZ, CA, CO, ID, MT, ND,	Gly-4 Plus	Universal Crop Protection Alliance, LLC	72693-1	Y
	NE, NM, NV, OK, OR, SD, TX,	Gly-4 Plus	Universal Crop Protection Alliance, LLC	42750-61-72693	Y
	UT, WA, WY	Gly-4	Universal Crop Protection Alliance, LLC	42750-60-72693	Y
		Glyphosate 4	Vegetation Man., LLC	73220-6-74477	Y
		Agrisolutions Cornerstone	Winfield Solutions, LLC	1381-191	Y
		Agrisolutions Cornerstone Plus	Winfield Solutions, LLC	1381-192	Y
		Agrisolutions Rascal	Winfield Solutions, LLC	1381-191	N
		Agrisolutions Rascal Plus	Winfield Solutions, LLC	1381-192	N
Glyphosate + 2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Landmaster BW	Albaugh, Inc./Agri Star	42570-62	N
	NE, NM, NV, OK, OR, SD, TX,	Campaign	Monsanto	524-351	N
	UT, WA, WY	Landmaster BW	Monsanto	524-351	N
Hexazinone	AK, AZ, CA, CO, ID, MT, ND,	Velpar ULW	DuPont Crop Protection	352-450	N
	NE, NM, NV, OK, OR, SD, TX,	Velpar L	DuPont Crop Protection	352-392	Y
	UT, WA, WY	Velpar DF	DuPont Crop Protection	352-581	Y
		Velossa	Helena Chemical Company	5905-579	Y
		Pronone MG	Pro-Serve	33560-21	N
		Pronone 10G	Pro-Serve	33560-21	Y
		Pronone 25G	Pro-Serve	33560-45	N
Hexazinone +	AK, AZ, CA, CO, ID, MT, ND, NE,	Westar	DuPont Crop Protection	352-626	Y
Sulfometuron methyl	NM, NV, OK, OR, SD, TX, UT,	Oustar	DuPont Crop Protection	352-603	Y
	WA, WY				
NOTE: In accordance with the Record of Decision for the <i>Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS)</i>, the aerial application of these herbicides is prohibited.					
Imazapic	AZ, CO, ID, MT, ND, NE, NM,	Panoramic 2SL	Alligare, LLC	66222-141-81927	N
	NV, OK, OR, SD, TX, UT, WA,	Plateau	BASF	241-365	N
	WY				
Imazapic +	AZ, CO, ID, MT, ND, NE, NM,	Journey	BASF	241-417	N
Glyphosate	NV, OK, OR, SD, TX, UT, WA,				
	WY				

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Imazapyr	AK, AZ, CA, CO, ID, MT, ND,	Imazapyr 2SL	Alligare, LLC	81927-23	N
	OR, NE, NM, NV, OK, SD, TX,	Imazapyr 4SL	Alligare, LLC	81927-24	N
	UT, WA, WY	Ecomazapyr 2SL	Alligare, LLC	81927-22	N
		Arsenal Railroad Herbicide	BASF	241-273	N
		Chopper	BASF	241-296	Y
		Arsenal Applicators Conc.	BASF	241-299	N
		Arsenal	BASF	241-346	N
		Arsenal PowerLine	BASF	241-431	N
		Stalker	BASF	241-398	N
		Habitat	BASF	241-426	Y
		Polaris	Nufarm Americas Inc.	228-534	Y
		Polaris AC	Nufarm Americas Inc.	241-299-228	Y
		Polaris AC	Nufarm Americas Inc.	228-480	Y
		Polaris AQ	Nufarm Americas Inc.	241-426-228	Y
		Polaris RR	Nufarm Americas Inc.	241-273-228	N
		Polaris SP	Nufarm Americas Inc.	228-536	Y
		Polaris SP	Nufarm Americas Inc.	241-296-228	Y
		Polaris Herbicide	Nufarm Americas Inc.	241-346-228	N
		Habitat Herbicide	SePRO	241-426-67690	Y
		SSI Maxim Arsenal 0.5G	SSI Maxim Co., Inc.	34913-23	N
	Ecomazapyr 2 SL	Vegetation Man., LLC	74477-6	N	
	Imazapyr 2 SL	Vegetation Man., LLC	74477-4	N	
	Imazapyr 4 SL	Vegetation Man., LLC	74477-5	N	
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Mojave 70 EG	Alligare, LLC	74477-9-81927	N
Diuron	OR, NE, NM, NV, OK, SD, TX,	Sahara DG	BASF	241-372	N
	UT, WA, WY	Imazuron E-Pro	Etigra, LLC	79676-54	N
		SSI Maxim Topsite 2.5G	SSI Maxim Co., Inc.	34913-22	N
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Lineage Clearstand	DuPont Crop Protection	352-766	N
Metsulfuron methyl	OR, NE, NM, NV, OK, SD, TX,				
	UT, WA, WY				

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Lineage HWC	DuPont Crop Protection	352-765	N
Sulfometuron methyl +	OR, NE, NM, NV, OK, SD, TX,	Lineage Prep	DuPont Crop Protection	352-767	N
Metsulfuron methyl	UT, WA, WY				
NOTE: In accordance with the Record of Decision for the <i>Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS)</i>, the aerial application of these herbicides is prohibited.					
Metsulfuron methyl	AK, AZ, CO, ID, MT, ND, OR,	MSM 60	Alligare, LLC	81927-7	N
	NE, NM, NV, OK, SD, TX, UT,	AmTide MSM 60DF Herbicide	AmTide, LLC	83851-3	N
	WA, WY	Escort DF	DuPont Crop Protection	352-439	N
		Escort XP	DuPont Crop Protection	352-439	N
		MSM E-Pro 60 EG Herbicide	Etigra, LLC	81959-14	N
		MSM E-AG 60 EG Herbicide	Etigra, LLC	81959-14	N
		Patriot	Nufarm Americas Inc.	228-391	N
		PureStand	Nufarm Americas Inc.	71368-38	N
		Metsulfuron Methyl DF	Vegetation Man., L.L.C.	74477-2	N
Metsulfuron methyl +	AK, AZ, CO, ID, MT, ND,	Cimarron Extra	DuPont Crop Protection	352-669	N
Chlorsulfuron	NE, NM, NV, OK, OR-East, SD,	Cimarron Plus	DuPont Crop Protection	352-670	N
	TX, UT, WA, WY				
Metsulfuron methyl +	AK, AZ, CO, ID, MT, ND,	Cimarron MAX	DuPont Crop Protection	352-615	N
Dicamba + 2,4-D	NE, NM, NV, OK, OR, SD, TX,				
	UT, WA, WY				
Picloram	AZ, CO, ID, MT, ND, NE, NM,	Triumph K	Albaugh, Inc.	42750-81	N
	NV, OK, OR, SD, TX, UT, WA,	Triumph 22K	Albaugh, Inc.	42750-79	N
	WY	Picloram K	Alligare, LLC	42750-81-81927	N
		Picloram K	Alligare, LLC	81927-17	N
		Picloram 22K	Alligare, LLC	42750-79-81927	N
		Picloram 22K	Alligare, LLC	81927-18	N
		Grazon PC	Dow AgroSciences	62719-181	N

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Picloram - cont.	AZ, CO, ID, MT, ND, NE, NM,	OutPost 22K	Dow AgroSciences	62719-6	N
	NV, OK, OR, SD, TX, UT, WA,	Tordon K	Dow AgroSciences	62719-17	N
	WY	Tordon 22K	Dow AgroSciences	62719-6	N
		Trooper 22K	Nufarm Americas Inc.	228-535	N
Picloram + 2,4-D	AZ, CO, ID, MT, ND, NE, NM,	GunSlinger	Albaugh, Inc.	42750-80	N
	NV, OK, OR, SD, TX, UT, WA,	Picloram + D	Alligare, LLC	42750-80-81927	N
	WY	Picloram + D	Alligare, LLC	81927-16	N
		Tordon 101M	Dow AgroSciences	62719-5	N
		Tordon 101 R Forestry	Dow AgroSciences	62719-31	N
		Tordon RTU	Dow AgroSciences	62719-31	N
		Grazon P+D	Dow AgroSciences	62719-182	N
		HiredHand P+D	Dow AgroSciences	62719-182	N
		Pathway	Dow AgroSciences	62719-31	N
		Trooper 101	Nufarm Americas Inc.	228-561	N
	Trooper P + D	Nufarm Americas Inc.	228-530	N	
Picloram + 2,4-D + Dicamba	AZ, CO, ID, MT, ND, NE, NM,	Trooper Extra	Nufarm Americas Inc.	228-586	N
	NV, OK, OR, SD, TX, UT, WA,				
	WY				
Sulfometuron methyl	AK, AZ, CA, CO, ID, MT, ND,	SFM 75	Alligare, LLC	81927-26	Y
	OR, NE, NM, NV, OK, SD, TX,	Oust DF	DuPont Crop Protection	352-401	N
	UT, WA, WY	Oust XP	DuPont Crop Protection	352-601	Y
		SFM E-Pro 75EG	Etigra, LLC	79676-16	Y
		Spyder	Nufarm Americas Inc.	228-408	Y
		SFM 75	Vegetation Man., L.L.C.	72167-11-74477	Y
NOTE: In accordance with the Record of Decision for the <i>Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS)</i>, the aerial application of these herbicides is prohibited.					

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Sulfometuron methyl +	AK, AZ, CA, CO, ID, MT, ND,	Landmark XP	DuPont Crop Protection	352-645	Y
Chlorsulfuron	NE, NM, NV, OK, OR-East, SD, TX, UT, WA, WY				
NOTE: In accordance with the Record of Decision for the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide is prohibited.					
Sulfometuron methyl +	AK, AZ, CA, CO, ID, MT, ND,	Oust Extra	DuPont Crop Protection	352-622	N
Metsulfuron methyl	OR, NE, NM, NV, OK, SD, TX, UT, WA, WY				
NOTE: In accordance with the Record of Decision for the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide is prohibited.					
Tebuthiuron	AZ, CA, CO, ID, MT, ND, NE, NM, NV, OK, OR-East, SD, TX, UT, WA, WY	Alligare Tebuthiuron 80 WG Alligare Tebuthiuron 20 P Spike 20P Spike 80DF SpraKil S-5 Granules	Alligare, LLC Alligare, LLC Dow AgroSciences Dow AgroSciences SSI Maxim Co., Inc.	81927-37 81927-41 62719-121 62719-107 34913-10	Y Y Y Y Y
Tebuthiuron +	AZ, CA, CO, ID, MT, ND, NE,	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15	Y
Diuron	NM, NV, OK, OR-East, SD, TX, UT, WA, WY	SpraKil SK-26 Granular	SSI Maxim Co., Inc.	34913-16	Y
Triclopyr	AK, AZ, CA, CO, ID, MT, ND, OR, NE, NM, NV, OK, SD, TX, UT, WA, WY	Triclopyr 4EC Triclopyr 3 Triclopyr 4 Element 3A Element 4 Forestry Garlon XRT Garlon 3A Garlon 4 Garlon 4 Ultra	Alligare, LLC Alligare, LLC Alligare, LLC Dow AgroSciences Dow AgroSciences Dow AgroSciences Dow AgroSciences Dow AgroSciences Dow AgroSciences	72167-53-74477 81927-13 81927-11 62719-37 62719-40 62719-553 62719-37 62719-40 62719-527	Y Y Y Y Y Y Y Y Y

	STATES WITH APPROVAL				
ACTIVE	BASED UPON CURRENT			EPA REG.	CA
INGREDIENT	EIS/ROD	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Triclopyr - cont.	AK, AZ, CA, CO, ID, MT, ND,	Remedy	Dow AgroSciences	62719-70	Y
	OR, NE, NM, NV, OK, SD, TX,	Remedy Ultra	Dow AgroSciences	62719-552	Y
	UT, WA, WY	Pathfinder II	Dow AgroSciences	62719-176	Y
		Trycera	Helena Chemical Company	5905-580	Y
		Relegate	Nufarm Americas Inc.	228-521	Y
		Relegate RTU	Nufarm Americas Inc.	228-522	Y
		Tahoe 3A	Nufarm Americas Inc.	228-384	Y
		Tahoe 3A	Nufarm Americas Inc.	228-518	Y
		Tahoe 3A	Nufarm Americas Inc.	228-520	Y
		Tahoe 4E	Nufarm Americas Inc.	228-385	Y
		Tahoe 4E Herbicide	Nufarm Americas Inc.	228-517	Y
		Renovate 3	SePRO Corporation	62719-37-67690	Y
		Renovate OTF	SePRO Corporation	67690-42	Y
		Ecotriclopyr 3 SL	Vegetation Man., LLC	72167-49-74477	N
		Triclopyr 3 SL	Vegetation Man., LLC	72167-53-74477	N
Triclopyr + 2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Everett	Alligare, LLC	81927-29	Y
	OR, NE, NM, NV, OK, SD, TX,	Crossbow	Dow AgroSciences	62719-260	Y
	UT, WA, WY	Candor	Nufarm Americas Inc.	228-565	Y
		Aquasweep	Nufarm Americas Inc.	228-316	N
Triclopyr +	AK, AZ, CA, CO, ID, MT, ND,	Prescott Herbicide	Alligare, LLC	81927-30	Y
Clopyralid	OR, NE, NM, NV, OK, SD, TX,	Redeem R&P	Dow AgroSciences	62719-337	Y
	UT, WA, WY	Brazen	Nufarm Americas Inc.	228-564	Y
* Refer to the complete label prior to considering the use of any herbicide formulation. Label changes can impact the intended use through, such things as, creation or elimination of Special Local Need (SLN) or 24 (c) registrations, changes in application sites, rates and timing of application, county restrictions, etc.					
** Just because a herbicide has a Federal registration, and is approved under the current EIS, it may or may not be registered for use in California. This					
column identifies those formulations for which there is a California registration.					

Appendix E

Plateau® Herbicide

Plateau® Label.....	E-1
Plateau® Safety Data Sheet	E-16
Plateau® Pesticide Application Report/Treatment Form	E-24
Risk Management Worksheet.....	E-25

SPECIMEN

PLATEAU®

herbicide

0.1875 Lbs of AE/acre

FOR WEED CONTROL, NATIVE GRASS ESTABLISHMENT AND TURF GROWTH SUPPRESSION ON PASTURES, RANGELAND AND NONCROP AREAS AND CONIFER PLANTATION SITE PREPARATION

Active Ingredient:

Ammonium salt of imazapic (±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid* 23.6%

Other Ingredients: 76.4%

Total: 100.0%

*Equivalent to 22.2% (±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-methyl-3-pyridinecarboxylic acid (1 gallon contains 2.0 pounds of active ingredient as the free acid)

EPA Reg. No. 241-365
U.S. Patent No. 4,798,619

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUCION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions for Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

Caution - Warning - Danger

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

BASF
The Chemical Company

FIRST AID	
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center for treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear:

- Long-sleeve shirt and long pants
- Chemical-resistant gloves made of waterproof material
- shoes plus socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations:

Users Should:

- Wash hands before eating, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial use only. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

DO NOT contaminate water when disposing of equipment wash-waters or rinsate.

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination.

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow watertables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

IMPORTANT

Plateau® herbicide may be applied to non-irrigation ditches and low lying areas when water has drained, but may be isolated in pockets due to uneven or unlevel conditions. **DO NOT** treat the inside of irrigation ditches. **DO NOT** rinse equipment on or near desirable trees or ornamental plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. **DO NOT** use on residential lawns.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

This labeling must be in the possession of the user at the time of pesticide application.

DO NOT use **Plateau** on food or feed crops except as recommended by this label or supplemental labeling.

DO NOT cut treated area for hay within seven days after treatment.

DO NOT use organophosphate insecticides on newly seeded areas treated with **Plateau** unless severe injury or loss of stand can be tolerated.

Observe all cautions and limitations on this label and on the labels of products used in combination with **Plateau**. **DO NOT** use **Plateau** other than in accordance with the instructions set forth on this label. The use of **Plateau** not consistent with this label may result in injury to desired vegetation. Keep containers closed to avoid spills and contamination.

When making new plantings of prairiegrass or wildflowers, carry-over from persistent herbicides such as sulfonfyl-urea, imidazolinone, triazine, substituted urea, dinitroaniline, and other herbicides applied the previous year may result in compounded injury or death of desirable vegetation when treated with **Plateau**.

When making applications around desirable trees or ornamental plants, small areas should be tested to determine the tolerance of a particular species to soil and/or foliar applications of **Plateau**. See "TOLERANCE OF TREES AND BRUSH TO **PLATEAU** HERBICIDE" section of this label.

DO NOT apply this product through any type of irrigation system.

DO NOT exceed 12 ounces of **Plateau** per acre in one year.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- coveralls
- chemical-resistant gloves made of any waterproof material
- shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Noncrop weed control is not within the scope of the Worker Protection Standard. See the GENERAL INFORMATION section of this label for a description of noncrop sites.

DO NOT enter treated areas without protective clothing until sprays have dried.

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: KEEP FROM FREEZING. **DO NOT** store below 20°F.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

In Case of Spill

In case of large-scale spillage regarding this product, call:
CHEMTREC 1-800-424-9300
BASF Corporation 1-800-832-HELP (4357)

GENERAL INFORMATION

Plateau® herbicide is an aqueous solution to be mixed with water and an adjuvant and applied as a spray solution to provide weed control and/or turf height suppression on pastures, rangeland (see "GUIDELINES FOR RANGELAND USE" section), Federal Conservation Reserve Program (CRP) land and noncropland areas including noncropland areas that may be grazed or cut for hay. Examples of noncropland areas include, but are not limited to railroad, utility, pipeline and highway rights-of-way, railroad crossings, utility plant sites, petroleum tank farms, pumping installations, non-agricultural fence rows, storage areas, non-irrigation ditchbanks, prairie sites, airports, industrial turf, golf courses, recreational and non-residential turf and other similar areas. **Plateau** may be used for the release of bermudagrass, bahiagrass, smooth brome grass, wheatgrass, "wildtype" common Kentucky bluegrass, native prairiegrass, wildflowers, crown vetch, other grasses and certain legumes. **Plateau** can also be used for weed control during the establishment of native prairiegrasses and other grasses (see "REVEGETATION WITH PRAIRIEGRASSES AND OTHER FORAGE GRASSES" section). **Plateau** may also be used for conifer plantation site preparation.

Plateau is readily absorbed through leaves, stems, and roots and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground storage organs which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species for several weeks after application. Complete kill of plants may not occur for several weeks after application. Adequate soil moisture is important for optimum **Plateau** activity. When adequate soil moisture is present, **Plateau** will provide residual control of susceptible germinating weeds. Activity on established weeds will depend on the weed species and rooting depth. **Plateau** is rainfast one hour after application.

Plateau will control annual and perennial grasses and broadleaf weeds and vine species. **Plateau** will provide residual control of labeled weeds which germinate in the treated area. Certain brush species and ornamentals may be injured by direct application of **Plateau** to their foliage. This product may be applied either preemergence or postemergence to the weeds. However, postemergence application is the method of choice in most situations, particularly for perennial species. For maximum activity, weeds should be growing vigorously at the time of postemergence applications and the spray solution should include an adjuvant (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section). These solutions may be applied as a broadcast or as a spot treatment using backpack, or ground equipment.

Plateau may be applied in the dormant or growing season for weed control.

Tolerance of desirable grass species to **Plateau** may be reduced when grasses are stressed due to insect damage, disease, environmental conditions, shade, poorly drained soils or other causes.

Depending on the turf type being treated, some yellowing of turf may occur with applications during the growing season. Depending on weather conditions, yellowing will usually disappear in 2 to 4 weeks.

Plateau should not be applied to newly seeded or sprigged grass stands, unless otherwise stated in this label (see "REVEGETATION WITH PRAIRIEGRASSES AND OTHER FORAGE GRASSES" section).

MANAGING OFF-TARGET MOVEMENT

Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

Spray drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this

wind meter

product when the potential for drift to these and other adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal. **DO NOT** apply when the following conditions exist that increase the likelihood of spray drift from intended targets: high or gusty winds, high temperatures, low humidity, temperature inversions.

To minimize spray drift, the applicator should be familiar with and take into account the following drift reduction advisory information. Additional information may be available from state enforcement agencies or the Cooperative Extension on the application of this product.

The best drift management strategy and most effective way to reduce drift potential are to apply large droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity and Temperature Inversions**).

Controlling Droplet Size:

spray/stream
-Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

-Pressure **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

-Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage.

-Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.

-Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift. **DO NOT** use nozzles producing a mist droplet spray.

Application Height: Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe and practical reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

Wind: Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind

conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Wind Erosion: Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Aerial Application Methods and Equipment: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising aircraft safety, applications should be made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Ground Application (Broadcast): Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

MIXING INSTRUCTIONS

Fill the spray tank one-half to three-quarters full with clean water. Use a calibrated measuring device to measure the required amount of **Plateau® herbicide**. Add **Plateau** to the spray tank while agitating. Fill the remainder of the tank with water.

For postemergence applications, add a surfactant to the spray tank (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section of this label for specific recommendations). Maintain agitation while spraying to ensure a uniform spray mixture. An antifoaming agent may be added to the tank if needed.

When tank-mixing **Plateau** with recommended herbicides, add wettable powders, dispersible granules or other dry formulations first, then EC's, then **Plateau**, and then an adjuvant.

SPRAYING INSTRUCTIONS

DO NOT apply during windy or gusty conditions unless applications are being made with a drift control agent and/or an enclosed or shielded spray system. **DO NOT** apply if rainfall is threatening. Rainfall within 1 hour after **Plateau** application may reduce weed control.

GROUND APPLICATIONS:

Uniformly apply with properly calibrated ground equipment in 2 or more gallons of water per acre. Application equipment, specially designed to make low volume application should be used when making applications using less than 10 gallons of water per acre. A spray pressure of 20 to 40 psi is recommended.

To achieve acceptable control of the target vegetation, good spray coverage of the weed foliage (postemergence) or soil surface (preemergence) is required. To achieve good spray coverage the sprayer must be calibrated to deliver the recommended spray volume and pressure and adjust the spray boom height to ensure proper coverage of weed foliage or soil surface (according to the manufacturer's recommendation). Avoid overlaps when spraying.

SPOT TREATMENTS:

To prepare the spray solution, thoroughly mix in water 0.25 to 1.5% (0.3 to 1.9 oz/gallon water) **Plateau** plus an adjuvant (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section). A methylated seed oil at 1% v/v is the recommended spray adjuvant except when treating seedling prairiegrasses and wildflowers. When making spot applications, spray coverage should be sufficient to moisten the leaves of the target vegetation, but not to the point of run-off. See section on desired species and **DO NOT** exceed the recommended **Plateau** rate per acre. Also see "WEEDS CONTROLLED" and "SPECIAL WEED CONTROL" sections for specific rate and/or tank-mix recommendations.

1/2 oz surfactant/dye

AERIAL APPLICATION:

All precautions should be taken to minimize or eliminate spray drift. Fixed wing aircraft and helicopters can be used to apply **Plateau**[®] herbicide, however, when making applications by fixed wing aircraft maintain appropriate buffer zones to prevent spray drift out of the target area. Aerial equipment designed to minimize spray drift such as a helicopter equipped with a MICROFOIL™ boom, or THRU-VALVE™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a MICROFOIL boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or under any other conditions that promote spray drift.

Uniformly apply recommended amount of **Plateau**, using enough water volume to provide adequate coverage of target area or foliage. Include an adjuvant in the spray solution (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section). A foam reducing agent may be added at the recommended rate, if needed. Aerial application to target species growing under the canopy of trees and brush may not receive sufficient spray coverage for effective control. For weed species with a recommended fall application timing (see "SPECIAL WEED CONTROL" section), delaying the aerial application until trees and brush have dropped their leaves can improve weed control and reduce the potential for tree and brush injury (see "TOLERANCE OF TREES AND BRUSH TO PLATEAU HERBICIDE" section).

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

Avoid overlaps when spraying.

SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS

Postemergence applications of **Plateau** require a spray adjuvant. See "SPECIAL WEED CONTROL" section. Due to variations in surfactant contents, certain surfactants containing high amounts of alcohols, paraffin based petroleum oils, and other compounds which can increase phytotoxicity to desirable vegetation, it is recommended to choose a low phytotoxic surfactant.

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated vegetable-based seed oil concentrate containing 5 to 20% surfactant and the remainder methylated vegetable oil is the preferred adjuvant for use with **Plateau** and may be used at the rate of 1.5 to 2 pints per acre. Methylated seed oils provide their greatest effects at 30 GPA or less. At spray volumes above 50 GPA, their advantage appears negated. When using spray volumes greater than 30 gallons per acre methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume or alternatively use a nonionic surfactant as described below. Research indicates these oils may aid in deposition and uptake of **Plateau** for hard-to-control perennials, waxy leaf species or when plants are under moisture or temperature stress. **DO NOT** use a methylated seed oil or vegetable oil concentrate when making applications to newly emerged seedling prairiegrasses or wildflowers as injury may occur.

Nonionic Surfactants: Use a nonionic surfactant at the rate of 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 and having at least 60% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Silicone-Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake and higher spray volumes may exhibit "run-off".

Fertilizer/Surfactant Blends: Nitrogen-based liquid fertilizers such as 28%N, 32%N, 10-34-0, or ammonium sulfate, may be added at the rate of 2 to 3 pints per acre in combination with the

recommended rate of nonionic surfactant or methylated seed oil. Research indicates that nitrogen based fertilizers aid in the burndown of annual weeds and increase **Plateau** uptake through waxy leaf species. However, fertilizers may increase phytotoxicity to desired species and newly emerged seedling prairiegrasses and wildflowers. The use of liquid fertilizers at a rate of 2 to 3 pints per acre in a tank-mix without a nonionic surfactant or a methylated seed oil is not recommended and may result in herbicide failure. Only when liquid fertilizer is used as the spray carrier is no additional spray adjuvant required.

TANK MIXES

For use in noncrop areas, **Plateau** may be tank-mixed with PENDULUM[®] herbicide for additional control of late season annual grasses and certain broadleaves. For additional weed control in noncrop areas, **Plateau** may be tank-mixed with ACCORD[®], ROUNDUP[®] PRO, glyphosate, ARSENAL[®] herbicide, SAHARA[®] DG herbicide, diuron, CAMPAIGN[®], FINALE[®], GARLON[™] 3A, MSMA, VANQUISH[®], OUST[®], ESCORT[®], TORDON[®], or other labeled products. A compatibility test is advised for products not listed. 2,4-D and other phenoxy type herbicides have resulted in reduced control of perennial grass weeds.

DO NOT tank mix with organophosphate insecticides or use the same year as **Plateau** when making applications to newly planted areas.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

FOR WEED CONTROL IN PASTURE AND RANGELAND

For the control of undesirable weeds in pasture and rangeland (see "GUIDELINES FOR RANGELAND USE" section), apply **Plateau** at 2 to 12 oz. per acre as a broadcast treatment or as a 0.25% to 1% solution with 1.0% MSO for spot treatments. See appropriate sections of this label for specific use directions.

GUIDELINES FOR RANGELAND USE

Plateau may be applied to rangeland for the control of undesirable vegetation in order to achieve one or more of the following vegetation management objectives:

1. The control of undesirable (non-native, invasive and noxious) plant species.
2. The control of undesirable vegetation in order to aid in the establishment of desirable rangeland plant species.
3. The control of undesirable vegetation in order to aid in the establishment of desirable rangeland vegetation following a fire.
4. The control of undesirable vegetation for purposes of wildfire fuel reduction.
5. The release of existing desirable rangeland plant communities from the competitive pressure of undesirable plant species.
6. The control of undesirable vegetation for purposes of wildlife habitat improvement.

To ensure the protection of threatened and endangered plants when applying **Plateau** to rangeland:

1. Federal agencies must follow NEPA regulations to ensure protection of threatened and endangered plants.
2. State agencies must work with the Fish and Wildlife Service or the Service's designated state conservation agency to ensure protection of threatened and endangered plants.
3. Other organizations or individuals must operate under a Habitat Conservation Plan if threatened or endangered plants are known to be present on the land to be treated.

Please see the appropriate section(s) of this label for specific use directions for the desired rangeland vegetation management objective.

Plateau should only be applied to a given rangeland acre as specific weed problems arise. For the control of annual weed species such as cheatgrass, downy brome and medusahead rye, a single application of **Plateau** that coincides with the successful establishment and/or release of desirable rangeland vegetation and the use of available IPM can provide effective, sustainable control of the annual weed problem. For difficult to control perennial weed

species such as leafy spurge, dalmatian toadflax and Russian knapweed, a single broadcast application of **Plateau® herbicide** should be effective in most cases. If needed, spot treatments with **Plateau** can be used to control any remnant plants or new seedlings that may emerge. Long term control of undesirable weed species ultimately depends on the successful use of land management practices that promote the growth and sustainability of desirable rangeland plant species.

USE OF PLATEAU HERBICIDE ON FEDERAL CONSERVATION RESERVE PROGRAM (CRP) LAND

Plateau may be used on Federal Conservation Reserve Program (CRP) land at rates up to 12 oz. per acre per year (see minimum plant-back intervals below). See appropriate section of this label for specific instructions for the intended use.

ROTATIONAL CROP RESTRICTIONS

The following rotational crops may be planted after applying **Plateau**. Planting rotational crops earlier than the recommended interval may result in crop injury.

Plateau Use Rate (oz/A)	Minimum Plant Back Interval (Months After Plateau Herbicide Application)				
	≤4	12	18	26	40
5-8	12	14	22	30	44
9-12	12	18	24	36	48

Rotational Crops	Bahiagrass CLEARFIELD®	Snapbeans Southern peas	Barley Cotton ¹ Grain	Field corn ² All crops not otherwise listed or included for use on this Sugar label ²	Canola ² Potatoes ² Red table beets ²
	corn hybrids	Soybeans	sorghum		
	Peanuts	Tobacco	Oats		
	Rye				
	Wheat				

¹ For Arizona, New Mexico, Oklahoma, and Texas only: Depending on the **Plateau** use rate, cotton may be planted 18 to 24 months after **Plateau** application in the states of Arizona, New Mexico, Oklahoma, and Texas unless drought conditions develop the year of **Plateau** application. **DO NOT** rotate to cotton at 18 to 24 months after **Plateau** application if less than 15 inches of rainfall or irrigation is received from the time of **Plateau** application through November 1 of the same year. If drought conditions develop the year of **Plateau** application, cotton may be planted 26, 30 and 40 months after **Plateau** application.

² After the recommended rotational interval listed for these selected crops and for all crops not otherwise listed or included for use on this label, a successful field bioassay must be completed. The field bioassay consists of a test strip of the intended rotational crop planted across the previously treated field and grown to maturity. The test strip should include low areas and knolls, and include variations in soil such as type and pH. If no crop injury is evident in the test strip, then the intended rotational crop may be planted the following year.

Use of **Plateau** in accordance with label directions is expected to result in normal growth of plant-back crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, plant-back crop injury is always possible. If crop injury is a concern then a bioassay with the desired crop is recommended prior to planting.

FOR FOLIAR AND SEEDHEAD SUPPRESSION OF BAHIAGRASS, COOL SEASON GRASSES AND SUPPRESSION OF SOME ANNUAL WEEDS

Bahiagrass: **Plateau** may be used at the rate of 2 to 6 oz per acre to suppress growth and seedhead development of bahiagrass in unimproved areas. In North and South Carolina it is recommended to use **Plateau** at the rate of 2 oz or 3 oz per acre respectively, as higher rates may cause turf thinning. Depending on rate of **Plateau** used, surfactant and environmental conditions, temporary turf discoloration may occur. For optimum performance, application should be made after green-up. Applications may be made before or after mowing. If applied prior to mowing, raise mowing height to leave adequate existing foliage as new growth will be suppressed. If applied after mowing, allow adequate foliage to remain by increasing mower height or allowing time for foliar regrowth prior to

application. **DO NOT** apply to turf under stress (drought, cold, insect, disease, etc.) or severe injury may occur. **DO NOT** use a methylated seed oil adjuvant.

PLATEAU	PHYTOTOXICITY	LENGTH OF SUPPRESSION
2 oz	none to low	partial to season long
3 to 6 oz	low to moderate	season long

For winter annual weed control, apply 8 oz of **Plateau** when bahiagrass is dormant, but when weeds are actively growing. This can be followed by 3 to 4 oz of **Plateau** in the spring after bahiagrass green-up for the suppression of seedheads and foliage.

Cool Season Grasses:

KY31 Tall Fescue and "Wildtype Common" Kentucky Bluegrass: Apply **Plateau** at 2 to 4 oz per acre for foliar and seedhead suppression of certain cool season grasses such as "KY31" tall fescue and "wildtype common" Kentucky bluegrass. **DO NOT** use a methylated seed oil adjuvant. Add a surfactant to the 2 oz rate of **Plateau** for optimum performance. The addition of a surfactant to 4 oz of **Plateau** may cause excessive turf injury or mortality of tall fescue. Application to turf type tall fescue or Kentucky bluegrass may result in severe injury or loss of stand.

Wheatgrass: Apply **Plateau** at 6 to 10 oz. per acre for foliar and seedhead suppression of crested wheatgrass, and 6 to 12 oz. per acre for foliar and seedhead suppression of intermediate wheatgrass. Other wheatgrass species may also be suppressed, however, apply **Plateau** to a limited area to determine effectiveness. Tank-mixes with 2,4-D or products containing 2,4-D may decrease the effectiveness of **Plateau**. Tank-mixes with GARLON®, TORDON®, TRANSLINE™ and VANQUISH® may decrease the potential of turf injury. **DO NOT** apply to turf under stress or severe injury may occur.

FOR THE CONTROL OF UNDESIRABLE WEEDS IN BERMUDAGRASS NOT BEING GROWN FOR FORAGE OR HAY

Plateau may be used on bermudagrass turf such as roadsides, utility rights-of-way, railroad crossings, airports, non-irrigation drainage ditches and other noncropland sites. There is a differential tolerance between bermudagrass types (see below paragraphs). Depending on bermudagrass type, timing of application, and **Plateau** rate, some foliar, stolon, and seedhead suppression may occur. **IMPORTANT:** Apply **Plateau** after bermudagrass has reached full green-up. Spring applications made prior to full green-up may delay green-up. Always add a surfactant when applying **Plateau**. **DO NOT** apply to grass under stress from drought, disease, insects or other causes. Simultaneous mow/spray operations may suppress internode development. After mowing, allow adequate foliage regrowth prior to **Plateau** application as some internode suppression may prevent bermudagrass from quickly recovering from mowing.

Common Bermudagrass: Common bermudagrass is the most tolerant bermudagrass to **Plateau**. Tank-mixes with ROUNDUP PRO, ACCORD or glyphosate will improve the weed control spectrum, but may increase turf phytotoxicity. Some stolon internode shortening and seedhead suppression may occur for the first 8 weeks.

Established Coastal Bermudagrass: **Plateau** at 2 to 12 oz per acre will provide control of labeled weeds as well as foliar and seed head suppression of established coastal bermudagrass. **DO NOT** use on World Feeder varieties of bermudagrass. Depending on environmental conditions and weed pressure, the longevity of suppression and weed control increases as the **Plateau** rate increases. Tank-mixes with ROUNDUP PRO, ACCORD, or glyphosate may result in death or excessive injury of coastal bermudagrass.

Turf Type Bermudagrass: Turf type bermudagrass varieties show a high degree of variation in tolerance to **Plateau**. **Plateau** at rates of 2 to 6 oz per acre will provide some annual weed control and foliar & seedhead suppression. Rates above 6 oz per acre may result in excessive injury or death of turf type bermudagrass.

SEE ABOVE SECTIONS FOR PLATEAU® HERBICIDE RATES AND TIMINGS FOR SPECIFIC BERMUDAGRASS TYPES WITH REGARD TO WEED CONTROL AND TURF TOLERANCE.

Winter Annual Weed Control: Apply **Plateau** at the rate of 4 to 12 oz. per acre prior to winter weed germination or while winter weeds are actively growing. Early spring applications may delay green-up of bermudagrass turf.

Summer Annual Weeds: For best results, apply **Plateau** at the rate of 4 to 12 oz per acre preemergence or early postemergence before weeds have reached 6 inches in height. Larger weeds may be controlled depending on susceptibility, growing conditions, tank-mix partner and adjuvant selection.

Perennial Weeds: Apply **Plateau** at the rate of 8 to 12 oz per acre postemergence after weeds have produced adequate foliage for herbicide uptake. For a particular weed see "SPECIAL WEED CONTROL" section below. The addition of ACCORD or ROUNDUP PRO herbicide may increase control.

Bahiagrass Control: Apply **Plateau** at the rate of 8 to 12 oz per acre postemergence. See "SPECIAL WEED CONTROL" section below for recommendations. The addition of ROUNDUP PRO or ACCORD herbicide at 12 to 16 oz per acre may increase control.

FOR THE CONTROL OF UNDESIRABLE WEEDS IN UNIMPROVED CENTIPEDE GRASS

Plateau may be applied at a rate of 4 to 8 oz per acre to established centipede grass for the control of annual broadleaf and grass weeds. Apply **Plateau** after centipede grass has reached full green-up. Spring applications made prior to full green-up may delay green-up. Always add a surfactant when applying **Plateau**.

DO NOT apply to grass under stress from drought, disease, insects or other causes. Simultaneous mow/spray operations may suppress internode development. After mowing, allow adequate foliage regrowth prior to **Plateau** application as some internode suppression may prevent centipede grass from quickly recovering from mowing.

FOR CONTROL OF UNDESIRABLE WEEDS IN SMOOTH BROMEGRASS, WILDTYPE COMMON KENTUCKY BLUEGRASS AND WHEATGRASSES

Plateau may be used on smooth brome grass, "wildtype" common Kentucky bluegrass and wheatgrass. **Plateau** provides control of labeled grass and broadleaf weeds (see "WEEDS CONTROLLED" and "SPECIAL WEED CONTROL" sections). Treatment of smooth brome grass and wheatgrass with **Plateau** may result in foliar height and seedhead suppression.

Smooth Brome grass and "Wildtype" Common Kentucky Bluegrass: Use **Plateau** at 4 to 8 oz per acre in the spring for weed control and growth suppression after smooth brome grass and "wildtype" common Kentucky bluegrass have reached 100% green-up. Applications prior to 100% green-up may delay green-up. Rates from 8 to 12 oz per acre may be applied in the spring but may result in excessive growth suppression. For fall applications (see "SPECIAL WEED CONTROL" section), **Plateau** may be used at 8 to 12 oz per acre for control of perennial weeds.

Wheatgrass: To control undesirable weeds in wheatgrasses apply **Plateau** at 4 to 12 oz. per acre.

FOR CONTROL OF UNDESIRABLE WEEDS IN CROWN VETCH

Plateau may be applied at the rate of 4 oz per acre to newly seeded crown vetch beds to aid in the establishment of vetch and reduce weed competition.

Plateau at 8 to 12 oz per acre may be used on unimproved established crown vetch in noncropland areas. **Plateau** provides control of labeled grass and broadleaf weeds (refer to the "WEEDS CONTROLLED" and "SPECIAL WEED CONTROL" sections for specific rates). Treatment of crown vetch beds with **Plateau** may cause internode shortening and some minor tip chlorosis depending on timing of application.

Plateau should be applied during winter dormancy or early spring to reduce potential injury. Applications made after May, may result in increased injury or defoliation. Addition of surfactants such as dlimenene based or crop oil concentrates will increase injury. Fall applications during the period of active crown vetch growth may result in severe injury or loss of stand.

REVEGETATION WITH PRAIRIEGRASSES AND OTHER FORAGE GRASSES

Plateau may be applied at the rate of 2 to 12 oz per acre to newly established or existing stands of labeled species (see below for details) in such areas as pasture, rangeland (see "GUIDELINES FOR RANGELAND USE" section), Conservation Reserve Program (CRP) land and noncropland sites such as roadsides, industrial sites, prairie restoration sites, drainage ditch banks, and other similar areas. Certain local ecotypes or varieties may be suppressed by **Plateau**. Many factors such as poor seedling vigor, cool temperatures, poor soil, planting depth, excessive moisture, disease, insects and dry weather after emergence can all result in poor stands. Additional stress of herbicide residue, poor soils and other factors contributing to poor seedling vigor can also increase injury and could result in mortality. BASF can not be held responsible for such unforeseen factors. It is suggested to try **Plateau** on a small area if tolerance is not known. **Plateau** controls many annual and perennial grass and broadleaf weeds. Weed competition is reduced allowing grass seedlings to establish. **Plateau** is also effective for control of noxious weeds in established grass stands and must be applied postemergence as a foliar treatment to perennial weeds. **IMPORTANT: ALWAYS ADD AN ADJUVANT** when applying **Plateau**. To maximize weed control always use a methylated seed oil when treating established grass stands. Use a nonionic surfactant when treating newly emerged seedling grasses. The addition of liquid fertilizer will decrease grass tolerance and should not be used when treating newly emerged seedling grasses.

Plateau may be applied at a rate of up to 12 oz per acre to Federal Conservation Reserve Program (CRP) land for the establishment or release of certain grass species (see "TOLERANT GRASS SPECIES" table).

Establishment: For optimum results in establishing mixed grass stands with **Plateau**, make application at planting before grass seedlings emerge. Newly emerged grasses can be sensitive to **Plateau** and/or the adjuvant used. If grasses have begun to emerge, it is best to wait until they have reached the five leaf stage to make a **Plateau** application and use a nonionic or silicone surfactant. **DO NOT** use a methylated seed oil at this time as some grass species tolerance will be lost. **Plateau** will control annual weeds preemergence or early postemergence. See "WEEDS CONTROLLED" section for maximum height of weeds and see below for more details on best rate and timing for grass and wildflower species. Postemergence applications may result in stand thinning due to variability in seedling grass tolerance to the use of spray adjuvants. Seedling grasses are generally more tolerant to the use of spray adjuvants after they have reached the five leaf stage. When planting into a field which was row cropped the previous year, compounded injury may occur from herbicide carry-over (see "DIRECTIONS FOR USE" section).

Rates and Control: Apply **Plateau** at 2 to 6 oz per acre to fields cropped the previous year, when annual weeds are the target and/or if grass/forb mixtures are used. **Plateau** at 2 to 6 oz per acre will provide control and/or suppression of many annual grass and broadleaf weeds. Use lower rates when in the northern most U.S., dry climates or for late season plantings into clean seedbeds.

Plateau rates as low as 2 oz. per acre may be used on soils with a pH > 7, a low CEC and a coarse texture containing a minimum of clay and organic matter. Use higher rates in heavy weed pressure, heavy residue, high organic matter, high rainfall and long growing season (southern portions of Illinois, Indiana, Missouri and Ohio, etc.). Apply **Plateau** at 8 to 12 oz per acre for giant ragweed or for perennial weed control/suppression. **Plateau** rates of 8 to 12 oz per acre may result in stunting or stand thinning. The duration and intensity of suppression are directly related to weed pressure, chemical residue, soil type and environmental conditions. See below for details for particular grass tolerances and timings.

Established Stands: For optimum results, apply **Plateau** as an early postemergence application to annual grasses and broadleaf weeds. For perennial weed control, see "SPECIAL WEED CONTROL" section. The use of high rates may result in foliar and/or seed head height suppression of established grass stands. This effect is more likely to occur under conditions of light soils, low weed pressure, low rainfall, and short growing seasons. Use the lower rates for light weed infestations or when applying to grass stands containing desirable wildflowers and legumes (see "WILDFLOWER ESTABLISHMENT AND MAINTENANCE" section for rate tolerance). Use higher rates to broaden and lengthen weed control spectrum.

Big Bluestem, Little Bluestem and Indiangrass: Plateau® herbicide may be applied at the rate of 2 to 12 oz per acre at planting, or any time thereafter, including after seedling grasses have emerged or to perennial stands (dormant or actively growing). See "WEEDS CONTROLLED" section for desired rate. Use the lower rates in Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas and Nebraska and higher rates as rainfall and/or growing season increases.

Switchgrass (Panicum virgatum): Plateau is not recommended for the establishment of pure switchgrass stands as severe injury or death may result. **Plateau** may be applied at a rate of 2 to 4 oz per acre if switchgrass is planted in mixed stands with tolerant species, but only if some stand thinning or loss of stand can be tolerated. Mature switchgrass planting can be reclaimed from certain perennial weeds such as tall fescue, leafy spurge, johnsongrass, etc., with **Plateau** at rates of 10 to 12 oz per acre. However, severe stunting and injury is imminent. **DO NOT** apply **Plateau** to switchgrass if such severe injury can not be tolerated.

Sideoats and Blue Grama: Apply **Plateau** to monoculture stands of sideoats and blue grama only if some stand thinning or loss of stand can be tolerated. **Plateau** may be applied at the rate of 2 to 4 oz/A plus an adjuvant to aid in the establishment of sideoats and blue grama after new seedlings have emerged and reached the five (5) leaf stage. When using **Plateau** at 4 oz per acre it is not recommended to use in combination with a methylated seed oil adjuvant as stand thinning may occur. The lower rates may provide adequate weed suppression in early summer plantings in the states of Wisconsin, Michigan, Minnesota, South Dakota, North Dakota, Kansas, Oklahoma, Texas and Nebraska and other states where growing degree days are short. Sideoats and blue grama have shown tolerance to **Plateau** at 2 to 4 oz/A, applied preemergence at planting, however, some stand thinning may occur. For weed control in established stands use 4 to 10 oz/A of **Plateau**. Up to 12 oz/A of **Plateau** may be applied, but may result in foliar and/or seedhead suppression, or in the injury of sideoats and blue grama, depending on surfactant choice, soil type, variety, weed pressure and environmental conditions.

Buffalograss: Apply **Plateau** at the rate of 2 to 4 oz/A for control or suppression of labeled weeds and to aid in the establishment of newly sprigged buffalograss. Apply **Plateau** immediately after planting prior to spring growth or seed germination. New growth and small seedlings can be severely injured or killed. If applying after emergence it is best to wait until buffalograss has at least five true leaves and use a nonionic or silicone surfactant. **DO NOT** use a methylated seed oil. For established stands, **Plateau** may be applied at the rate of 2 to 8 oz/A for weed control. Higher rates may cause some turf discoloration and stunting. **Plateau** may be applied to dormant buffalograss to control winter annual weeds. Turf type buffalograss may express different tolerance level to **Plateau** than wild type buffalograss. Some turf types can tolerate low rates of **Plateau** at seeding. Consult seed dealer for details.

Eastern Gamagrass: **Plateau** should only be used for the establishment or maintenance of eastern gamagrass if some stand thinning or loss can be tolerated. Apply **Plateau** at 2 to 6 oz per acre at planting prior to gamagrass emergence. Stand thinning and stunting is imminent. Adverse conditions, poor soils, or added stress to the gamagrass could result in stand mortality. Postemergence application to seedlings will cause mortality. On established eastern gamagrass, apply **Plateau** at 2 to 8 oz per acre prior to gamagrass breaking dormancy. Some stunting will occur and increases as the **Plateau** rate increases. Applications made during or after green-up may result in foliar and seedhead suppression and possible mortality of weak plants.

Tall Fescue Control: (Not for use in California unless directed otherwise in supplemental labeling.) Tall fescue can be controlled by using **Plateau** at the rate of 12 oz per acre plus methylated seed oil at 2 pints per acre in established stands of or to prepare a seed bed for big bluestem, little bluestem, and indiangrass. The addition of nitrogen fertilizer (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section) to the above mix will aid in control. Tall fescue must be actively growing for optimum control. If tall fescue has reached the boot stage or has reached summer dormancy, control may be poor. For improved control of tall fescue, **Plateau** may be tank mixed with ACCORD®, ROUNDUP® PRO, or glyphosate. Fall applications of **Plateau** at 8 to 12 oz/A plus 24 to 64 oz/A ACCORD® or ROUNDUP® PRO will result in best control of existing tall fescue and new germinating seedlings. With spring applications of **Plateau** at 6 to 12 oz/A, plus a ACCORD® or ROUNDUP® PRO at 32 to 64 oz/A, use higher rates for older, mature fescue stands and lower **Plateau** rates when planting forbs. When using 8 oz/A of **Plateau** in the fall with a glyphosate product, it is recommended to apply 4 oz/A **Plateau** in

the spring at planting for annual weed and seedling fescue control. Burning the fescue stand, where permitted, the following spring, just prior to green-up, will aid in control and provide a better seedbed for planting. Mowing the fescue several times the summer before fall application will weaken the fescue root system, making it more susceptible to herbicides. Always allow for at least 10 inches of regrowth, following the last mowing before spraying, as both **Plateau** and glyphosate products need foliage present for herbicide uptake and satisfactory control.

TOLERANT GRASS SPECIES¹

Common Name	Genus Species	Plateau Rate (oz/A) ²	
		New Seeding	Established
Big Bluestem	Andropogon gerardii	2-12	2-12
Little Bluestem	Schizachyrium scoparium	2-12	2-12
Indiangrass	Sorghastrum nutans	2-12	2-12
Bushy Bluestem	Andropogon glomeratus	—*	2-12
King Ranch Bluestem	Bothriochloa ischaemum	—	2-12
Silver Beard Bluestem	Bothriochloa saccharoides	—	2-12
Broomsedge	Andropogon virginicus	—	2-12
Fingergrass, Rhodes grass	Choris spp.	—	2-12
Needlegrass	Stipa spp.	—	2-12
Needleandthread	Stipa comata	—	2-12
Kearny (Plains) Threawn	Aristida longespica	—	2-12
Prairie Threawn	Aristida oligantha	—	2-12
Prairie Sandreed	Calamovilfa longifolia	—	2-12
Smooth Bromegrass	Bromus inermis	—	2-12
Kentucky Bluegrass	Poa pratensis	—	2-12 ³
Sandberg's Bluegrass	Poa sandbergii	—	2-12
Wheatgrasses	Agropyron spp.	—	2-12
Bottlebrush Squirreltail	Sitanian hystrix	—	2-12
Russian Wild Ryegrass	Elymus junceus	2-6 ²	2-12
Sideoats Grama	Bouteloua curtipendula	2-8 ³	2-8
Blue Grama	Bouteloua gracilis	2-8 ³	2-8
Buffalograss	Buchloe dactyloides	2-4	2-8
Eastern Gamagrass	Tripsacum dactyloides	2-6 ³	2-8

¹ See individual grass sections for application timing.

² High rates may result in stunting and growth suppression.

³ **Plateau** preemergence applications to newly seeded sideoats, blue grama and Eastern gamagrass may result in thinning or loss of stand.

⁴ Some bluegrass varieties are sensitive to **Plateau**. Drought can delay recovery and may result in overgrazing of treated area.

* Tolerance unknown

**TOLERANCE OF ESTABLISHED GRASSES TO
8 TO 12 OZ/A OF PLATEAU® HERBICIDE
APPLIED IN THE FALL**

Grass Species ¹	Tolerant	Suppressed ²	Not Tolerant	Tolerance Unknown
Bermudagrass	X			
Bluegrass, Kentucky		X		
Bluegrass, Sandberg's	X			
Bluestem, big	X			
Bluestem, bushy	X			
Bluestem, King Ranch	X			
Bluestem, little	X			
Bluestem, silver beard	X			
Bromegrass, meadow		X	X	
Bromegrass, smooth		X		
Broomsedge	X			
Buffalograss	X	X		
Cheatgrass			X	
Creeping foxtail, Garrison				X
Downey brome			X	
Fescue, Idaho	X			
Fescue, tall			X	
Gamagrass, eastern		X		
Grama, blue	X	X		
Grama, sidecoats	X	X		
Indiangrass	X			
Medusahead			X	
Needleandthread	X			
Needlegrass, green	X			
Orchardgrass		X		
Prairie cordgrass		X		
Prairie dropseed				X
Prairie sandreed	X			
Prairie threeawn	X			
Quackgrass		X		
Redtop		X	X	
Reed canarygrass		X	X	
Rhodes grass/Fingergrass	X			
Ryegrass, annual or Italian			X	
Ryegrass, perennial		X	X	
Squirreltail, bottlebrush	X			
Switchgrass		X	X	
Timothy			X	
Wheatgrass, bluebunch	X	X		
Wheatgrass, crested	X	X		
Wheatgrass, intermediate	X	X		
Wheatgrass, pubescent	X	X		
Wheatgrass, siberian	X			
Wheatgrass, slender	X	X		
Wheatgrass, stream-bank	X	X		
Wheatgrass, western	X	X		
Wild ryegrass, Basin	X			
Wild ryegrass, Canada		X		
Wild ryegrass, Russian	X			
Wild ryegrass, Virginia		X		

¹ Species with an X in more than one column means tolerance will vary depending on variety, use rate and environmental conditions.

² Suppression may be expressed as reduction in number of seedheads, seedhead height suppression or foliage height reduction; however, full recovery of the grass can be expected.

**WILDFLOWER ESTABLISHMENT
AND MAINTENANCE**

Due to high degree of variation in genotypes, ecotypes and varieties of wildflowers, tolerances to **Plateau** can vary dramatically and may be reduced under certain soil types and environmental conditions. Apply **Plateau** only if some stand thinning or loss can be tolerated. Preemergence applications of low use rates (2 oz/A)

to tolerant species, result in the least amount of injury, but may not eliminate it. Postemergence applications of **Plateau** can result in injury or death of some genotypes, and should be used only as a rescue treatment when weed competition threatens the stand. Use of certain spray adjuvants can also increase wildflower injury and loss of stand. Although most legumes listed in the tolerance table are tolerant to 4 oz/A of **Plateau** preemergence, some stand thinning may occur. Legumes are more tolerant to post applications, but chlorosis or stunting is possible. Recommendations listed in the tables below are designed for mixed grass/wildflower stands. Less than satisfactory results may occur from applications to monoculture stands. It is recommended to try on a small scale to determine degree of satisfaction on monoculture stands.

For prairiegrass/wildflower mixtures: Where some wildflower injury (phytotoxicity, height suppression) can be tolerated, apply **Plateau** at the rate to achieve desired weed control, but not to exceed tolerance rate listed in the table below. Wildflower injury can be reduced or eliminated with preemergence applications. To minimize injury, apply **Plateau** at 2 to 4 oz per acre at planting to tolerant species listed below. Use the 2 oz per acre rate under cool dry conditions and in low rainfall areas. If postemergence application is made to established prairiegrass/wildflower mixtures, use the lowest rate of **Plateau** necessary to achieve desired weed control (see "WEEDS CONTROLLED" section). Postemergence application can result in stand thinning or death due to vast variation in seed sources, varieties and genotypes. It is recommended that a small area be tested prior to full application for tolerance of desired species. The rates listed below are for those species in which acceptable tolerance has been confirmed on the varieties/genotypes being treated.

Application of **Plateau** in conjunction with an organophosphate insecticide may cause an increase in wildflower injury.

**Seedling Wildflower and Legume Tolerance to
Plateau (4 oz/A)¹ in Mixed Grass/Forb Stands.**

Common Name	Genus Species	PRE	POST
Alfalfa	Medicago sativa	No	Yes
Aster, New England	Aster novae angliae	No	Yes
Aster, Prairie	Aster tanacetifolius	No	Yes
Baby Blue Eyes	Nemophila menziesii	No	Yes
Beggar ticks	Bidens frondosa	No	Yes
Bird's Eyes	Gilia tricolor	No	Yes
Bishop's Flower	Anuni majus	No	Yes
Blackeyed Susan	Rudbeckia hirta	Yes	Yes
Blanketflower	Gaillardia aristata	No	Yes
Bundleflower, Illinois	Desmanthus illinoensis	Yes	Yes
Catchfly	Silene armeria	No	Yes
Chicory	Cichorium intybus	Yes	Yes
Clover, Crimson	Trifolium incarnatum	Yes	Yes
Clover, White	Trifolium repens	No	Yes
Coneflower, Purple	Echinacea purpurea	Yes	Yes
Coneflower, Upright Prairie	Ratibida columnifera	Yes	Yes
Coreopsis, Dwarf Red Plains	Coreopsis tinctoria var. Gay Feather	Yes	Yes
Coreopsis, Lance Leaved	Coreopsis lanceolata	Yes	Yes
Coreopsis, Plains	Coreopsis tinctoria	Yes	Yes
Cornflower	Centaurea cyanus	No	Yes
Cosmos, Garden	Cosmos bipinnatus	Yes	Yes
Cosmos, Yellow	Cosmos sulphureus	Yes	Yes
Daisy, Ox-eye	Chrysanthemum leucanthemum	Yes	Yes
Daisy, Shasta	Chrysanthemum maximum	Yes	Yes
Five Spot	Nemophila maculata	No	Yes
Flax, Blue	Linum perenne	No	Yes
Indian Blanket	Gaillardia pulchella	No	Yes
Indigo, Blue False	Baptisia australis	Yes	No
Johnny Jump-ups	Viola cornuta	Yes	Yes
Lemon Mint	Monarda citriodora	No	Yes

Seedling Wildflower and Legume Tolerance to Plateau® herbicide (4 oz/A)¹ in Mixed Grass/Forb Stands. (CONT):

Common Name	Genus Species	PRE	POST
Lespedeza, Bicolor	Lespedeza	Yes	Yes
Lespedeza, Korean	Lespedeza stipulacea	No	Yes
Lespedeza, Sericea	Lespedeza cuneata	No	Yes
Lupine, Perennial	Lupinus perennis	Yes	Yes
Mexican Hat	Ratibida columnifera	Yes	Yes
Partridgepea	Cassia fasciculata	Yes	Yes
Pea, Calico	Pisum viganasinensis	Yes	Yes
Pea, Flat	Lathyrus sylvestris	Yes	Yes
Pea, Perennial	Lathyrus latifolius	Yes	Yes
Phlox, Drummond	Phlox drummondii	Yes	No
Poppy, California	Eschscholzia californica	Yes	No
Poppy, Corn	Papaver rhoeas	Yes	Yes
Poppy, Red Corn	Papaver sp.	Yes	Yes
Prairieclover, Purple	Dalea purpurea	Yes	Yes
Prairieclover, White	Dalea candidum	Yes	Yes
Tick-trefoil, Showy	Desmodium canadense	No	Yes
Trefoil, Birdsfoot	Lotus corniculatus	No	Yes
Vetch, Crown	Coronilla varia	Yes	—
Vetch, Hairy	Vicia villosa	Yes	—
Yarrow, Gold	Achillea filipendulina	No	Yes

¹ For legumes, at least three true leaves should be present before a postemergence application.

Established Wildflower and Legume Tolerance to Plateau (maximum rate¹, oz/A) in Mixed Grass/Forb Stands.

Common Name	Genus Species	PRE	POST ²
Flax, Blue	Linum perenne	0	6
Indian Blanket	Gaillardia puchella	0	6
Blanketflower	Gaillardia aristata	0	8
Chickory	Cichorium intybus	4	6
Daisy, Shasta	Chrysanthemum maximum	4	8
Prairieclover, Purple	Dalea purpurea	4	12
Coneflower, Upright Prairie	Ratibida columnifera	6	6
Mexican Hat	Ratibida columnifera	6	6
Poorjoe	Diodia teres	8	—
Lupine, Perennial ³	Lupinus perennis	8	12
Coneflower, Purple	Echinacea purpurea	8	8
Daisy, Ox-eye ³	Chrysanthemum leucanthemum	8	8
Leadplant	Amorpha canescens	8	8
Lespedeza, Bicolor	Lespedeza	8	8
Milkweed, Common	Asclepias syriaca	8	—
Pea, Prairie Scurf	Psoralea esculenta	8	8
Yarrow, Gold ³	Achillea filipendulina	8	8
Blackeyed Susan	Rudbeckia hirta	8	10
Johnny Jump-ups	Viola cornuta	8	12
Sweetclover	Melilotus sp.	12	8
Alfalfa	Medicago sativa	12	12
Bundleflower, Illinois	Desmanthus illinoensis	12	12
Lespedeza, Sericea	Lespedeza cuneata	12	12
Partridgepea	Cassia fasciculata	12	12
Sensitive vine	Mimosa strigillosa	12	12
Vetch, Crown	Coronilla varia	12	12
Violet, Wild	Viola spp.	12	12

¹ Height suppression or stand reduction may occur at maximum use rate. For legumes, some yellowing and stunting can occur at higher use rates.

² Postemergence application should be made early post on the flowers to reduce injury and increase flower set.

³ Will not flower.

⁴ Most native rangeland lupines are tolerant to Plateau at 12 oz/A postemergence.

Wildflower Establishment with Plateau 4 oz/A + PENDULUM herbicide 2 lbs a.i./A¹

Common Name	Genus Species	PRE ²	POST ³
Blackeyed Susan	Rudbeckia hirta	Yes	Yes
Blanketflower	Gaillardia pulchella	No	Yes
Bundleflower, Illinois	Desmanthus illinoensis	>50% thinning	Yes
Clover, Crimson	Trifolium incarnatum	>50% thinning	Yes
Coneflower, Claspig	Dracopis amplexicaulis	Yes	Yes
Coneflower, Upright Prairie	Ratibida columnifera	No	OK
Coneflower, Purple	Echinacea purpurea	Yes	Yes
Coreopsis, Dwarf Red Plains	Coreopsis tinctoria var. Gay Feather	OK stunting	OK stunting
Coreopsis, Plains	Coreopsis tinctoria	OK stunting	Yes
Coreopsis, Lance Leaved	Coreopsis lanceolata	25% thinning	Yes
Cornflower	Centaurea cyanus	No	OK 20% thinning
Cosmos, Garden	Cosmos bipinnatus	OK 10% thinning	OK stunting
Cosmos, Yellow	Cosmos sulphureus	Yes	Yes
Daisy, Ox-eye	Chrysanthemum leucanthemum	25% thinning	Yes
Daisy, Shasta	Chrysanthemum maximum	marginal-OK 20% thinning	Yes
Lupine, Perennial	Lupinus perennis	Yes	≤50% thinning
Partridgepea	Cassia fasciculata	25% thinning	Yes
Poppy, California	Eschscholzia californica	Yes	25% injury stunting, thinning
Yarrow, Gold	Achillea filipendulina	OK thinning	OK

¹ 2 lbs a.i./A = 2.4 qts of PENDULUM herbicide 3.3 EC or 3.3 lbs of PENDULUM herbicide WDG

² Preemergence at planting

³ Postemergence to seedlings

Yes = no injury

No = results in no wildflower germination or unacceptable injury to seedling flowers.

OK = can be used if thinning and/or stunting can be tolerated or if establishment is threatened by weed competition.

Due to the diversity of species and varieties that exist in areas where wildflowers are grown, the response to Plateau may vary greatly. Careful testing on desirable species is recommended to determine if area-wide applications can be made. Try on a limited area to verify tolerance in a specific area.

The suitability of Plateau use on wildflower species not listed, should be determined by treating a small number of such wild flowers at an appropriate rate, not to exceed 12 oz per acre per year. Treated wildflowers should be evaluated 1 to 2 months following application for possible injury. THE USER ASSUMES RESPONSIBILITY FOR ANY DAMAGE OR OTHER LIABILITY.

SPECIAL WEED CONTROL

(Not for use in California unless directed otherwise in supplemental labeling.)

ALWAYS ADD AN ADJUVANT to Plateau (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section). Research has shown Methylated Seed Oil (MSO) surfactants provide Plateau with superior control of perennial weeds. This effect is not always observed and is most prevalent on waxy leaf species, perennials and weeds under stress conditions. For the weeds listed below, it is recommended to use a MSO for best results. The use of nonionic surfactants or silicone based surfactants may result in less than acceptable control.

Johnsongrass & Itchgrass: For best results, apply Plateau at the rate of 8 to 12 oz per acre after johnsongrass or itchgrass has reached 18 to 24 inches in height at the whorl. The addition of

ACCORD® or ROUNDUP® PRO at the rate of 8 to 16 oz per acre may improve control after culm elongation or in dense stands. Use higher herbicide rates as density increases. Larger grass than specified above can be controlled.

Dallisgrass, Bahiagrass, Vaseygrass, Paspalum spp., Smutgrass: For dallisgrass, bahiagrass and smutgrass control, apply **Plateau® herbicide** postemergence at the rate of 10 to 12 oz per acre, after grass has reached 100% green-up. For dallisgrass and smutgrass, activity may range from suppression to control depending upon grass growth stage and growing conditions at the time of application. For vaseygrass apply **Plateau** at the rate of 4 to 6 oz per acre postemergence after grass has reached 100% green-up and is from 3 to 8 inches in height. The addition of ACCORD® or ROUNDUP® PRO at the rate of 12 to 16 oz per acre will improve efficacy. Use higher herbicide rates as target grass weed densities and/or maturity increase. The addition of PENDULUM® will provide increased preemergence control of these grasses from seed.

Leafy Spurge: For best results, apply **Plateau** at 8 to 12 oz per acre in late summer or fall (August through October, but timing may vary by state and/or altitude). Consecutive year applications will optimize long term control. **Plateau** at 12 oz/A applied spring or fall, or 4 oz/A in the spring following an 8 oz/A fall treatment may result in excessive injury to cool season grasses in some areas. For best results, always use a methylated seed oil at 2 pints per acre. Two pints per acre of nitrogen fertilizer (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section) may also be added to the spray tank to increase leafy spurge control, however, this may increase injury to desired species of grasses and forbs. The use of nonionic and silicone based surfactants have resulted in little or no control of leafy spurge. Approximate dates for fall timing in North and South Dakota is late August through September; for Nebraska and Iowa is mid-September through mid-October. This application should be made after good soil moisture is present but prior to the leafy spurge losing its milky sap flow due to a killing frost. To check and see if the milky sap flow has been affected by a frost simply break the main stem of the leafy spurge and if milky sap flows from the break then **Plateau** can still be applied.

Tall Fescue Control: Tall fescue can be controlled by using **Plateau** at the rate of 12 oz plus Methylated Seed Oil at 2 pints per acre. The addition of ACCORD, glyphosate or ROUNDUP PRO and/or nitrogen fertilizer (see "SPRAY ADJUVANTS FOR POSTEMERGENCE APPLICATIONS" section) to the above mix will aid in control. Tall fescue must be actively growing for optimum control. If tall fescue has reached summer dormancy, control may be poor.

Fall applications of **Plateau** at 8 to 12 oz/A plus a ACCORD® or ROUNDUP® PRO at 24 to 64 oz/A will result in best control of existing tall fescue and new germinating seedlings. With spring applications of **Plateau** at 6 to 12 oz/A, plus ACCORD or ROUNDUP PRO at 32 to 64 oz/A, use higher rates for older, mature fescue stands and lower **Plateau** rates when planting forbs. When using 8 oz/A of **Plateau** in the fall with ACCORD or ROUNDUP PRO, it is recommended to apply 4 oz/A **Plateau** in the spring at planting for annual weed and seedling fescue control. Burning the fescue stand, where permitted, the following spring, just prior to green-up, will aid in control and provide a better seedbed for planting. Mowing the fescue several times the summer before fall application, will weaken the fescue root system, making it more susceptible to herbicides. Always allow for at least 10 inches of regrowth, following the last mowing before spraying, as both **Plateau** and ROUNDUP products need foliage present for herbicide uptake and satisfactory control.

Russian Knapweed: Apply 12 oz/A of **Plateau** plus 1 quart per acre of methylated seed oil during Russian knapweed senescence in the fall. Control improves as senescence progresses and may still be obtained with applications made after full senescence. Applications made prior to the initiation of senescence will result in reduced control.

Dalmatian Toadflax: Apply 12 oz/A of **Plateau** plus 1 quart per acre of methylated seed oil in the fall when the top 25% of the plant is necrotic, usually after a hard frost (late October through November). The addition of ammonium sulfate at a rate of 2 to 3 pints per acre may improve control. As long as there is some green stem and/or leaf tissue remaining, good control can be achieved. This timing usually corresponds to fall basal growth. Applications made prior to this will result in poor control.

Resistant Biotypes: Naturally occurring biotypes (a plant within a given species that has a slightly different, but distinct genetic

makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled by this and/or other herbicides (OUST®) with the ALS/AHAS enzyme inhibiting mode of action. If naturally occurring ALS/AHAS resistant biotypes are present in an area, **Plateau** should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

RESIDUAL BAREGROUND WEED CONTROL

For sensitive areas and use around desirable vegetation **Plateau** at 12 ounces per acre may be tank mixed with PENDULUM® herbicide, ROUNDUP® PRO, ESCORT®, KARMEX®, 2,4-D, diuron, ENDURANCE® or other labeled products to provide total vegetation control. For other bareground areas **Plateau** at 12 oz per acre may be tank mixed with ARSENAL® herbicide, SAHARA® DG herbicide, KROVAR®, OUST®, TORDON®, VANQUISH® or other labeled products to provide total bareground weed control. For maximum weed control, use 2 pints per acre of methylated seed oil as an adjuvant.

Spot Treatments: **Plateau** may be used to control weed encroachment in bareground or total vegetation control situations. To prepare the spray solution, thoroughly mix in each gallon of water 0.25 to 5% volume/volume (0.3 oz to 5.4 oz per gallon) **Plateau** plus a methylated seed oil adjuvant.

USE UNDER PAVED SURFACES

Applications should be made to the soil surface only when final grade is established. **DO NOT** move soil following **Plateau** application. Apply **Plateau** in sufficient water to ensure thorough and uniform wetting of the soil surface, including the shoulder area. Add **Plateau** at a rate of 12 oz. per acre to clean water in the spray tank during the filling operation. Agitate before spraying. If soil is not moist prior to treatment, incorporation of **Plateau** will improve control. **Plateau** can be incorporated into the soil to a depth of two inches using a rototiller or disc. Rainfall or irrigation totaling one inch is also sufficient to incorporate **Plateau** into the soil surface. **DO NOT** allow treated soil to wash or move into untreated area.

CONIFER PLANTATION SITE PREPARATION

Plateau may be applied as a site preparation treatment prior to establishing conifer plantations to provide residual weed control of herbaceous weeds. Apply **Plateau** at 12 ozs per acre.

DO NOT apply more than 12 ozs per acre per year.

DO NOT use in forests. Only for use on sites that are managed as conifer plantations.

TOLERANCE OF TREES AND BRUSH TO PLATEAU

The following tolerance information is provided as a general guideline when it is desirable or necessary to make **Plateau** applications in and around desirable tree and brush species. **DO NOT** use **Plateau** on nursery, orchard, ornamental plantings, new plantings, seedling trees or fiber farms except as specified on supplemental labeling. It is suggested that **Plateau** be tried on a limited basis to determine tolerance in your area. **Plateau** may be used at rates up to 12 oz per acre for weed control in and around established trees on pasture, rangeland (see "GUIDELINES FOR RANGELAND USE" section) and noncropland areas such as roadsides, prairies and similar areas used for wildlife cover, erosion control, wind breaks, etc. Tree and brush species known to have acceptable tolerance to **Plateau** when applied under the canopy and/or to the foliage are listed below. Tolerance is based upon trees with a minimum of 2 inch DBH. Application to tree and brush species that are under stress due to drought, disease, insect damage or other factors may be more susceptible to injury from **Plateau** and may result in severe injury or death. Some species may exhibit tip chlorosis and minor necrosis. Foliar contact may increase injury to include defoliation and terminal death. Application methods that minimize foliar contact with desirable tree and brush species can improve tolerance.

When making fall applications of **Plateau**, potential injury to tree and brush species from foliar contact may be minimized by making the application after the leaves have begun to senesce (fall color) or after leaf drop. Conifer species are generally tolerant to fall applications. **Plateau** applications in and around tree and brush species should be made at the recommended timing for the target weed species.

Brush and Tree Species Tolerance to Plateau® herbicide at 12 oz per Acre¹

Common Name	Genus Species	Tolerance by Application Method ²	
		Directed Below Foliage	To Foliage
Apple (Var. Winesap) ³	Malus sylvestris	Yes	NR
Ash, Blue	Fraxinus quadrangulata	Yes	NR
Ash, Green	Fraxinus pennsylvanica	No	No
Azalea	Rhododendron spp.	No	No
Basswood	Tilia hetrophylla	No	No
Boxelder	Acer negundo	Yes	Injury ⁵
Buckeye, Ohio	Aesculus glabra	Yes	NR
Cedar-juniper, Western	Thuja plicata	Yes	Yes
Cherry, Black ³	Prunus serotina	No	No
Cherry, Choke	Prunus virginiana	No	No
Cherry, Sweet ³	Prunus avium	No	NR
Cottonwood	Populus deltoides	Yes	Injury ⁵
Cottonwood, narrow leaf	Populus spp.	Yes	Injury ⁵
Currant species	Ribes spp.	Injury ⁵	No
Dogwood, Flowering	Cornus spp.	Yes	Yes
Dogwood, Grey	Cornus racemosa	Yes	Injury ⁵
Dogwood, Red Trig	Cornus spp.	Yes	Yes
Douglas Fir	Pseudotsuga menziesii	Yes	Yes ⁴
Elm, American	Ulmus americana	Yes	Yes
Elm, Siberian	Ulmus pumila	Yes	No
Elm, Slippery	Ulmus rubra	Yes	Yes
Gooseberry	Ribes spp.	Injury ⁵	Injury ⁵
Hackberry	Celtis occidentalis	Yes	Yes
Hawthorn	Crataegus spp.	Yes	Injury ⁵
Juniper, Chinese	Juniperus chinensis	Yes	Yes
Juniper, Western	Juniperus osteosperma	Yes	Yes
Lilac	Syringa spp.	No	No
Linden, American	Tilia americana	No	No
Locust, Black	Robinia pseudoacacia	Yes	Yes
Locust, Honey	Gleditsia triacanthos	Yes	Yes
Maple, Red	Acer rubrum	Yes	Yes
Maple, Sugar	Acer saccharum	Yes	Yes
Mulberry, Red	Morus rubra	Yes	NR
Mulberry, White	Morus alba	Yes	NR
Oak, Black	Quercus velutina	Yes	NR
Oak, Live	Quercus virginiana	Yes	Yes
Oak, Southern Red	Quercus falcata	Yes	NR
Oak, White	Quercus alba	Yes	NR
Olive, Russian	Elaeagnus angustifolia	Yes	No
Osage Orange	Maclura pomifera	Yes	NR
Peach (Var. Elberta) ³	Prunus persica	Yes	NR
Photinia, Red Tip	Photinia fraseri	Yes	Yes
Pine, Lodgepole	Pinus contorta	Yes	Injury ⁴
Pine, White ⁴	Pinus strobus	Yes	Yes
Pittosporum, Japanese	Pittosporum tobira	Yes	Yes
Plum species	Prunus spp.	Yes	No
Poplar, Yellow (Tulip)	Liriodendron tulipifera	Yes	NR
Privet, Common	Ligustrum vulgare	Yes	Yes
Rabbitbrush species	Chrysothamnus spp.	Yes	Yes
Redbud	Cercis canadensis	Yes	Yes
Redcedar, Eastern	Juniperus virginiana	Yes	Yes
Rose, Multiflora	Rosa multiflora	Yes ⁶	No
Sage, Big	Artemisia tridentata	Yes	Yes
Sage, Fringe	Artemisia frigida	Yes	Yes
Sage, Silver	Artemisia cana	Yes	Yes
Sagebrush, Big	Artemisia tridentata	Yes	Yes

Brush and Tree Species Tolerance to Plateau at 12 oz per Acre¹ (CONT):

Common Name	Genus Species	Tolerance by Application Method ²	
		Directed Below Foliage	To Foliage
Sagebrush, Fringed	Artemisia frigida	Yes	Yes
Saltcedar	Tamarix spp.	Yes	No
Serviceberry	Amelanchier alnifolia	Yes	NR
Snowberry, Western	Symphoricarpos occidentalis	Yes	Injury ⁵
Spruce species	Picea spp.	Yes ⁴	Yes ⁴
Sugarberry	Celtis laevigata	Yes	Yes
Sweetgum	Liquidambar styraciflua	Yes	Yes ⁵
Sycamore	Plantanus occidentalis	Yes	No
Tree-of-Heaven	Ailanthus altissima	Yes	Yes
Walnut, American Black	Juglans nigra	Yes	No
Willow	Salix spp.	Yes	Injury ⁵

¹ Not intended for nursery, orchard, ornamental plantings, new plantings or seedling trees.

² Yes = Tolerant

No = Not Tolerant, Severe injury or death

NR = Not Recommended due to insufficient tolerance data

³ Not for use on ornamental or fruit bearing trees.

⁴ Applications made just before or during candling may cause candle injury or death.

⁵ Possible defoliation and/or death. Some species may exhibit tip chlorosis and minor necrosis. If spray contacts foliage then defoliation and terminal death may occur. Injury can be reduced or eliminated if applied in fall after color change or leaf drop.

⁶ See supplemental label, "For Use In Sweetgum (Liquidambar styraciflua) Grown on Fiber Farms."

WEEDS CONTROLLED

(Not for use in California unless directed otherwise in supplemental labeling.)

Plateau, 4 to 6 oz per acre

Common Name	Genus Species	PRE	POST	Annual/ Biennial/ Perennial ³
BROADLEAVES				
Bedstraw, Catchweed	Galium aparine	C	4	WA
Beggarweed, Florida	Desmodium tortuosum	C	2	SA
Buffalobur	Solanum rostratum	—	C	SA
Buttercup, Bur	Ranunculus testiculatus	C	C	WA
Cocklebur, Common	Xanthium strumarium	S	6	SA
Lambsquarters, Common	Chenopodium album	C	2	SA
Halogeton	Halogeton glomeratus	C	C	SA
Morningglory				
Entireleaf	Ipomoea hederacea	S	3	SA
Ivyleaf	Ipomoea hederacea	S	3	SA
Tall	Ipomoea purpurea	S	3	SA
Mustard, Garlic	Alliaria petiolata	C	C	SA
Mustard, Wild	Brassica kaber	C	C	WA
Pigweed	Amaranthus sp.	C	6	SA
Queen Anne's Lace	Daucus carota	—	4	B
Radish, Wild	Raphanus raphanistrum	S	4	WA
Yellow Rocket	Barbarea vulgaris	C	4	WA
Sicklepod	Senna obtusifolia	C	4	SA
Sida, Prickly	Sida spinosa	C	2	SA
Smartweed				
Ladysthumb	Polygonum persicaria	C	C	SA
Pennsylvania	Polygonum pennsylvanicum	C	C	SA
Swamp	Polygonum coccineum	C	C	SA
Starbur, Bristly	Acanthospermum hispidum	C	2	SA
Velvetleaf	Abutilon theophrasti	C	6	SA

Plateau® herbicide, 4 to 6 oz per acre (CONT):

Common Name	Genus Species	PRE ¹	POST ²	Annual/ Biennial/ Perennial ³
GRASS WEEDS				
Brome, Downy	<i>Bromus tectorum</i>	C	---	WA
Cheat	<i>Bromus secalinus</i>	C	---	WA
Crabgrass				
Large (Hairy)	<i>Digitaria sanguinalis</i>	C	4	SA
Smooth	<i>Digitaria ischaemum</i>	C	4	SA
Foxtail,				
Giant	<i>Setaria faberi</i>	C	6	SA
Green	<i>Setaria viridis</i>	C	4	SA
Yellow	<i>Setaria glauca</i>	C	4	SA
Goatgrass, Jointed	<i>Aegilops cylindrica</i>	C	C	WA
Goosegrass	<i>Elusine indica</i>	S	2	SA
Johnsongrass (Seedling)	<i>Sorghum halepense</i>	C	12	SA
Medusahead	<i>Taeniatherum caput-medusae</i>	C	2	WA
Panicum, Fall	<i>Panicum dichotomiflorum</i>	S	6	SA
Sandbur	<i>Cenchrus sp.</i>	S	C	A/P
Shattercane	<i>Sorghum bicolor</i>	C	12	SA
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	SA
Stiltgrass, Japanese	<i>Microstegium vimineum</i>	C	4	A
Vaseygrass	<i>Paspalum urvillei</i>	---	8	P
SEDGES				
Nutsedge				
Yellow	<i>Cyperus esculentus</i>	S	4S	P
Purple	<i>Cyperus rotundus</i>	S	4S	P
Sedge	<i>Juncus sp.</i>	S	4S	A/P

¹ C = control, S = suppression in northern United States only

² Maximum plant height in inches at time of application

³ Growth habit: A=Annual, SA=Summer Annual, WA=Winter Annual, B=Biennial
P=Perennial

Plateau, 8 to 12 oz per acre

Common Name	Genus Species	PRE ¹	POST ²	Annual/ Biennial/ Perennial ³
BROADLEAVES				
Anoda, Spurred	<i>Anoda cristata</i>	C	6	SA
Baby's Breath ⁵	<i>Gypsophila paniculata</i>	---	C	P
Bedstraw, Catchweed	<i>Galium aparine</i>	C	C	WA
Bedstraw, Marsh	<i>Galium spp.</i>	C	C	WA
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	6	SA
Bindweed, Field	<i>Convolvulus arvensis</i>	---	C	P
Buffalobur	<i>Solanum rostratum</i>	---	C	SA
Burclover	<i>Medicago sp.</i>	---	4	SA
Chickweed, Common	<i>Stellaria media</i>	C	6	SA
Cocklebur, Common	<i>Xanthium strumarium</i>	C	6	SA
Cornsalad, Common	<i>Valerianella locusta</i>	---	C	WA
Crownbeard, Golden	<i>Verbisina encelioides</i>	C	2	SA
Dandelion	<i>Taraxacum officinale</i>	---	C	P
Dock, Curly	<i>Rumex crispus</i>	C	6	B
Fiddleneck	<i>Amsinckia sp.</i>	---	C	SA
Flax, Spurge	<i>Thymelaea passerina</i>	C	C	A
Fleabane, Annual	<i>Erigeron annuus</i>	---	C	A
Geranium, Carolina	<i>Geranium carolinianum</i>	---	C	WA/B
Geranium, Cranesbill	<i>Geranium maculatum</i>	C	C	WA/B
Ground Cherry	<i>Physalis heterophylla</i>	---	C	P
Hemlock, Poison	<i>Conium maculatum</i>	C	6	B
Henbit	<i>Lamium amplexicaule</i>	C	3	WA/B

Plateau, 8 to 12 oz per acre (CONT):

Common Name	Genus Species	PRE ¹	POST ²	Annual/ Biennial/ Perennial ³
BROADLEAVES				
Houndstongue, Bristly	<i>Cynoglossum officinale</i>	C	C	B
Indigo, Hairy	<i>Indigofera hirsuta</i>	C	2	P
Jimsonweed	<i>Datura stramonium</i>	C	6	SA
Knapweed, Russian ⁶	<i>Centaurea repens</i>	---	C*	P
Knotweed, Prostrate	<i>Polygonum aviculare</i>	C	C	SA
Kochia*	<i>Kochia scoparia</i>	C	3	SA
Lambsquarters, Common	<i>Chenopodium album</i>	C	3	SA
Morningglory				
Cypressvine	<i>Ipomoea quamoclit</i>	C	6	SA
Entireleaf	<i>Ipomoea hederacea</i>	C	6	SA
Ivyleaf	<i>Ipomoea hederacea</i>	C	6	SA
Pitted	<i>Ipomoea lacunosa</i>	C	6	SA
Smallflower	<i>Jacquemontia tamnifolia</i>	C	6	SA
Tall	<i>Ipomoea purpurea</i>	C	6	SA
Mustard, Wild	<i>Brassica kaber</i>	C	C	WA
Onion, Wild	<i>Allium canadense</i>	C	C	P
Pepperweed, Perennial	<i>Lepidium latifolium</i>	---	C	P
Pigweed ⁴	<i>Amaranthus sp.</i>	C	6	SA
Plantain, Narrowleaf	<i>Plantago lanceolata</i>	C	C	B
Poinsettia, Wild	<i>Euphorbia heterophylla</i>	C	6	SA
Puncture Vine	<i>Tribulus terrestris</i>	---	C	SA
Purslane, Common	<i>Portulaca oleracea</i>	C	4	SA
Pusley, Florida	<i>Richardia scapra</i>	C	4	SA
Queen Anne's Lace	<i>Daucus carota</i>	C	C	B
Ragweed				
Common	<i>Ambrosia artemisiifolia</i>	C	3	SA
Giant	<i>Ambrosia trifida</i>	S	6	SA
Western	<i>Ambrosia psilostachya</i>	---	C	A/P
Rocket, Yellow	<i>Barbarea vulgaris</i>	C	C	WA
Senna, Coffee	<i>Cassia occidentalis</i>	C	4	SA
Sicklepod	<i>Senna obtusifolia</i>	C	6	SA
Sida, Prickly	<i>Sida spinosa</i>	C	6	SA
Smartweed				
Ladysthumb	<i>Polygonum persicaria</i>	C	C	SA
Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C	SA
Swamp	<i>Polygonum coccineum</i>	C	C	SA
Spurge				
Leafy	<i>Euphorbia esula</i>	---	FALL*	P
Spotted	<i>Euphorbia maculata</i>	C	4	SA
Toothed	<i>Euphorbia dentata</i>	C	4	SA
Starbur, Bristly	<i>Acanthospermum hispidum</i>	---	6	SA
Sunflower	<i>Helianthus annuus</i>	---	18	SA
Tansymustard	<i>Descurainia pinnata</i>	C	C	WA
Teasel, Common	<i>Dipsacus fullonum</i>	---	C	B
Thistle				
Bull	<i>Cirsium vulgare</i>	S	C	WA/B
Musk	<i>Carduus nutans</i>	S	C	B
Platt	<i>Cirsium canescens</i>	S	C	P
Russian*	<i>Salsola iberica</i>	C	3	A
Toadflax, Dalmatian	<i>Linaria dalmatica</i>	---	C*	P
Velvetleaf	<i>Abutilon theophrasti</i>	C	C	A
Vervain, Blue	<i>Verbena hastata</i>	---	S	WA
Vervain, prostrate	<i>Verbena bracteata</i>	---	C	P
Whitetop	<i>Cardaria spp.</i>	---	C	P
Willowherb	<i>Epilobium spp.</i>	---	C	P
Woodsorrel, Yellow	<i>Oxalis stricta</i>	C	C	P

Plateau® herbicide, 8 to 12 oz per acre (CONT):

Common Name	Genus Species	PRE ¹	POST ²	Annual/ Biennial/ Perennial ³
GRASS				
Bahiagrass	<i>Paspalum nutatum</i>	S	C*	P
Barley, Little	<i>Hordeum pusillum</i>	C	4	WA
Barley, Squirrel Tail	<i>Hordeum jubatum</i>	—	C	P
Barnyardgrass	<i>Echinochloa crus-galli</i>	C	6	SA
Canarygrass, Reed	<i>Phalaris arundinacea</i>	—	C	P
Cheat	<i>Bromus secalinus</i>	C	—	WA
Crabgrass	<i>Digitaria sp.</i>	C	6	SA
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	C	C	SA
Dallisgrass	<i>Paspalum dilatatum</i>	S	C*	P
Downy Brome	<i>Bromus tectorum</i>	C	—	WA
Dropseed, Tall	<i>Sporobolus cryptandrus</i>	S	C	A/P
Fescue, Tall	<i>Festuca arundinacea</i>	C	C*	P
Foxtail				
Giant	<i>Setaria faberi</i>	C	C	SA
Green	<i>Setaria viridis</i>	C	C	SA
Knotroot	<i>Setaria geniculatus</i>	S	6	SA
Purple Robust	<i>Setaria viridis</i>	S	S	SA
Yellow	<i>Setaria glauca</i>	C	4	SA
Garlic, Wild	<i>Allium vineale</i>	C	C	P
Goosegrass	<i>Elusine indica</i>	C	3S	SA
Itchgrass	<i>Rottboellia cochinchinensis</i>	—	C*	SA
Johnsongrass				
Seedling	<i>Sorghum halepense</i>	C	C	SA
Rhizome	<i>Sorghum halepense</i>	—	C*	P
Medusahead	<i>Taeniatherum caput-medusae</i>	C	C	WA
Panicum				
Fall	<i>Panicum dichotomiflorum</i>	C	C	SA
Texas	<i>Panicum texanum</i>	C	C	SA
Ryegrass, Annual (Italian)	<i>Lolium multiflorum</i>	C	C	WA
Ryegrass, Perennial	<i>Lolium perenne</i>	—	C	P
Sandbur	<i>Cenchrus sp.</i>	S	C	A/P
Shattercane	<i>Sorghum bicolor</i>	C	C	SA
Signalgrass, Broadleaf	<i>Brachiaria platyphylla</i>	C	C	SA
Smutgrass	<i>Sporobolus indicus</i>	—	C	P
Stiltgrass, Japanese	<i>Microstegium vimineum</i>	C	C	A
Stinkgrass, Annual	<i>Eragrostis ciliaris</i>	C	2	SA
Torpedograss	<i>Panicum repens</i>	—	C	P
Vaseygrass	<i>Paspalum urvillei</i>	—	C	P
Wild Oats	<i>Avena fatua</i>	—	C	WA
SEDGES/RUSHES				
Nutsedge				
Yellow	<i>Cyperus esculentus</i>	C	C	P
Purple	<i>Cyperus rotundus</i>	C	C	P
Rush	<i>Juncus sp.</i>	S	4	A/P

¹ C = control, S = suppression

² Maximum plant height in inches at time of application

³ Growth habit: A=Annual, SA=Summer Annual, WA=Winter Annual, B=Biennial, P=Perennial

⁴ Some species are tolerant and resistant biotypes are possible.

⁵ For annual control. The addition of 1-2 pints of 2,4-D will aid in burndown.

⁶ For best control apply in the fall.

*See "SPECIAL WEED CONTROL" section

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

To the extent consistent with applicable law, BASF makes no other express or implied warranty of fitness or merchantability or any other express or implied warranty.

To the extent consistent with applicable law, Buyer's exclusive remedy and BASF's exclusive liability, whether in contract, tort, negligence, strict liability, or otherwise, shall be limited to repayment of the purchase price of the product.

To the extent consistent with applicable law, BASF and the Seller disclaim any liability for consequential, special or indirect damages resulting from the use or handling of this product.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

0408

USES WITH OTHER PRODUCTS (TANK-MIXES)

If this product is used in combination with any other product except as specifically recommended in writing by BASF, then to the extent consistent with applicable law, BASF shall have no liability for any loss, damage, or injury arising out of its use in any such combination not so specifically recommended. If used in combination recommended by BASF, to the extent consistent with applicable law, the liability of BASF shall in no manner extend to any damage, loss or injury not directly caused by the inclusion of the BASF product in such combination use, and in any event, to the extent consistent with applicable law, shall be limited to return of the amount of the purchase price of the BASF product.

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BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709



The Chemical Company

Safety data sheet

PLATEAU®

Revision date : 2008/01/31

Version: 1.4

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(30128281/MDS CPA US/EN)

1. Substance/preparation and company identification

Company

BASF CORPORATION

100 Campus Drive

Florham Park, NJ 07932, USA

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP

Substance number:	000000063415
Molecular formula:	C14 H16 N3 O3.N H4
Molecular weight:	292.34 g/mol
Chemical family:	imidazole derivative
Synonyms:	Imazapic ammonium salt

2. Composition/information on ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
104098-49-9	23.6 %	3-Pyridinecarboxylic acid, 2-(4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl)-5-methyl-, monoammonium salt (Replaced by 115 136-53-3)
	76.4 %	Proprietary ingredients

3. Hazard identification

Emergency overview**CAUTION: KEEP OUT OF REACH OF CHILDREN.****KEEP OUT OF REACH OF DOMESTIC ANIMALS.**

Avoid inhalation of mists/vapours.

Avoid contact with the skin, eyes and clothing.

Wash thoroughly after handling.

Potential health effects

See Product Label for additional precautionary statements.

Primary routes of exposure

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Relatively nontoxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.

Irritation:

May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

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Sensitization:

Skin sensitizing effects were not observed in animal studies.

Repeated dose toxicity:

No other known chronic effects.

Medical conditions aggravated by overexposure:

Individuals with pre-existing diseases of the respiratory, skin or eyes may have increased susceptibility to excessive exposures.

Potential environmental effects

Aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic invertebrates.

Acutely harmful for aquatic plants.

There is a high probability that the product is not acutely harmful to fish.

Terrestrial toxicity:

With high probability not acutely harmful to terrestrial organisms.

4. First-aid measures

General advice:

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

Note to physician

Antidote: No known specific antidote.

Treatment: Treat symptomatically.

5. Fire-fighting measures

Flash point: > 200 °F (Unspecified)

Suitable extinguishing media:

foam, dry extinguishing media, carbon dioxide, water spray

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons,

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If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions:

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions:

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Cleanup:

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and storage

Handling

General advice:

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Storage

General advice:

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Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

Storage incompatibility:

General: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Temperature tolerance

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure controls and personal protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves. Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and chemical properties

Form:

liquid

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Odour:	odourless	
Colour:	amber	
pH value:	6.4 - 7	
Density:	1.07 - 1.09 g/cm ³	
Relative density:	1.07 - 1.09	
Partitioning coefficient n-octanol/water (log Pow):		Not applicable
Solubility in water:		fully soluble

10. Stability and reactivity

Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage.

Substances to avoid:

strong oxidizing agents

Hazardous reactions:

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

Decomposition products:

Hazardous decomposition products; No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

Corrosion to metals:

Corrosive effect on: zinc iron mild steel

11. Toxicological information

Acute toxicity

Oral:

LD50/rat: > 5,000 mg/kg

Inhalation:

LC50/rat: > 2.38 mg/l / 4 h

Moderately toxic.

LC50/rat: > 9.52 mg/l / 1 h

Dermal:

LD50/rabbit: > 5,000 mg/kg

Skin irritation:

rabbit: non-irritant (Primary skin Irritation test)

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Eye irritation :
rabbit: non-irritant

Sensitization:
Skin sensitization test/guinea pig:
Skin sensitizing effects were not observed in animal studies.
Genetic toxicity:
Information on: *imazapic*
No mutagenic effect was found in various tests with microorganisms and mammals.

Carcinogenicity:
Information on: *imazapic*
In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

Reproductive toxicity:
Information on: *imazapic*
The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity/teratogenicity:
Information on: *imazapic*
No indications of a developmental toxic / teratogenic effect were seen in animal studies.

12. Ecological information

Information on: *imazapic*

Evaluation: Not readily biodegradable (by OECD criteria).

Environmental toxicity

Information on: *imazapic*
Acute and prolonged toxicity to fish:
Rainbow trout/LC50 (96 h): > 100 mg/l

Information on: *imazapic*
Acute toxicity to aquatic invertebrates:
Daphnia magna/EC50 (48 h): > 100 mg/l

Information on: *imazapic*
Toxicity to aquatic plants:
green algae/EC50 (120 h): > 51.7 µg/l
algae/EC50: > 0.053 ppm

Information on: *imazapic*
Other terrestrial non-mammals:
mallard duck/LC50: > 5,000 ppm
With high probability not acutely harmful to terrestrial organisms.
Honey bee/LD50: > 100 µg/bee
With high probability not acutely harmful to terrestrial organisms.

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Other ecotoxicological advice:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated.

Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law.

If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations.

Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

This product is not regulated by RCRA.

14. Transport information

Reference Bill of Lading

15. Regulatory information

Federal Regulations

Registration status:

TSCA, US

released / exempt

OSHA hazard category:

Skin and/or eye irritant

SARA hazard categories (EPCRA 311/312): Acute

State regulations

CA Prop. 65:

There are no listed chemicals in this product.

16. Other information

Refer to product label for EPA registration number.

Recommended use: herbicide

Local contact information

Product Stewardship

919 547-2000

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END OF DATA SHEET



Pesticide Application Report/Treatment Form

ADMINISTRATIVE INFORMATION

Date of treatment (1 form per day) _____ Contact/phone number _____

Where are you treating? _____ Allotment _____
(Specific examples: Tule Cyn., Trout Ck., N. of Easy Ranch, along Hwy. 76)

Township ___ N or S & Range ___ E & W Section(s) _____

Please circle (road-side, dry wash, wetland, rangeland, pasture)

What plant(s) are you treating? _____

Please circle treatment method(s), (spray, stump-cut, spot treatment, mechanical)

HERBICIDE INFORMATION

Name of the herbicide (A) _____ Name of herbicide, (B) _____

If you are using an additive or surfactant, What is the name? _____

MEASUREMENTS * Please circle unit of measure (Please do not give ratios like 3:1 mix)

How many (ounces, pounds, pints, quarts, gallons) of herbicide (A)?
Per tank _____ Total used at the end of the day _____

How many (ounces, pounds, pints, quarts, gallons) of herbicide (B)?
Per tank _____ Total used at the end of the day _____

How many (ounces, pounds, pints, quarts, gallons) of additive are you using?
Per tank _____ Total used at the end of the day _____

Lbs. of AI/AE per Acre/treatment? Herbicide A _____ Herbicide B _____
If same products are used multiple times per day please just total the use per day.

Example Dry (AI) Total Dry Ounces (/) 16=Lbs. (X) % AI = Lbs. of AI (/) Total acres
60oz / 16 = 3.75 Lbs. (0.60% AI) = 2.25 Lbs. of AI/15 acres = 0.15 Lbs. of AI/acre

Example Liquid (AE) Total fluid Ounces (/) 128 = Gal. (X) Lbs. of AE (/) Total acres
625 ounces / 128 = 4.88 gal. (3.74 AE) = 18.26 Lbs. of AE / 15 acres = 1.22 Lbs. of AE/acre

ACREAGE

Estimate the total amount of acres treated today* _____

Was GPS used to create a shapefile of the treatment site(s): Yes _____ No _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RISK MANAGEMENT WORKSHEET

1. Organization and Location <p style="text-align: center;">BLM-NV-Battle Mountain District</p>			2. Page <u>1</u> of <u>2</u>		
3. Operation / Task <p style="text-align: center;">Weed Management-Herbicide Use</p>		4. Beginning Date: <p style="text-align: center;">12/2012</p>	5. Ending Date: <p style="text-align: center;">12/2013</p>	6. Date Prepared <p style="text-align: center;">12/2012</p>	
7. Prepared by (Name / Duty Position) Kent Bloomer, Weed Management Specialist					

8. Identified Hazards (Be Specific)	9. Assess the Hazards: Initial Risk				10. Control Measures Developed for Identified Hazards: (Specific measures taken to reduce the probability of a hazard)				11. Assess the Hazard's Residual Risk:				12. How to Implement the Controls: (Include SOP's, references, etc.)	13. Supervisors and Evaluation by: (Continuous Leader Checks, Buddy System, etc.)
	L	M	H	E	(Be Specific)				L	M	H	E	(Be Specific)	(Be Specific)
Herbicide Mixing & Handling		X			-Follow label direction (Label is the Law!) -Set containers where they will not spill -Wear appropriate PPE -Triple rinse and destroy containers -Lock up all herbicides at the office on pesticide storage cabinets -Keep an adequate amount of fresh water on-site for spills and cleaning -Clean sprayers in the field and do not store herbicide in sprayers at the office. -Use truck tanks for fresh water only. First Aid: Keep first aid supplies with sprayer, MSDS/Label sheets w/sprayer				X				- Employees trained via state, BLM, and in-house training.	-Supervisor ensures employees are trained and certified
Treatment crew leaders ensure first aid supplies and MSDS/Label sheets are up to date.														

14. Remaining Risk Level After Control Measures Are Implemented: (CIRCLE HIGHEST REMAINING RISK LEVEL)	LOW (Line Supervisor)	MEDIUM (Branch Chief)	HIGH (District Manager)	EXTREMELY HIGH (Must be State Director/Associate)
--	---------------------------------	---------------------------------	-----------------------------------	---

15. RISK DECISION AUTHORITY: **(Approval/Authority Signature Block)** (If Initial Risk Level is Medium, High or Extremely High, Brief Risk Decision Authority at that level on Controls and Control Measures used to reduce risks) (Note: if the person preparing the form signs this block, the signature indicates only that the appropriate risk decision authority was notified of the initial risk level, control measures taken and appropriate resources requested; and that the risk was accepted by the decision authority.)

(Signature)

CONTINUED

8. Identified Hazards	9. Assess the Hazards: Initial Risk				10. Control Measures Developed for Identified Hazards: <i>(Specific measures taken to reduce the probability of a hazard)</i>	11. Assess the Hazard's Residual Risk:				12. How to Implement the Controls: <i>(Include SOP's, references, etc.)</i>	13. Supervisors and Evaluation by: <i>(Continuous Leader Checks, Buddy System, etc.)</i>
(Be Specific)	L	M	H	E	(Be Specific)	L	M	H	E	(Be Specific)	(Be Specific)
Weed Spraying		X			<ul style="list-style-type: none"> -Orient spray equipment downwind of infestation. -Follow Label guidelines for soil, water, and weather conditions. -Wear appropriate PPE per Label. -Check equipment for leaks and components for proper operation. -Periodically re-calibrate sprayer for proper application rates. -Avoid unnecessary damage to non-target plants. 	X				-Pre-season training	-Supervisor ready training package for season start. Periodic field checks during season.
Transportation of Herbicides	X				<ul style="list-style-type: none"> -Secure herbicide containers in leak-proof containers away from sharp objects, Not in the open truck bed. -All chemicals should be transported in their original container w/attached Label -Secure all chemical application equipment appropriately 	X				- Pre-season training	-Supervisor ensures training as part of pre-season startup
Herbicide Storage	X				<ul style="list-style-type: none"> -Store all herbicide and adjuvants in their original containers in approved pesticide storage cabinets at the office. -Periodically check cabinet for leaking containers 	X				-Same as above	-Supervisor/crew leader ensure compliance.
Herbicide spills at office	X				<ul style="list-style-type: none"> -Use spill kit (outside of storage room). -- -Notify HAZMAT coordinator and Supervisor. 	X				-Proper handling and storage of containers	-Supervisor/crew leader ensure compliance checks.
Sprayer Storage	X					X				- Pre-season training	-Supervisor/crew leader ensure compliance checks.

Appendix F
Migratory Birds

**BREEDING AND MIGRATORY BIRDS WITH AT LEAST A TEN PERCENT
PROBABILITY OF OCCURRENCE WITHIN THE PROJECT AREA**

Common Name	Scientific Name	PIF1 Immediate Action	PIF Long- Term Planning and Responsibility	PIF Management	Region 9 BCC
American Avocet	<i>Recurvirostra americana</i>	NO	NO	NO	NO
American Coot	<i>Fulica americana</i>	NO	NO	NO	NO
American Widgeon	<i>Anas americana</i>	NO	NO	NO	NO
Bank Swallow	<i>Riparia riparia</i>	NO	NO	NO	NO
Barn Swallow	<i>Hirundo rustica</i>	NO	NO	NO	NO
Brewer's Sparrow	<i>Spizella breweri</i>	NO	NO	YES	YES
California Quail	<i>Callipepla californica</i>	NO	NO	NO	NO
Chukar	<i>Alectoris chukar</i>	NO	NO	NO	NO
Common Nighthawk	<i>Chordeiles minor</i>	NO	NO	NO	NO
Common Poorwill	<i>Phalaenoptilus nuttallii</i>	NO	NO	NO	NO
Dark-Eyed Junco	<i>Junco hyemalis</i>	NO	NO	NO	NO
Ferruginous Hawk	<i>Buteo regalis</i>	NO	NO	NO	YES
Fox Sparrow	<i>Passerella iliaca</i>	NO	NO	NO	NO
Golden Eagle	<i>Aquila chrysaetos</i>	NO	NO	NO	YES
Green-Tailed Towhee	<i>Pipilo chlorurus</i>	NO	YES	NO	YES
Horned Lark	<i>Eremophila alpestris</i>	NO	NO	NO	NO
House Finch	<i>Carpodacus mexicanus</i>	NO	NO	NO	NO
House Sparrow	<i>Passer domesticus</i>	NO	NO	NO	NO
House Wren	<i>Troglodytes aedon</i>	NO	NO	NO	NO
Killdeer	<i>Charadrius vociferus</i>	NO	NO	NO	NO
Lark Sparrow	<i>Chondestes grammacus</i>	NO	NO	NO	NO
Loggerhead Shrike	<i>Lanius ludovicianus</i>	NO	NO	NO	YES
Long-Billed Curlew	<i>Numenius americanus</i>	NO	NO	NO	YES
Mountain	<i>Sialia currucoides</i>	NO	YES	NO	NO

1 PIF = Partners in Flight

Common Name	Scientific Name	PIF1 Immediate Action	PIF Long- Term Planning and Responsibility	PIF Management	Region 9 BCC
Bluebird					
Mountain Chickadee	<i>Poecile gambeli</i>	NO	NO	NO	NO
Mourning Dove	<i>Zenaida macroura</i>	NO	NO	NO	NO
Northern Harrier	<i>Circus cyaneus</i>	NO	NO	NO	NO
Prairie Falcon	<i>Falco mexicanus</i>	NO	NO	NO	NO
Rock Pigeon	<i>Columba livia</i>	NO	NO	NO	NO
Rock Wren	<i>Salpinctes obsoletus</i>	NO	NO	NO	NO
Sage Sparrow	<i>Amphispiza belli</i>	NO	YES	NO	YES
Sage Thrasher	<i>Oreoscoptes montanus</i>	NO	YES	NO	YES
Savannah Sparrow	<i>Passerculus sandwichensis</i>	NO	NO	NO	NO
Say's Phoebe	<i>Sayornis saya</i>	NO	NO	NO	NO
Scott's Oriole	<i>Icterus parisorum</i>	NO	NO	NO	NO
Short-Eared Owl	<i>Asio flammeus</i>	NO	NO	NO	NO
Spotted Towhee	<i>Pipilo maculatus</i>	NO	NO	NO	NO
Swainson's Hawk	<i>Buteo swainsoni</i>	NO	NO	YES	NO
Turkey Vulture	<i>Cathartes aura</i>	NO	NO	NO	NO
Vesper Sparrow	<i>Pooecetes gramineus</i>	NO	NO	NO	NO
Violet-Green Swallow	<i>Tachycineta thalassina</i>	NO	NO	NO	NO
Western Kingbird	<i>Tyrannus verticalis</i>	NO	NO	NO	NO
Western Meadowlark	<i>Sturnella neglecta</i>	NO	NO	NO	NO
Western Screech Owl	<i>Megascops kennicottii</i>	NO	NO	NO	NO
White-Crowned Sparrow	<i>Zonotrichia leucophrys</i>	NO	NO	NO	NO
Wild Turkey	<i>Meleagris gallopavo</i>	NO	NO	NO	NO

Appendix G

Noxious Weeds of Nevada

NOXIOUS WEEDS OF NEVADA

Common Name	Scientific Name	Native Status
Category A		
African rue	<i>Peganum harmala</i>	L48 (I)
Austrian fieldcross	<i>Rorippa austriaca</i>	L48 (I), CAN (I)
Austrian peaweed	<i>Sphaerophysa salsula</i>	L48 (I), CAN (I)
Black henbane	<i>Hyoscyamus niger</i>	L48 (I), CAN (I)
Camelthorn	<i>Alhagi pseudalhagi</i>	-
Common Crupina	<i>Crupina vulgaris</i>	L48 (I)
Dalmatian toadflax	<i>Linaria dalmatica</i>	L48 (I), CAN (I)
Dyer's woad	<i>Isatis tinctoria</i>	L48 (I), CAN (W)
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>	L48 (I), AK (I), CAN (I)
Giant Salvinia	<i>Salvinia molesta</i>	L48 (I), HI (I)
Goats rue	<i>Galega officinalis</i>	L48 (I), CAN (I)
Green fountain grass	<i>Pennisetum setaceum</i>	-
Houndstongue	<i>Cynoglossum officinale</i>	L48 (I), CAN (I)
Hydrilla	<i>Hydrilla verticillata</i>	L48 (I)
Iberian starthistle	<i>Centaurea iberica</i>	L48 (I)
Klamath weed	<i>Hypericum perforatum</i>	L48 (I), HI (I), CAN (I), SPM (I)
Malta starthistle	<i>Centaurea melitensis</i>	L48 (I), HI (I), CAN (I)
Mayweed chamomile	<i>Anthemis cotula</i>	L48 (I), AK (I), HI (I), CAN (I)
Mediterranean sage	<i>Salvia aethiopis</i>	L48 (I)
Purple loosestrife	<i>Lythrum salicaria</i> , <i>Lythrum virgatum</i>	L48 (I), CAN (I), SPM (I)
Purple starthistle	<i>Centaurea calcitrapa</i>	L48 (I), CAN (I)
Rush skeletonweed	<i>Chondrilla juncea</i>	L48 (I), CAN (I)
Sow thistle	<i>Sonchus arvensis</i>	L48 (I), AK (I), CAN (I), SPM (I)
Spotted knapweed	<i>Centaurea maculosa</i>	-
Squarrose knapweed	<i>Centaurea virgata</i>	-
Sulfur cinquefoil	<i>Potentilla recta</i>	L48 (I), CAN (I)
Syrian bean caper	<i>Zygophyllum fabago</i>	-
Yellow starthistle	<i>Centaurea solstitialis</i>	L48 (I), CAN (I)
Yellow toadflax	<i>Linaria vulgaris</i>	L48 (I), AK (I), CAN (I), GL (I), SPM (I)
Category B		
Carolina horsenettle	<i>Solanum carolinense</i>	L48 (N), CAN (I)
Diffuse knapweed	<i>Centaurea diffusa</i>	L48 (I), CAN (I)
Leafy spurge	<i>Euphorbia esula</i>	L48 (I), CAN (I)
Medusahead	<i>Taeniatherum caput-medusae</i>	L48 (I)
Musk thistle	<i>Carduus nutans</i>	L48 (I), CAN (I)
Russian knapweed	<i>Acroptilon repens</i>	-

Common Name	Scientific Name	Native Status
Scotch thistle	Onopordum acanthium	L48 (I), CAN (W)
White horenettle	Solanum elaeagnifolium	L48 (N), HI (I), PR (N)
Category C		
Canada thistle	Cirsium arvense	L48 (I), AK (I), CAN (I), GL (I), SPM (I)
Hoary cress	Cardaria draba	L48 (I), CAN (I)
Johnsongrass	Sorghum halepense	L48 (I), HI (I), PR (I), CAN (I)
Perennial pepperweed	Lepidium latifolium	L48 (I), CAN (I)
Poison Hemlock	Conium maculatum	L48 (I), CAN (I)
Puncturevine	Tribulus terrestris	L48 (I), HI (I), CAN (W)
Saltcedar (tamarisk)	Tamarix parviflora DC.	L48 (I)
Water Hemlock	Cicuta maculata	L48 (N), AK (N), CAN (N)

<i>Code</i>	<i>Native Status Jurisdiction</i>
<i>L48</i>	<i>Lower 48 States</i>
<i>AK</i>	<i>Alaska</i>
<i>HI</i>	<i>Hawaii</i>
<i>PR</i>	<i>Puerto Rico</i>
<i>VI</i>	<i>Virgin Islands</i>
<i>CAN</i>	<i>Canada</i>
<i>GL</i>	<i>Greenland</i>
<i>SPM</i>	<i>St. Pierre and Miquelon</i>
<i>I</i>	<i>Introduced</i>
<i>N</i>	<i>Native</i>
<i>W</i>	<i>Waif</i>

Appendix H

Category 5 Waters: 303(d) List for the Humboldt River Basin

CATEGORY 5 WATERS
303(d) List for the Humboldt River Basin

Waterbody ID	Size	Water Name (Reach Description)	Parameter
NV04-NF-75_00	4.4 M	Beaver Creek <i>(from its origin to the Beaver Creek, West Fork)</i>	Temperature, water
NV04-NF-76_00	20 M	Beaver Creek, East Fork <i>(from its origin to the Beaver Creek, East Fork)</i>	Temperature, water
NV04-NF-77_00	28.6 M	Beaver Creek, West Fork <i>(from its origin to the Beaver Creek, East Fork)</i>	Phosphorus (Total)
			Temperature, water
NV04-LH-61_00	5.8 M	Cabin Creek <i>(its entire length)</i>	Temperature, water
			Zinc
NV04-NF-142_00	5.4 M	Cabin Creek <i>(from its origin to Beaver Creek, East Fork)</i>	Temperature, water
NV04-LH-95-B_00	2,177 A	Chimney Reservoir <i>(the entire reservoir)</i>	Flouride
			Iron
			Mercury in Fish Tissue
			Phosphorus (Total)
NV04-HR-96_00	5.4 M	Cole Creek <i>(from its origin to Pine Creek)</i>	pH
NV04-MR-104_00	6.5 M	Conners Creek <i>(from its origin to Hanks Creek, South Fork)</i>	Phosphorus (Total)
			Temperature, water
NV04-SF-62_00	24.1 M	Dixie Creek <i>(from its origin to its confluence with the Humboldt River, South Fork)</i>	Iron
			Phosphorus (Total)
NV04-NF-127_00	0.1 M	Dry Creek <i>(from the waste rock dump to the Humboldt River, North Fork)</i>	Selenium
			Total Dissolved Solids
NV04-HR-01_00	91.1 M	Humboldt River <i>(from the upstream source of the main stem to Osino)</i>	Iron
			Phosphorus (Total)
NV04-HR-02_00	81 M	Humboldt River <i>(from Osino to Palisade)</i>	Escherichia coli
			Iron
NV04-HR-03_00	117 M	Humboldt River <i>(from Palisade to Battle Mountain)</i>	Iron
			Turbidity

Waterbody ID	Size	Water Name (Reach Description)	Parameter
NV04-HR-04_00	74.9 M	Humboldt River (from Battle Mountain to Comus)	Fluoride
			Iron
			Turbidity
NV04-HR-05_00	145.9 M	Humboldt River (from Comus to Imlay)	Iron
			Turbidity
NV04-HR-06_00	20.6 M	Humboldt River (from Imlay to Woosley [excluding Rye Patch Reservoir, see NV04-HR-81_00])	Fluoride
			Iron
			Phosphorus (Total)
NV04-HR-07-C_00	11.8 M	Humboldt River (from Woosley to Rodgers Dam [Class C])	Iron
			Total Dissolved Solids
NV04-HR-08-D_01	22.8 M	Humboldt River (from Rodgers Dam to the Humboldt Sink)	Boron
			Fluoride
			Iron
			Selenium
NV04-NF-16-A_02	1.6 M	Humboldt River, North Fork (from Sammy Creek to Cole Canyon Creek)	Total Dissolved Solids
NV04-NF-17-B_00	41.6 M	Humboldt River, North Fork (from the National Forest Boundary to its confluence with Beaver Creek)	Phosphorous (Total)
NV04-NF-56-B_00	44.4 M	Humboldt River, North Fork (from its confluence with Beaver Creek to its confluence with the Humboldt River)	Escherichia coli
			Manganese
			Phosphorous (Total)
NV04-SF-19-B_01	6.7 M	Humboldt River, South Fork (from Lee to South Fork Reservoir)	Temperature, water
NV04-SF-19-B_02	18.6 M	Humboldt River, South Fork (from South Fork Reservoir to the Humboldt River)	Oxygen, Dissolved
NV04-SF-57-B_00	12.8 M	Huntington Creek (from its confluence with Smith Creek to its confluence with the Humboldt River, South Fork)	Phosphorous (Total)
			Total Dissolved Solids
NV04-NF-97_00	10.6 M	Indian Creek (from its origin to its confluence with the Humboldt River, North Fork)	Fecal Coliform
			Phosphorous (Total)

Waterbody ID	Size	Water Name (Reach Description)	Parameter
NV04-LH-47-C_00	55.8 M	Little Humboldt River (its entire length)	Phosphorous (Total)
NV04-LH-45-A_00	13.2 M	Little Humboldt River, North Fork (from its origin to the National Forest Boundary)	Cadmium
			Copper
			Iron
			Zinc
NV04-LH-46-B_00	35.2 M	Little Humboldt River, North Fork (from the National Forest Boundary to Chimney Reservoir)	Temperature, water
NV04-LH-48-A_00	26 M	Little Humboldt River, South Fork (from its origin to the Elko-Humboldt county line)	Escherichia coli
			Temperature, water
NV04-LH-49-B_00	15.4 M	Little Humboldt River, South Fork (from the Elko-Humboldt county line to Chimney Reservoir)	Iron
			Phosphorous (Total)
NV04-SF-112_00	10 M	Little Porter Creek (from its origin to the East line of Range 54 E)	Fecal Coliform
			Phosphorous (Total)
NV04-HR-26-B_00	33.5 M	Maggie Creek (from where it is formed by tributaries to its confluence with Jack Creek)	Phosphorous (Total)
NV04-HR-27-C_00	9.5 M	Maggie Creek (from its confluence with Jack Creek to its confluence with Soap Creek)	Temperature, water
NV04-HR-59-C_00	14.2 M	Maggie Creek (from its confluence with Soap Creek to its confluence with the Humboldt River)	Escherichia coli
			Fecal Coliform
NV04-MR-09-A_00	25.5 M	Mary's River (from its origin to the point where Mary's River crosses the East line of T. 42 N., R. 59 E., M.D.B. & M.)	Temperature, water
NV04-MR-10-B_00	57 M	Mary's River (from the East line of T. 42 N.,	Oxygen, Dissolved

Waterbody ID	Size	Water Name (Reach Description)	Parameter
		<i>R. 59 E., M.D.B. & M. to the Humboldt River)</i>	Temperature, water
NV04-HR-100_00	10.7 M	Nelson Creek (from its origin to its confluence with Willow Creek)	Temperature, water
NV04-SF-113_00	11.3 M	Pearl Creek (from its origin to Huntington Creek)	Temperature, water
NV04-HR-58_00	26 M	Pine Creek (from its confluence with Dry Creek to the Humboldt River)	Escherichia coli
			Iron
			pH
			Phosphorous (Total)
			Selenium
			Total Dissolved Solids
			Total Suspended Solids
NV04-RR-38-B_00	36.2 M	Reese River (from its confluence with Indian Creek to State Route 722 [old U.S. Highway 50])	pH
			Temperature, water
NV04-SF-116_00	15 M	Robinson Creek (from its origin to Huntington Creek)	Temperature, water
NV04-HR-32-A_00	29.1 M	Rock Creek (from its origin to Squaw Valley Ranch)	Temperature, water
NV04-HR-153_00	6.8 M	Rodeo Creek (from its origin to its confluence with Boulder Creek)	Arsenic
NV04-HR-81_00	16,170 A	Rye Patch Reservoir (the entire reservoir)	Mercury in Fish Tissue
			Phosphorous (Total)
NV04-NF-126_01	0.6 M	Sammy Creek (from its origin to the waste rock dump)	Arsenic
			Selenium
NV04-NF-126_02	0.6 M	Sammy Creek (from the waste rock dump to Humboldt River, North Fork)	Selenium
			Total Dissolved Solids
NV04-LH-99_00	3.4 M	Secret Creek (from its origin to its confluence with the Little Humboldt River, South Fork)	Temperature, water
NV04-NF-93_00	9.9 M	Sheep Creek	Total Dissolved Solids

Waterbody ID	Size	Water Name (Reach Description)	Parameter
		<i>(from its origin to the Humboldt River, North Fork)</i>	
NV04-HR-67_00	15.2 M	Sherman Creek <i>(from its origin to its confluence with the Humboldt River)</i>	Copper
			Escherichia coli
			Iron
			Phosphorous (Total)
NV04-HR-92_00	9 M	Simon Creek <i>(from its origin to Maggie Creek)</i>	Total Dissolved Solids
NV04-SF-81_00	1650 A	South Fork Reservoir <i>(the entire reservoir)</i>	Oxygen, Dissolved
NV04-HR-118_00	35.4 M	Susie Creek <i>(from its origin to the Humboldt River)</i>	Turbidity
NV04-MR-11-A_00	12 M	Tabor Creek <i>(from its origin to the East line of T. 40 N., R. 60 E., M.D.B. & M.)</i>	Escherichia coli
			Fecal Coliform
NV04-SF-131_00	15.2 M	Tenmile Creek <i>(from Spring Creek to the Humboldt River, South Fork)</i>	Iron
NV04-HR-89_00	8.4 M	Trout Creek <i>(from its origin to Pine Creek)</i>	Escherichia coli
			Fecal Coliform
			Iron
			pH
NV04-NF-125_00	0.3 M	Water Canyon Creek <i>(from the waste rock dump to the Humboldt River, North Fork)</i>	Selenium
			Total Dissolved Solids
NV04-HR-34-A_00	16.3 M	Willow Creek <i>(from its origin to Willow Creek Reservoir)</i>	Temperature, water
NV04-HR-83_00	15 M	Willow Creek <i>(from its origin to Pine Creek, below Buckhorn Mine)</i>	Total Dissolved Solids
NV04-NF-133_00	4.5 M	Winters Creek <i>(from its origin to Foreman Creek)</i>	Total Dissolved Solids
NV04-HR-95_00	8.2 M	Woodruff Creek <i>(from its origin to the Humboldt River)</i>	Phosphorous (Total)
			Total Suspended Solids
			Turbidity

Source: Nevada Division of Environmental Protection, Bureau of Water Quality Planning, Nevada 2008-10 Water Quality Integrated Report, December 2012

Appendix I

Socioeconomic Tables

SOCIOECONOMIC TABLES

Table I-1
Project Area Population Density

Location	Population 2000	Land Area 2000 (mi ²)	Persons per mi ² , 2000	Population 2010	Land Area 2010 (mi ²)	Persons per mi ² , 2010
United States	281,421,906	3,794,083.06	79.6	308,745,538	3,796,742.23	87.4
Nevada	1,998,257	110,560.71	18.2	2,700,551	110,571.82	24.6
Lander County	5,794	5,519.47	1.1	5,775	5,519.49	1.1

Source: U.S. Census Bureau 2000, U.S. Census Bureau 2010

Table I-2
Study Area Income Distribution

Income	Year	United States	Nevada	Lander County	Battle Mountain
Median Household Income	2010	\$50,046	\$51,001	\$66,525	\$65,318
	2000	\$41,994	\$44,581	\$46,067	\$42,981
Per Capita Income	2010	\$26,059	\$25,284	\$25,287	\$22,596
	2000	\$21,587	\$21,989	16,998	\$16,975
Persons Below Poverty Level	2010	15.3%	14.9%	12.2%	16.4%
	2000	12.4%	10.5%	12.5%	11.8%
Families Below Poverty Level	2010	11.3%	11.1%	11.7%	15.2%
	2000	9.2%	7.5%	8.6%	7.8%

Source: U.S. Census Bureau 2000, U.S. Census Bureau 2006-2010

Table I-3
Study Area Employment Characteristics

Industry	United States	Nevada	Lander County	Battle Mountain
Agriculture, Forestry, Fishing and Hunting, Mining	2,720,289	21,256	969	604
	1.9%	1.8%	38.3%	38.3%
Construction	8,563,737	75,586	247	181
	6.1%	6.3%	9.8%	11.5%
Manufacturing	14,665,712	49,290	45	15
	10.4%	4.1%	1.8%	1.0%
Wholesale Trade	3,894,622	26,473	58	0
	2.8%	2.2%	2.3%	0.0%
Retail Trade	16,335,831	139,150	266	207

Industry	United States	Nevada	Lander County	Battle Mountain
	11.6%	11.5%	10.5%	13.1%
Transportation and Warehousing, Utilities	6,987,923	55,706	183	132
	5.0%	4.6%	7.2%	8.4%
Information	2,950,890	20,962	16	16
	2.1%	1.7%	0.6%	1.0%
Finance and Insurance and Real Estate and Rental Leasing	9,233,893	74,294	52	52
	6.6%	6.2%	2.1%	3.3%
Professional, Scientific, and Management, Administrative	15,079,731	121,510	113	6
	10.7%	10.1%	4.5%	0.4%
Education, Health Care, Social Assistance	32,601,321	181,228	241	156
	23.2%	15.0%	9.5%	9.9%
Arts, Entertainment, Recreation, Accommodation, and Food Services	13,210,187	321,960	191	129
	9.4%	26.7%	7.5%	8.2%
Other Services Except Public Administration	7,056,697	55,182	25	12
	5.0%	4.6%	1.0%	0.8%
Public Administration	7,098,715	62,285	124	67
	5.1%	5.2%	4.9%	4.2%
Total Employment	140,399,548	1,204,882	2,530	1,577

Source: U.S. Census Bureau, 2007-2011

Appendix J

Data Response Letters

Data Request Form for the Nevada Department of WildlifeJ-1

Data Request Form for the Nevada Natural Heritage ProgramJ-2

Response Letter from Nevada Natural Heritage ProgramJ-3

Response List from Nevada Natural Heritage ProgramJ-4

Response Email from Nevada Fish and Wildlife OfficeJ-6

Information, Planning, and Conservation System (IPaC), USFWSJ-7

Response Letter from Nevada Department of WildlifeJ-11



BRIAN SANDOVAL
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

KENNETH E. MAYER
Director

RICHARD L. HASKINS, II
Deputy Director

PATRICK O. CATES
Deputy Director

GIS DATA REQUEST FORM

In order to refine our database queries and provide the most detailed information available in response to wildlife resources data requests, the Nevada Department of Wildlife (NDOW) requires project description information that details the need for NDOW data and how it would be used. To this effect, the NDOW requires information regarding the location and scope of the project that calls for NDOW data. This information will allow the NDOW to better anticipate resource management needs, as well as provide the information necessary for appropriate staff review and approval of this request.

DATA REQUEST CONTACT INFORMATION:

Name:	Melanie Register	Title:	Environmental Planner
Organization:	Environmental Express Services, Inc.		
Address:	5944 FM 1863	City:	Bulverde
		State:	TX
Phone Number:	830-980-1830	Email:	mregister@envexpress.com
		Zip:	78163

PROPOSED PROJECT INFORMATION [ATTACH ADDITIONAL PAGES AS NEEDED]:

Project Name:	Battle Mountain WUI Project	Project Type¹:	fuels reduction
*Approximate Size (acres):	22,000	*Construction Start Date:	not applicable
*Schedule of Surface Disturbance: not applicable			
Permitting Authority:		Project Status²:	new
Project Scope³: GIS file of WUI Treatment Areas provided as separate file			

- * If applicable.
1. E.g. Solar/wind/geothermal (renewable) energy development; Fossil fuel energy development; Mining; Urban development; Energy transmission line; Pipeline; Communication line; Recreation; Restoration; Research or modeling (no surface disturbance); Other.
 2. New; Expansion/amendment to existing project; Restoration/reclamation.
 3. Description of the scope of area affected by the project. For targeted project locations, minimum requirements are: Public Land Survey System (PLSS) location information [Township/Range/Sections]; GIS data layers (e.g. shapefiles); or map documents.

TYPE OF DATA ANALYSIS REQUESTED (CHECK ONE):

Wildlife Resource Data Analysis (typical data request) **GIS Data Request** (Non-typical request - Data Sharing Agreement required)

The completion of this form will ensure that you receive the most accurate information available. No warranty is made by the NDOW as to the accuracy, reliability, or completeness of the data provided for individual use or aggregate use with other data. Information received may be considered **sensitive** and may contain information regarding the location of sensitive wildlife species. All appropriate measures should be taken to ensure the use of any data received is strictly limited to serve the needs of the project described above. Abuse of NDOW information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

Please submit form to: Chet Van Dellen – GIS Coordinator – cvandellen@ndow.org – 775.688.1565

NEVADA NATURAL HERITAGE PROGRAM DATA REQUEST FORM

Use this form to query the Nevada Natural Heritage Program database for location information of at-risk species. Please fill out this form as completely and specifically as possible, attaching additional sheets as needed. For more information on available species and data fields, fees, limitations, and restrictions, please visit our web site <<http://heritage.nv.gov>> or contact us for printed information. We cannot guarantee our response time; normal time is about two weeks, and we will strive to (and usually can) meet more urgent deadlines.

Date signed: 03/11/2013 Date needed: _____

Organization: Environmental Express Services, Inc. on behalf of the Bureau of Land Management, Battle Mountain District

Mailing Address: 5944 FM 1863, Bulverde, Texas 78163

Phone: 830-980-1830 FAX: 830-980-7799 email: ghagge@envexpress.com or mregister@envexpress.com

Project or Site Name: Battle Mountain, Nevada - WUI Fire Defense System

How will the information be used? preparation of an Environmental Assessment

KIND OF SEARCH

(see current fee schedule <<http://heritage.nv.gov/fees.htm>> for descriptions, costs, and examples)

Standard (one-time), OR... Annual Subscription: first year continuation

LIMIT SEARCH BY THE FOLLOWING CRITERIA

(check or complete all that apply to ensure you purchase only the records you want)

Location (please specify by township-range-section, map quadrangle, watershed, or other boundaries, and attach map(s) when possible; for GIS requests, submit polygon(s) of area(s) in UTM Zone-11 meter coordinates, NAD27 datum, as ArcView® shapefiles if possible):

Battle Mountain, Nevada / Lander County, Nevada

Shapefile attached

Species: all plants all animals all vertebrates all invertebrates

other (specify groups/taxa): _____

Status: all at-risk all federal T/E/candidate all state T/E all watch-list

Additional Limiting Criteria (please specify; see data catalog <<http://heritage.nv.gov/dataflds.htm>> for searchable fields):

FORMAT AND CONTENT OF SEARCH RESULTS

(see fee schedule <<http://heritage.nv.gov/fees.htm>> and data catalog <.../dataflds.htm> for format descriptions and available fields)

Standard Summary Records (name, status, location, precision, date), specify: printed ASCII text file

OR Complete or Customized (enter desired fields below) Records, specify: printed ASCII text file

OR ArcView® GIS shapefiles (complete records only), specify:

projection (none=UTM Zone-11 meters): _____ datum (blank=NAD27): _____

Custom Fields (enter names or types of ALL data fields to include for custom records):

HOW YOU WANT THE RESULTS SENT

Please Send: search results immediately cost estimate first exact cost first

Send by any of the following checked methods: U.S. Mail FAX email FedEx

For FedEx, include PHYSICAL address above, and specify account to charge:

BY SIGNING BELOW, I acknowledge that I have read and agreed to abide by the Nevada Natural Heritage Program's (NNHP's) current fee schedule <<http://heritage.nv.gov/fees.htm>> and its data limitations and restrictions <.../limitats.htm> (contact us for printed copies). I also agree that (1) all data supplied, and the analytic tools and processes from which they are derived, are the privileged, confidential property of NNHP, and/or The Nature Conservancy, Inc., and/or those who supplied the data to NNHP, and will not be provided to any other party without our consent; (2) in any use of the data, NNHP will be cited as a source, along with the year and month it supplied the data; and (3) while NNHP strives for accuracy and completeness, the data it supplies depend on the observations and research of many individuals and organizations, new data are constantly received, and in no case will the data be represented as a complete survey of any species or area.

Digitally signed by Gloria A. Hagge
DN: cn=Gloria A. Hagge, o=EES, ou,
email=mregister@envexpress.com, c=US
Date: 2013.03.12 11:06:50 -0500

Signature

Gloria A. Hagge

Name (please print)

President

Title

Please MAIL or FAX completed and signed form to: Nevada Natural Heritage Program, attn: Data Manager, 901 S Stewart St, suite 5002, Carson City NV 89701-5245. FAX (775) 684-2909, phone (775) 684-2905.

LEO DROZDOFF
Director

Department of Conservation
and Natural Resources

JENNIFER E. NEWMARK
Administrator

BRIAN SANDOVAL
Governor



Nevada Natural Heritage Program
Richard H. Bryan Building
901 S. Stewart Street, suite 5002
Carson City, Nevada 89701-5245
U.S.A.

tel: (775) 684-2900
fax: (775) 684-2909



STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program
<http://heritage.nv.gov>

18March 2013

Gloria A. Hagge
Environmental Express Services, Inc.
5944 FM 1863
Bulverde, TX 78163

RE: Data request received 11 March 2013

Dear Ms. Hagge:

We are pleased to provide the information you requested on endangered, threatened, candidate, and/or At Risk plant and animal taxa recorded within or near the WUI Fire Defense System Project area in Lander County. We searched our database and maps for the following, a five kilometer radius around:

Map provided with Data Request (northern portion of the Battle Mountain BLM District)

The enclosed printout lists the taxa recorded within the given area. Please be aware that habitat may also be available for, the Nevada viceroy, *Limenitis archippus lahontani*, a Taxon determined to be Critically Imperiled by the Nevada Natural Heritage Program, and the windloving buckwheat, *Eriogonum anemophilum*, a Nevada Bureau of Land Management Sensitive Species. The Nevada Department of Wildlife (NDOW) manages, protects, and restores Nevada's wildlife resources and associated habitat. Please contact Chet Van Dellen, NDOW GIS Coordinator (775.688.1565) to obtain further information regarding wildlife resources within and near your area of interest. Removal or destruction of state protected flora species (NAC 527.010) requires a special permit from Nevada Division of Forestry (NRS 527.270).

Please note that our data are dependent on the research and observations of many individuals and organizations, and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the taxa or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for checking with our program. Please contact us for additional information or further assistance.

Sincerely,

Eric S. Miskow
Biologist /Data Manager

At Risk Taxa Recorded Near the WUI Fire Defense System Project Area
 Compiled by the Nevada Natural Heritage Program for Environmental Express Services, Inc.
 13 March 2013

<u>Scientific name</u>	<u>Common name</u>	<u>Usfws</u>	<u>Blm</u>	<u>Usfs</u>	<u>State</u>	<u>Srank</u>	<u>Grank</u>	<u>UTME</u>	<u>UTM N</u>	<u>Prec</u>	<u>Last</u> <u>observed</u>
Plants											
<i>Astragalus pterocarpus</i>	winged milkvetch					S3	G3	506371.87	4491124.72	M	1941-06
<i>Eriogonum beatleyae</i>	Beatley buckwheat					S2	G2Q	513883.64	4472326.83	S	1985-06-17
<i>Eriogonum beatleyae</i>	Beatley buckwheat					S2	G2Q	512889.37	4474791.74	M	1986-06-26
<i>Penstemon tiehmii</i>	Tiehm beardtongue		N			S1	G1	508628.53	4471178.24	S	1987-07-31
<i>Penstemon tiehmii</i>	Tiehm beardtongue		N			S1	G1	511903.61	4472354.29	S	1986-06-17
<i>Penstemon tiehmii</i>	Tiehm beardtongue		N			S1	G1	510325.60	4471427.02	S	1987-06-14
Invertebrates											
<i>Pyrgulopsis sadai</i>	Sadas pyrg					S1S2	G1G2	486909.49	4494463.49	S	1991
Fishes											
<i>Oncorhynchus clarkii henshawi</i>	Lahontan cutthroat trout	LT	S	T	YES	S3	G4T3	493182.83	4501321.68	M	1990-PRE
Mammals											
<i>Brachylagus idahoensis</i>	pygmy rabbit		N	S	YES	S3	G4	534603.26	4472363.05	G	1946-PRE
<i>Brachylagus idahoensis</i>	pygmy rabbit		N	S	YES	S3	G4	520591.81	4484459.59	M	1993-10-21
<i>Brachylagus idahoensis</i>	pygmy rabbit		N	S	YES	S3	G4	515630.99	4470881.21	S	2001-07-07
<i>Brachylagus idahoensis</i>	pygmy rabbit		N	S	YES	S3	G4	518454.34	4473230.88	M	1994-06-21

U. S. Fish and Wildlife Service (Usfws) Categories for Listing under the Endangered Species Act:

? Assigned rank uncertain

LT Listed Threatened - likely to be classified as Endangered in the foreseeable future if present trends continue

Bureau of Land Management (Blm) Species Classification:

S Nevada Special Status Species - USFWS listed, proposed or candidate for listing, or protected by Nevada state law

N Nevada Special Status Species - designated Sensitive by State Office

United States Forest Service (Usfs) Species Classification:

S Region 4 (Humboldt-Toiyabe NF) sensitive species

T Region 4 and/or Region 5 Threatened species

Nevada State Protected (State) Species Classification:

Fauna:

YES Species protected under NRS 501.

Precision (Prec) of Mapped Occurrence:

Precision, or radius of uncertainty around latitude/longitude coordinates:

S Seconds: within a three-second radius

M Minutes: within a one-minute radius, approximately 2 km or 1.5 miles

G General: within about 8 km or 5 miles, or to map quadrangle or place name

Nevada Natural Heritage Program Global (**Grank**) and State (**Srank**) Ranks for Threats and/or Vulnerability:

G Global rank indicator, based on worldwide distribution at the species level

T Global trinomial rank indicator, based on worldwide distribution at the infraspecific level

S State rank indicator, based on distribution within Nevada at the lowest taxonomic level

1 Critically imperiled and especially vulnerable to extinction or extirpation due to extreme rarity, imminent threats, or other factors

2 Imperiled due to rarity or other demonstrable factors

3 Vulnerable to decline because rare and local throughout its range, or with very restricted range

4 Long-term concern, though now apparently secure; usually rare in parts of its range, especially at its periphery

5 Demonstrably secure, widespread, and abundant

A Accidental within Nevada

B Breeding status within Nevada (excludes resident taxa)

H Historical; could be rediscovered

N Non-breeding status within Nevada (excludes resident taxa)

Q Taxonomic status uncertain

U Unrankable

Z Enduring occurrences cannot be defined (usually given to migrant or accidental birds)

Melanie Register

From: Chad Mellison <chad_mellison@fws.gov>
Sent: Thursday, March 07, 2013 11:00 AM
To: mregister@envexpress.com
Subject: Species List request Battle Mtn Fuels Program

Follow Up Flag: Follow up
Flag Status: Flagged

Melanie-

Please note that the Nevada Fish and Wildlife Office (NFWO) has begun issuing official species list requests electronically through the Service's Information, Planning, and Conservation System (also known as IPaC). The NFWO encourages requesters to begin using IPaC to obtain official species lists as they can be obtained quickly electronically rather than waiting for Service employees to respond in writing to a specific written request. For more information on IPaC and to obtain a species list for a specific project area in the future, please visit the IPaC website at: <http://ecos.fws.gov/ipac>.

If you have any questions give us a call at 775-861-6300.

Chad Mellison
USFWS
Reno, NV



U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

NEVADA FISH AND WILDLIFE OFFICE
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
(775) 861-6300
<http://www.fws.gov/nevada/>

Project Name:

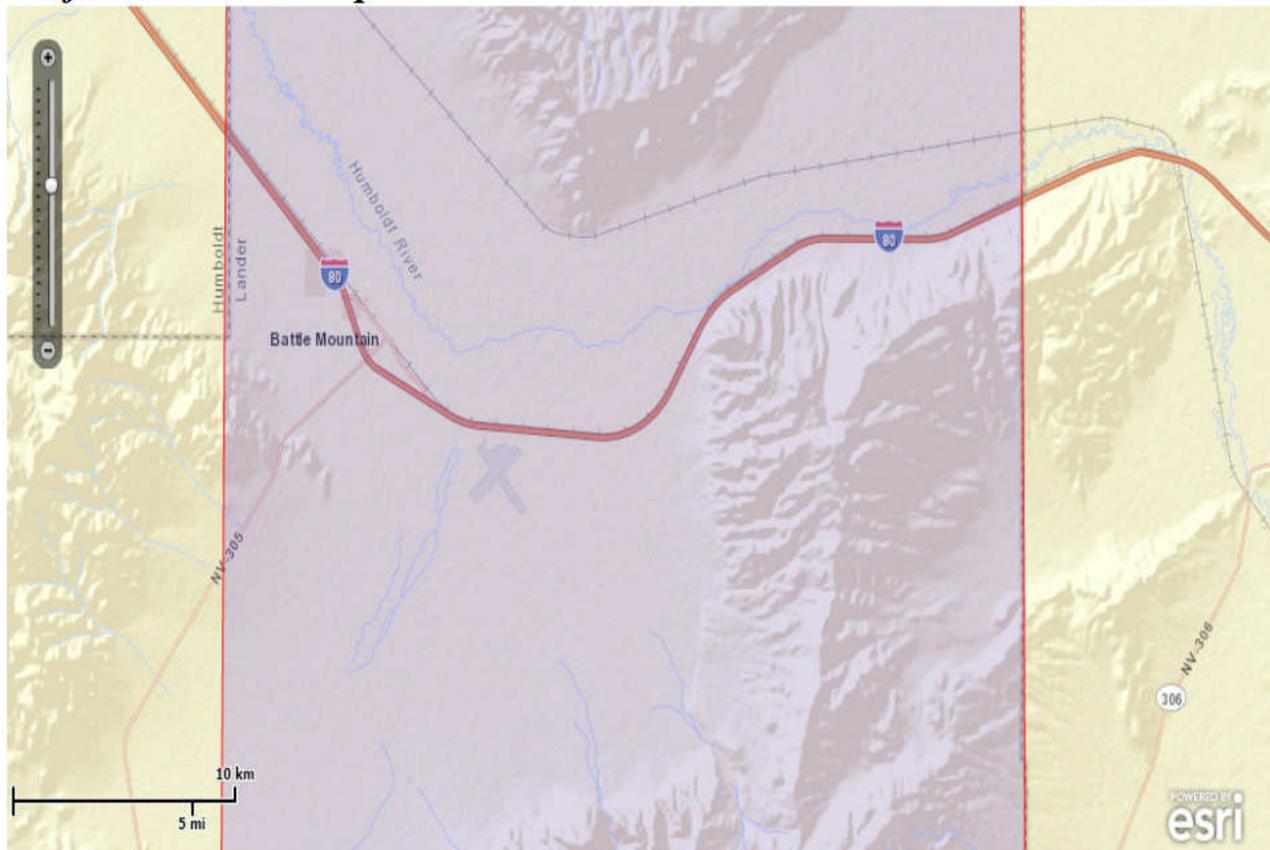
FWS Battle Mountain



U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:



Project Counties:

Eureka, NV | Humboldt, NV | Lander, NV

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-117.018772 40.8733852, -116.5978926 40.872814, -116.5937614 40.3703935, -117.0236702 40.3719629, -117.018772 40.8733852)))

Project Type:

Forestry



U.S. Fish and Wildlife Service

Natural Resources of Concern

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of 4 threatened, endangered, or candidate species, and/or designated critical habitat on your species list. Species on this list are the species that may be affected by your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Please contact the designated FWS office if you have questions.

Species that may be affected by your project:

Amphibians	Status	Species Profile	Contact
Columbia Spotted frog (<i>Rana luteiventris</i>) Population: Great Basin DPS	Candidate	species info	Nevada Fish And Wildlife Office
Birds			
Greater sage-grouse (<i>Centrocercus urophasianus</i>) Population: entire	Candidate	species info	Nevada Fish And Wildlife Office
Conifers and Cycads			
Whitebark pine (<i>Pinus albicaulis</i>)	Candidate	species info	Nevada Fish And Wildlife Office
Fishes			
Lahontan cutthroat trout (<i>Oncorhynchus clarkii ssp. henshawi</i>) Population: Entire	Threatened	species info	Nevada Fish And Wildlife Office

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the [Bald and Golden Eagle Protection Act](#) (16 U.S.C. 668). The Service's [Birds of Conservation Concern \(2008\)](#) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional



U.S. Fish and Wildlife Service

Natural Resources of Concern

conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

NWI Wetlands ([USFWS National Wetlands Inventory](#)).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).



BRIAN SANDOVAL
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

TONY WASLEY
Director

RICHARD L. HASKINS, II
Deputy Director

PATRICK O. CATES
Deputy Director

Melanie Register
Environmental Planner
Environmental Express Services, Inc.
5944 FM 1863
Bulverde, Texas, 78163

April 19, 2013

Re: Battle Mountain WUI Project

Dear Ms Register:

I am responding to your request for information from the Nevada Department of Wildlife (NDOW) on the known or potential occurrence of wildlife resources in the vicinity of the Battle Mountain WUI Project located in Lander County, Nevada. In order to fulfill your request an analysis was performed using the best available data from the NDOW's wildlife sight records, commercial reptile collections, scientific collections, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions databases. No warranty is made by the NDOW as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. These data should be considered **sensitive** and may contain information regarding the location of sensitive wildlife species or resources. All appropriate measures should be taken to ensure that the use of this data is strictly limited to serve the needs of the project described on your GIS Data Request Form. Abuse of this information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

To adequately provide wildlife resource information in the vicinity of the proposed project the NDOW delineated an area of interest that included a four-mile buffer around the project area provided by you via email (March 14, 2013). Wildlife resource data was queried from the NDOW databases based on this area of interest. The results of this analysis are summarized below.

Big Game – Occupied pronghorn antelope distribution exists throughout the entire project area and portions of the four-mile buffer area. Occupied mule deer distribution exists within portions of the project area and four-mile buffer area. No known occupied bighorn sheep or elk distributions exist in the vicinity of the project area. Please refer to the attached maps for details regarding big game species distributions relative to the proposed project area.

Greater Sage-Grouse – Greater sage-grouse habitat in the vicinity of the project area is primarily categorized as Essential/Irreplaceable Habitat, Important Habitat, Habitat of Moderate Importance, Low Value Habitat/Transitional Range, and Unsuitable Habitat also exist in the vicinity of the project area. There are no known lek sites in the vicinity of the project area.

Raptors – Various species of raptors, which use diverse habitat types, are known to reside in the vicinity of the project area. American kestrel, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw-whet owl, osprey, peregrine falcon, prairie falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, Swainson's hawk, turkey vulture, and western screech owl have distribution ranges that include the project area and four-mile buffer area. Furthermore, bald eagle, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, prairie falcon, red-tailed hawk, rough-legged hawk, and sharp-shinned hawk have been directly observed in the vicinity of the project area.

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance (United States Fish and Wildlife Service 2010) we have queried our raptor nest database to include raptor nest sites within ten miles of the proposed project area.

There are 28 raptor nest sites known to exist within ten miles of the project area:

Probable Use	Last Active	Last Check	Township/Range/Section
Buteo	1/1/1994	1/1/1994	21 0330N 0480E 031
Buteo	5/11/2000	5/11/2000	21 0300N 0460E 033
Buteo	4/14/2001	4/14/2001	21 0320N 0450E 008
Buteo	None	1/1/1994	21 0330N 0460E 035
Buteo	None	6/1/1994	21 0320N 0450E 008
Buteo	None	6/1/1994	21 0320N 0460E 012
Eagle	3/22/1972	3/22/1972	21 0320N 0430E 032
Eagle	3/30/1972	3/30/1972	21 0300N 0450E 026
Eagle	4/13/1972	6/11/2008	21 0330N 0470E 018
Eagle	3/19/1975	3/19/1975	21 0290N 0470E 006
Eagle	None	4/13/1972	21 0330N 0470E 007
Eagle	None	3/10/1977	21 0310N 0480E 019
Falcon	4/16/1974	4/16/1974	21 0330N 0470E 008
Falcon	5/24/1977	5/24/1977	21 0330N 0460E 022
Falcon	6/11/2008	6/11/2008	21 0330N 0470E 009
Falcon	6/11/2008	6/11/2008	21 0330N 0470E 018
Falcon	None	1/1/1974	21 0310N 0430E 012
Falcon	None	1/1/1975	21 0300N 0460E 008
Falcon	None	5/29/2007	21 0320N 0480E 008
Ferruginous Hawk	4/17/2004	4/17/2004	21 0330N 0440E 009
Ferruginous Hawk	None	5/11/1977	21 0320N 0470E 004
Ferruginous Hawk	None	6/2/1983	21 0330N 0440E 022
Owl	4/17/2000	4/17/2000	21 0320N 0450E 011
Owl	9/15/2004	9/15/2004	21 0310N 0450E 005
Owl	None	4/28/1994	21 0330N 0460E 033
Owl	None	6/11/1994	21 0330N 0460E 020
Owl	None	6/11/1994	21 0330N 0460E 034
Owl	None	6/22/1994	21 0310N 0450E 005

Other Wildlife Resources

The following species have also been observed in the vicinity of the project area:

American badger	bullhead (unknown)	mountain chickadee
California quail	channel catfish	myotis (unknown)
Great Basin fence lizard	chisel-toothed kangaroo rat	northern grasshopper mouse
Great Basin pocket mouse	chukar	pallid bat
Harris's sparrow	common muskrat	physa (unknown)
North American deermouse	common nighthawk	pondsnail (unknown)
North American river otter	desert woodrat	pygmy rabbit
Ord's kangaroo rat	finger nail clam (unknown)	ring-necked pheasant
Sacramento perch	gray partridge	rose-breasted grosbeak
Steller's jay	greater sandhill crane	springsnail (unknown)
Townsend's big-eared bat	gyro (unknown)	tadpole physa
Townsend's pocket gopher	house mouse	walleye

Virginia rail
bat (unknown)
bluegill
boat-tailed grackle
bobcat
brown bullhead

largemouth bass
least chipmunk
little pocket mouse
long-billed curlew
marsh snail (unknown)
montane vole

western harvest mouse
western small-footed myotis
white-breasted nuthatch
white-faced ibis
white-winged dove

The above information is based on data stored at our Reno Headquarters Office, and does not necessarily incorporate the most up to date wildlife resource information collected in the field. Please contact the Habitat Division Supervising Biologist at our Eastern Region Elko Office (775.777.2300) to discuss the current environmental conditions for your project area and the interpretation of our analysis. Furthermore, it should be noted that the information detailed above is preliminary in nature and not necessarily an identification of every wildlife resource concern associated with the proposed project. Consultation with the Supervising Habitat biologist will facilitate the development of appropriate survey protocols and avoidance or mitigation measures that may be required to address potential impacts to wildlife resources.

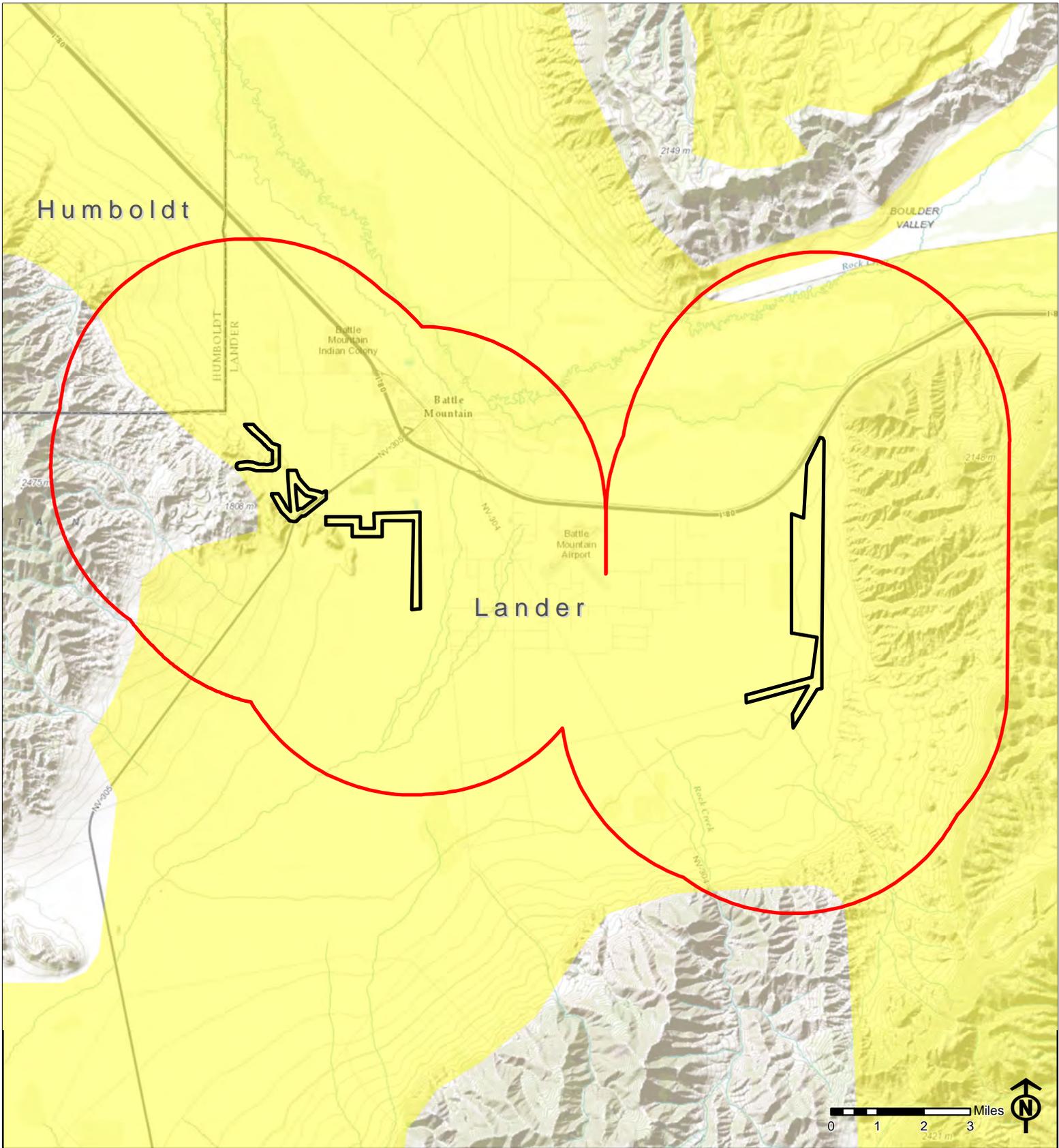
Alan Jenne – Eastern Region Supervising Habitat Biologist (775.777.2306)

Federally listed Threatened and Endangered species are also under the jurisdiction of the United States Fish and Wildlife Service. Please contact them for more information regarding these species.

If you have any questions regarding the results or methodology of this analysis please do not hesitate to contact our GIS office at (775) 688-1565.

Sincerely,

Timothy Herrick
Conservation Aide III



-  Project Area Boundary
-  Four-Mile Buffer Area
-  Pronghorn Antelope Distribution
-  County Boundary



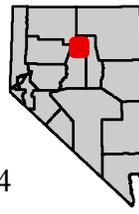
Battle Mountain Project Pronghorn Antelope Distribution

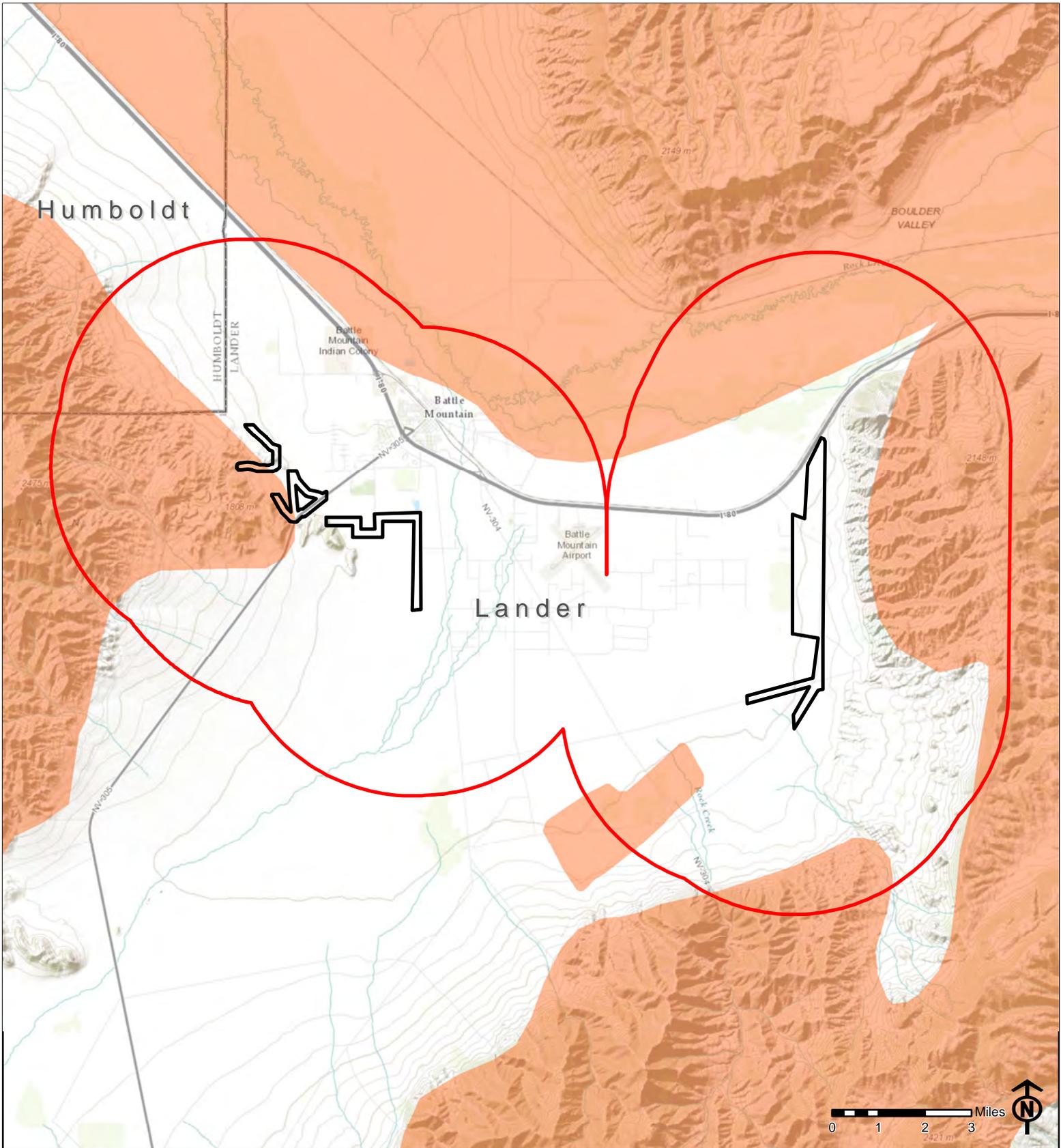


April 12, 2013

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. J-14





-  Project Area Boundary
-  Four-Mile Buffer Area
-  Mule Deer Distribution
-  County Boundary



Battle Mountain Project Mule Deer Distribution

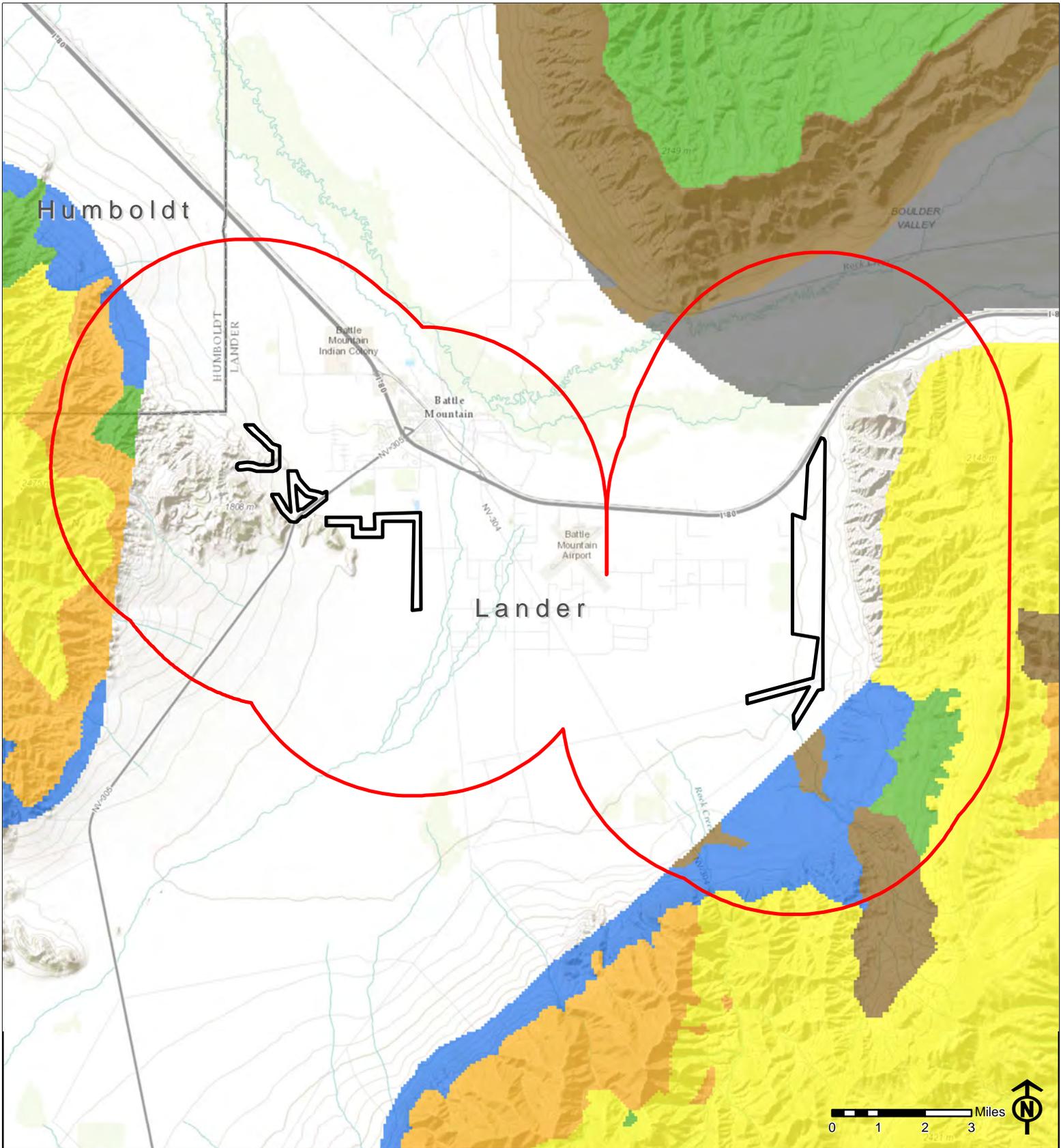


April 12, 2013

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. J-15





- | | |
|--|--|
| Project Area Boundary | 3 - Habitat of Moderate Importance |
| Four-Mile Buffer Area | 4 - Low Value Habitat/Transitional Range |
| Greater Sage-Grouse Habitat Value | 5 - Unsuitable Habitat |
| 1 - Essential/Irreplaceable Habitat | Pending Completion |
| 2 - Important Habitat | N/A - Non-Habitat |
| | County Boundary |

Battle Mountain Project Greater Sage-Grouse Habitat

April 12, 2013

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. J-16



Appendix K

2011 BLM Sensitive Species List

BLM Nevada Sensitive Species List 2011
Battle Mountain District

Mammals

Common Name	Species Name
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>
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>
Pale kangaroo mouse	<i>Microdipodops pallidus</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>
Cave myotis	<i>Myotis velifer</i>
Long-legged myotis	<i>Myotis volans</i>
Big free-tailed bat	<i>Nyctinomops macrotis</i>
Pika	<i>Ochotona princeps</i>
Bighorn sheep	<i>Ovis canadensis</i>
Western pipistrelle	<i>Pipistrellus hesperus</i>
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
Fish Spring pocket gopher	<i>Thomomys bottae abstrusus</i>
San Antonio pocket gopher	<i>Thomomys bottae curatus</i>

Birds

Common Name	Species Name
Northern goshawk	<i>Accipiter gentilis</i>
Golden eagle	<i>Aquila chrysaetos</i>
Western burrowing owl	<i>Athene cuniculariaa hypugaea</i>
Ferruginous hawk	<i>Buteo regalis</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Greater sage-grouse	<i>Centrocercus urophasianus</i>
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Black rosy-finch	<i>Leucosticte atrata</i>
Lewis woodpecker	<i>Melanerpes lewis</i>

Sage thrasher	<i>Oreoscoptes montanus</i>
Brewer's sparrow	<i>Spizella breweri</i>

Fish

Common Name	Species Name
Railroad Valley springfish	<i>Crenichthys nevadae</i>
Fish Lake Valley tui chub	<i>Gila bicolor ssp. 4</i>
Hot Creek Valley tui chub	<i>Gila bicolor ssp. 5</i>
Railroad Valley tui chub	<i>Gila bicolor ssp. 7</i>
Monitor Valley speckled dace	<i>Rhinichthys osculus spp 5</i>

Amphibians

Common Name	Species Name
Amagosa toad	<i>Bufo nelsoni</i>
Columbia spotted frog (including Toiyabe spotted frog subpopulation)	<i>Rana luteiventris</i>

Molluscs

Common Name	Species Name
California floater	<i>Anodonta californiensis</i>
Southern Duckwater pyrg	<i>Pyrgulopsis anatina</i>
Large-gland Carico pyrg	<i>Pyrgulopsis basiglans</i>
Carinate Duckwater pyrg	<i>Pyrgulopsis carinata</i>
Dixie Valley pyrg	<i>Pyrgulopsis dixensis</i>
Oasis Valley pyrg	<i>Pyrgulopsis micrococcus</i>
Wongs pyrg	<i>Pyrgulopsis wongi</i>

Insects

Common Name	Species Name
Crescent Dunes aegialian scarab	<i>Aegialia crescenta</i>
Aegialian scarab beetle	<i>Aegialia knighti</i>
Crescent Dunes aphodius scarab	<i>Aphodius sp. 2</i>
Big Smoky wood nymph	<i>Cercyonis oetus alkalorum</i>
White River wood nymph	<i>Cercyonis pegala pluvialis</i>
White Mountains skipper	<i>Hesperia miriamae longaevicola</i>
Railroad Valley skipper	<i>Hesperia uncas fulvapalla</i>
White River Valley skipper	<i>Hesperia uncas grandiosa</i>
Great Basin small blue	<i>Philotiella speciosa septentrionalis</i>
Crescent Dunes serican scarab	<i>Serica ammomenisco</i>
Sand Mountain serican scarab	<i>Serica psammobunus</i>

Plants

Common Name	Species Name
Eastwood milkweed	<i>Asclepias eastwoodiana</i>
Cima milkvetch	<i>Astragalus cimae var. cimae</i>
Needle Mountains milkvetch	<i>Astragalus eurylobus</i>
Black woollypod	<i>Astragalus funereus</i>
Tonopah milkvetch	<i>Astragalus pseudiodanthus</i>
Toquima milkvetch	<i>Astragalus toquimanus</i>
Currant milkvetch	<i>Astragalus uncialis</i>

Elko rockcress	<i>Boechera falcifruca</i>
Monte Neva paintbrush	<i>Castilleja salsuginosa</i>
Tecopa birdbeak	<i>Cordylanthus tecopensis</i>
Goodrich biscuitroot	<i>Cymopterus goodrichii</i>
Nevada willowherb	<i>Epilobium nevadense</i>
Windloving buckwheat	<i>Eriogonum anemophilum</i>
Beatley buckwheat	<i>Eriogonum beatleyae</i>
Lewis buckwheat	<i>Eriogonum lewisii</i>
Tiehm buckwheat	<i>Eriogonum tiehmii</i>
Sunnyside green gentian	<i>Frasera gypsicola</i>
Smooth dwarf greasebush	<i>Glossopetalon pungens var. glabrum</i>
Sand cholla	<i>Grusonia pulchella</i>
Rock purpusia	<i>Ivesia arizonica var. saxosa</i>
Waxflower	<i>Jamesia tetrapetala</i>
Lunar Crater buckwheat	<i>Johanneshowellia crateriorum</i>
Holmgren lupine	<i>Lupinus holmgrenianus</i>
Oryctes	<i>Oryctes nevadensis</i>
Low feverfew	<i>Parthenium ligulatum</i>
Pahute Mesa beardtongue	<i>Penstemon pahutensis</i>
Lahontan beardtongue	<i>Penstemon palmeri var. macranthus</i>
Bashful beardtongue	<i>Penstemon pudicus</i>
Tiehm beardtongue	<i>Penstemon tiehmii</i>
Clarke phacelia	<i>Phacelia filiae</i>
Least phacelia	<i>Phacelia minutissima</i>
Williams combleaf	<i>Polyctenium williamsiae</i>
Blaine pincushion	<i>Sclerocactus blainei</i>
Tonopah pincushion	<i>Sclerocactus nyensis</i>
Nachlinger catchfly	<i>Silene nachlingerae</i>
Holmgren Smelowskia	<i>Smelowskia holmgrenii</i>
Railroad Valley globemallow	<i>Sphaeralcea caespitosa var. williamsiae</i>
Lone Mountain goldenhead	<i>Tonestus graniticus</i>
Currant Summit clover	<i>Trifolium andinum var. podocephalum</i>
Rock violet	<i>Viola lithion</i>

*Although this list is intended for the sensitive species that may occur within the Battle Mountain District, use this list in conjunction with the BLM Nevada state list. Species from the state list may occur that are not on this list.

Appendix L

Ecological Site Descriptions

Ecological Site R024XY002NV	L-1
Ecological Site R024XY003NV	L-3
Ecological Site R024XY004NV	L-5
Ecological Site R024XY006NV	L-7
Ecological Site R024XY007NV	L-9
Ecological Site R024XY009NV	L-11
Ecological Site R024XY011NV	L-13
Ecological Site R024XY012NV	L-15
Ecological Site R024XY035NV	L-17
Ecological Site R024XY047NV	L-19

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on low hills, piedmont slopes and alluvial plains on all exposures. Slopes range from 0 to 30 percent, but slope gradients of 2 to 8 percent are most typical. Elevations are 4000 to 6000 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 5 to 8 inches. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils of this site were formed in mixed alluvium having a loess mantle high in volcanic ash and are well drained. Surface soil reaction ranges from neutral to strongly alkaline and increases with depth in the soil profile. In many cases, moderate to heavy concentrations of salts and sodium accumulate in the lower subsoil at depths of 20 to 36 inches. Many soils have weak, strong or indurated silica cemented duripans at depths of 10 to 30 inches. Permeability of water through these duripans is slow to very slow. Most plant roots are found in the upper soil profile within a zone of 3 to 15 inches of the surface as a result of the low annual precipitation. Desert pavement may occur in some areas. Soils having a high percentage of rock fragments on the surface are less subject to soil erosion losses. Runoff is very slow to moderate and ponding will occur on some soils following intense storms. Potential for sheet and rill erosion is slight to moderate depending on slope.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by shadscale, bud sagebrush and Indian ricegrass.

Potential vegetative composition is about 25% grasses, 5% forbs, and 70% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
--------------	-------------	-----------------------------	----------------------------

Grasses

ACHY	Indian ricegrass	5-20	23-90
ELEL5	bottlebrush squirreltail	2-10	9-45
PPGG	other perennial grasses	2-5**	9-23
HECO26	needleandthread		
POSE	Sandberg's bluegrass		

**Allow no more than 3% of each species of this group and no more than 5% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	9-36
SPHAE	globemallow		
AAFF	other annual forbs	T-3	T-14

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

ATCO	shadscale	30-40	135-180
ARSP5	bud sagebrush	20-30	90-135
GRSP	spiny hopsage	2-5	9-23
KRLA2	winterfat	2-5	9-23
SSSS	other shrubs	2-10**	9-45
KOAM	greenmolly kochia		
TETRA3	horsebrush		
CHVI8	Douglas' rabbitbrush		
SAVE4	black greasewood		

**Allow no more than 3% of each species of this group and no more than 10% in aggregate.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 10 to 15 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	750
Normal years	450
Unfavorable years	300

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, shadscale increases in density while Indian ricegrass and bud sagebrush composition are reduced. With further site degradation, shadscale may become dominant to the extent of a nearly pure stand. Cheatgrass, halogeton, and tansy mustard are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY003NV) Sodic Terrace 6-8" PZ
- (024XY004NV) Silty 4-8" PZ
- (024XY020NV) Droughty Loam 8-10" PZ
- (029XY025NV) Loamy Slope 5-8" PZ

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY003NV) Sodic Terrace 6-8" PZ
[SAVE4-ATCO codominant;
less productive site]
- (024XY014NV) Coarse Silty 4-8" PZ
[KRAL2 dominant shrub]
- (024XY025NV) Loamy Slope 5-8" PZ
[Less productive site]
- (024XY026NV) Stony Slope 6-10" PZ
[ARTRW major shrub]
- (024XY060NV) Shallow Silty 8-10" PZ
[ATCO dominant plant;
ARSP5 rare]
- (024XY065NV) Gravelly Loam 5-8" PZ
[More productive site]
- (024XY067NV) Shallow Silty 5-8" PZ
[ATCO dominant shrub;
less productive site]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

NRCS-ECS-5	22	NV-ECS-1
5 NRCS-RANGE-417		NV-4400-13 (BLM)
Other		

2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, Pershing, and Washoe Counties, Nevada.

3. Location of typical example of this site.

SW¼NE¼ Section 16, T20N. R53E. MDBM.
About 7 miles northeast of Eureka at Eureka airport, Eureka County, Nevada.

Section 12, T24N. R41E. MDBM.

About 1 mile south of Red Butte, Antelope Valley area, Lander County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on sideslopes of hills and lower mountains on mostly southerly aspects. Slopes range from 8 to 75 percent, but slope gradients of 15 to 50 percent are most typical. Elevations are 5000 to 6000 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 8 to 10 inches. Mean annual temperatures are 46 to 50 degrees F. The average growing season is about 90 to 110 days.

3. SOIL FACTORS

The soils of this site are shallow to bedrock and well drained. Surface soils are less than 5 inches thick and are neutral to mildly alkaline in reaction. These soils are modified with a high volume of rock fragments through the soil profile. The available water capacity of these soils is low to very low but a surface cover of stones and coarse fragment helps to reduce evaporation and conserve soil moisture. Runoff is medium to rapid. Potential for sheet and rill erosion is moderate to high depending on slope.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by Thurber's needlegrass, Indian ricegrass and Wyoming big sagebrush.

Potential vegetative composition is about 50% grasses, 5% forbs and 45% shrubs.

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by Thurber's needlegrass, Indian ricegrass and Wyoming big sagebrush.

Potential vegetative composition is about 50% grasses, 5% forbs and 45% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
ACTH7	Thurber's needlegrass	15-30	45-90
ACHY	Indian ricegrass	5-15	15-45
PSSPS	bluebunch wheatgrass	2-10	6-30
PPGG	other perennial grasses	2-10**	6-30
LECI4	basin wildrye		
ACSP12	desert needlegrass		
ACWE3	Webber's needlegrass		
ELEL5	bottlebrush squirreltail		
POSE	Sandberg's bluegrass		

**Allow no more than 3% of each species of this group and no more than 10% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	6-24
PHLOX	phlox		
ERIOG	eriogonum		

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

ARTRW	Wyoming big sagebrush	25-35	75-105+
GRSP	spiny hopsage	2-10	6-30
EPHED	ephedra	2-5	6-15
ATCO	shadscale	2-5	6-15
SSSS	other shrubs	2-10**	6-30
SADOI	purple sage		
TEGL	littleleaf horsebrush		
CHVI8	Douglas' rabbitbrush		

**Allow no more than 2% of each species of this group and no more than 10% in aggregate.

4. VEGETATION FACTORS (continued)

- c. Approximate ground cover (basal and crown) is 10 to 20 percent.
- d. Total annual air-dry production.

	LBs/AC
Favorable years	400
Normal years	300
Unfavorable years	150

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, Thurber needlegrass's, Indian ricegrass, and bluebunch wheatgrass decrease in the understory and are eventually replaced by Sandberg's bluegrass and bottlebrush squirreltail. Wyoming big sagebrush and rabbitbrush increase. Following wildfire on this site in lower condition, shadscale, bottlebrush squirreltail, Sandberg's bluegrass and cheatgrass become the dominant vegetation. Cheatgrass and annual mustards are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

- a. Principal sites that commonly occur in association with the potential plant community include:
 - (024XY005NV) Loamy 8-10" PZ
 - (024XY013NV) Loamy 10-12" PZ
- b. Competing sites (and their differentiae) that are similar to this potential plant community:
 - (024XY005NV) Loamy 8-10" PZ
[More productive site]
 - (024XY013NV) Loamy 10-12" PZ
[More productive site;
PSSPS codominant grass]
 - (024XY020NV) Droughty Loamy 8-10" PZ
[PSSPS rare to absent;
more productive site]
 - (024XY026NV) Stony Slope 6-10" PZ
[ELEL5-ACHY codominant
grasses; ATCO-ARTRW
codominant shrubs]
 - (024XY045NV) Eroded Slope 6-10" PZ
[Less productive site]

5. ASSOCIATED AND COMPETING SITES

- (continued)
- b. Competing sites (and their differentiae) that are similar to this potential plant community (continued):
 - (024XY026NV) Stony Slope 6-10" PZ
[ARTRW-ATCO codominant
shrubs; ELEL5 dominant
grass]
 - (024XY045NV) Eroded Slope 6-10" PZ
[ACHY dominant grass;
less productive site]
 - (024XY047NV) Shallow Loam 8-10" PZ
[Less productive site]
 - (024XY058NV) Sandy Loam 8-10" PZ
[ACHY-HECO26 codominant;
more productive site]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

_____ NRCS-ECS-5	1	NV-ECS-1
_____ NRCS-RANGE-417	_____	NV-4400-13 (BLM)
_____ Other	_____	_____
2. Distribution and extent.
Lander County, Nevada.
3. Location of typical example of this site.
SW¼ Section 20, T26N. R42E. MDBM.
About 3 miles east of Cottonwood Ranch,
Antelope Valley, Lander County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on fan skirts, alluvial flats, stream terraces and lake-plain terraces. Slopes range from 0 to 15 percent, but slope gradients of 2 to 4 percent are most typical. Elevations are 3500 to 5500 feet.

2. CLIMATIC FACTORS

Average annual precipitation is (4)6 to about 8 inches. Mean annual air temperatures are 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils in this site are deep to very deep and are somewhat poorly drained to well drained. Surface soils are moderately coarse to medium textured and normally less than 10 inches thick to the subsoil or underlying material. The upper portion of these soils tends to be strongly salt and sodium affected due to capillary movement or recycling of salts by plants, and minimal leaching by the low annual precipitation. The surface layer will normally crust and bake upon drying inhibiting water infiltration and seedling emergence. Many of these soils were formed under more poorly drained conditions than exist at present. However, stream channel entrenchment, isolation due to stream meandering or local alluvial faulting, has lowered the water table and improved their drainage. Although some soils have a seasonally high water table to within 40 inches of the soil surface, the water table is deeper than 60 inches during the summer and fall. Runoff is medium to very slow depending on surface soil infiltration characteristics and slope gradient. Potential for sheet and rill erosion is slight to moderate.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by shadscale and black greasewood.

Potential vegetative composition is about 10% grasses, 5% forbs and 85% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
ELEL5	bottlebrush squirreltail	2-10	9-45
PPGG	other perennial grasses	2-10**	9-45
ACHY	Indian ricegrass		
LECI4	basin wildrye		
DISP	inland saltgrass		

**Allow no more than 3% of each species of this group and no more than 10% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	9-36
NITRO	miterwort		
THELY	thelypody		
STANL	princesplume		
SPHAE	globemallow		
AAFF	other annual forbs	T-3	T-14

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

ATCO	shadscale	30-50	135-225
SAVE4	black greasewood	15-30	68-135
ARSP5	bud sagebrush	2-8	9-36
SUAED	seepweed	2-8	9-36
SSSS	other shrubs	2-8**	9-36
ATTO	Torrey's quailbush		
GRSP	spiny hopsage		
ATFA	sickle saltbush		
KOAM	greenmolly kochia		
TETRA3	horsebrush		
CHVI8	Douglas' rabbitbrush		

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 10 to 15 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	600
Normal years	450
Unfavorable years	300

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, black greasewood and seepweed increase in density as perennial grass species decline. Russian thistle, annual mustards and halogeton are species likely to invade disturbed areas on this site.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY002NV) Loamy 5-8" PZ
- (024XY006NV) Dry Floodplain
- (024XY007NV) Saline Bottom
- (024XY011NV) Sodic Flat 5-8" PZ
PLAYA

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY002NV) Loamy 5-8" PZ
[ATCO dominant shrub;
SAVE4 rare, if present]
- (024XY008NV) Sodic Flat 8-10" PZ
[SAVE4 dominant shrub;
ATCO minor shrub;
LECI4 dominant grass]
- (024XY011NV) Sodic Flat 6-8" PZ
[SAVE4 dominant shrub;
ATCO minor shrub]
- (024XY022NV) Sodic Terrace 8-10" PZ
[SAVE4-ARTR2 codominant;
more productive site]
- (024XY060NV) Shallow Silty 8-10" PZ
[ATCO dominant plant:
ARSP5 & SAVE4 rare]
- (024XY067NV) Shallow Silty 5-8" PZ
[ATCO dominant shrub;
less productive site]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

_____	NRCS-ECS-5	_____	6	NV-ECS-1
_____	NRCS-RANGE-417	_____		NV-4400-13 (BLM)
_____	Other	_____		

2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, Pershing, and Washoe Counties, Nevada.

3. Location of typical example of this site.

NE¼ Section 5, T30N. R49E. MDBM.
About 5 miles south of Beowawe, Crescent Valley area, Eureka County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on lower fan piedmonts, alluvial flats and stream terraces. Slopes range from 0 to 4 percent. Elevations are 4000 to 6000 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 4 to 8 inches. In areas of lower precipitation, extra moisture from run-in water is required to support this plant community. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils in this site are typically very deep and well to somewhat excessively drained. The surface layers are free of salt and sodium. Moderate to strong concentrations of salts and sodium are common in the lower substratum of some soils. These soils are usually noncalcareous in their upper profiles and highly calcareous in their lower profile. Due to their high silt fraction, the surface layers of these soils will normally crust and bake upon drying, inhibiting water infiltration and seedling emergence. Permeability is moderate to slow with moderate to high available water capacity. Additional moisture is received on this site as overflow from adjacent ephemeral streams or as run-in from higher landscapes. Runoff is slow to very slow and ponding occurs in some areas particularly following intense storms or low elevation snow melt. Potential for sheet and rill erosion is slight, however, these soils have a potential for formation of gullies, especially in areas near shallow drainageways.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by winterfat. Indian ricegrass, bud sagebrush and bottlebrush squirreltail are other important species associated with this site.

Potential vegetative composition is about 25% grasses, 5% forbs and 70% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
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Grasses

ACHY	Indian ricegrass	15-25	53-88
ELEL5	bottlebrush squirreltail	2-8	7-28
PPGG	other perennial grasses	2-8**	7-28
HECO26	needleandthread		
PASM	western wheatgrass		
POSE	Sandberg's bluegrass		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	7-28
SPHAE	globemallow		
AAFF	other annual forbs	T-5	T-18

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

KRLA2	winterfat	60-70	68-135
ARSP5	bud sagebrush	2-8	7-28
SSSS	other shrubs	2-10**	7-35
ATCO	shadscale		
GRSP	spiny hopsage		
ATFA	sickle saltbush		
ATCA2	fourwing saltbush		
CHV18	Douglas' rabbitbrush		

**Allow no more than 2% of each species of this group and no more than 10% in aggregate.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 10 to 20 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	500
Normal years	350
Unfavorable years	200

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, Indian ricegrass decreases in the understory as bottlebrush squirreltail and Sandberg bluegrass increase. Cheatgrass and other annuals, particularly halogeton and Russian thistle, readily invade this site and often become the dominant vegetation with site degradation.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY002NV) Loamy 5-8" PZ
- (024XY014NV) Coarse Silty 4-8" PZ
- (024XY020NV) Droughty Loam 8-10" PZ
PLAYA

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY014NV) Coarse Silty 5-8" PZ
[More productive site;
greater shrub diversity]
- (024XY011NV) Sodid Flat 6-8" PZ
[SAVE4 dominant shrub;
ATCO minor shrub]
- (024XY022NV) Sodid Terrace 8-10" PZ
[SAVE4-ARTR2 codominant;
more productive site]
- (024XY059NV) Silty 8-10" PZ
[More productive site;
does not occur on bolson
floor; may be same plant
community as 024XY014NV -
further investigation required]
- (024XY060NV) Shallow Silty 8-10" PZ
[ATCO dominant plant;
ARSP5 & SAVE4 rare]
- (024XY067NV) Shallow Silty 5-8" PZ
[ATCO dominant shrub;
less productive site]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

NRCS-ECS-5	5	NV-ECS-1
5 NRCS-RANGE-417		NV-4400-13 (BLM)
Other		

2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, Pershing, and Washoe Counties, Nevada.

3. Location of typical example of this site.

SE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 26, T33N. R35E. MDBM. About 2 miles southeast of Dun Glen-Mill City exit off I-80 west of Winnemucca, Dun Glen Flat area, Pershing County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on the outer margins of axial-stream floodplains, fan skirts and along intermittent drainageways. Slopes range from 0 to 4 percent, but are mostly less than 2 percent. Elevations are 4000 to 6000 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 6 to 10 inches. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils of this site are deep to very deep and have a high available water capacity. They are somewhat poorly to well drained and runoff is mostly slow to very slow. These soils are subject to occasional overflow by stream flooding or as run-in from higher landscapes which will supply additional moisture for plant growth. During the summer and fall months, the water table is at depths below 6 feet. Most soils are slightly to moderately salt and sodium affected throughout the solum. Soil reaction increases with soil depth and most soils are moderately to very strongly saline-sodic affected below 30 inches. These soils are susceptible to gulying which can intercept normal overflow patterns causing site degradation.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by basin wildrye. Basin big sagebrush and black greasewood are other important species associated with this site.

Potential vegetative composition is about 70% grasses, 5% forbs and 25% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
LECI4	basin wildrye	55-65	605-715
PASM	western wheatgrass	5-15	55-165
LETR5	creeping wildrye	5-15	55-165
PPGG	other perennial grasses	5-15**	55-165
SPAI	alkali sacaton		
DISP	inland saltgrass		
ACHY	Indian ricegrass		
MURI	mat muhly		
ELEL5	bottlebrush squirreltail		
JUBA	Baltic rush		

**Allow no more than 5% of each species of this group and no more than 15% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	22-88
IVAX	povertyweed		
ASTRA	milkvetch		
THELY	thelypody		

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

ARTRT	basin big sagebrush ^{1/}	10-15	110-165
SAVE4	black greasewood	2-8	22-88
SSSS	other shrubs	2-8**	22-88
ATCO	shadscale		
GRSP	spiny hopsage		
ERNAN5	rubber rabbitbrush		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

^{1/} Wyoming big sagebrush may also be present and is accounted for within allowance for basin big sagebrush.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 30 to 40 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	1500
Normal years	1100
Unfavorable years	600

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, basin wildrye is replaced by woody plants. Rubber rabbitbrush, black greasewood and basin big sagebrush increase as ecological condition declines. Russian thistle and cheatgrass are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY003NV) Sodic Terrace 6-8" PZ
- (024XY005NV) Loamy 8-10" PZ
- (024XY007NV) Saline Bottom
- (024XY022NV) Sodic Terrace 8-10" PZ
- (025XY001NV) Moist Floodplain

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY007NV) Saline Bottom
[SAVE4 dominant shrub;
ARTR2 rare to mostly
absent]
- (024XY022NV) Sodic Terrace 8-10" PZ
[SAVE4-ARTR2 codominant;
less productive site]
- (025XY001NV) Moist Floodplain
[More productive site;
LETR5 dominant to
codominant grass]
- (025XY003NV) Loamy Bottom 8-14" PZ
[More productive site;
SAVE4 & DISP absent;
soils not saline-alkali
affected]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

_____ NRCS-ECS-5	_____ 6	_____ NV-ECS-1
_____ NRCS-RANGE-417	_____	_____ NV-4400-13 (BLM)
_____ Other	_____	_____

2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, and Pershing Counties, Nevada.

3. Location of typical example of this site.

N½ Section 1, T35N. R56E. MDBM.
Along Coal Mine Creek floodplain, north of I-80 at Rydon, Elko County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on lake-plain terraces, stream terraces and on the margin of axial-stream floodplains. The ground surface is typically level but slopes may reach 2 percent on the perimeters of the site. Elevations are from 4000 to 5500 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 6 to 10 inches. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils of this site are deep to very deep. These soils are calcareous and they are strongly salt and sodium affected in their upper profile with soil reaction and salt and sodium concentrations usually decreasing with depth. The soils are somewhat-poorly to poorly drained and have a seasonally high water table at depths of 20 to 60 inches. Additional moisture is received on this site during the winter and spring months as run-in from higher landscapes or occasional brief overflow from adjacent streams. Wetting of these soils dilutes their salt and sodium concentrations and the degree of salinity and alkalinity fluctuates widely through the year. Permeability is slow to moderately slow. Seed viability, germination and available water capacity is reduced due to the saline condition of these soils. The surface layer of these soils will crust and bake upon drying, inhibiting water infiltration and seedling emergence. Runoff is slow to very slow and ponding occurs in some areas. Potential for sheet and rill erosion is slight.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by basin wildrye. Black greasewood is the dominant shrub.

Potential vegetative composition is about 70% grasses, 5% forbs and 25% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
LECI4	basin wildrye	50-60	700-840
SPAI	alkali sacaton	5-25	70-350
DISP	inland saltgrass	2-8	28-112
PPGG	other perennial grasses	2-8**	28-112
PUCCI	alkaligrass		
POA	bluegrass		
ELEL5	bottlebrush squirreltail		
JUBA	Baltic rush		
**Allow no more than 5% of each species of this group and no more than 8% in aggregate.			
Forbs			
PPFF	other perennial forbs	2-8**	28-112
IVAX	povertyweed		
NITRO	miterwort		
ASTRA	milkvetch		
THELY	thelypody		
**Allow no more than 2% of each species of this group and no more than 8% in aggregate.			
Shrubs			
SAVE4	black greasewood	5-15	70-210
ERNAN5	rubber rabbitbrush	1-5	14-70
SSSS	other shrubs	2-8**	22-88
SUAED	seepweed		
ATFA	sickle saltbush		
ATTO	Torrey's quailbush		
SHAR	silver buffaloberry		
ATCO	shadscale		
**Allow no more than 3% of each species of this group and no more than 8% in aggregate.			

4. VEGETATION FACTORS (continued)

- c. Approximate ground cover (basal and crown) is 15 to 30 percent.
- d. Total annual air-dry production.

	LBs/AC
Favorable years	1900
Normal years	1400
Unfavorable years	800

- e. Plant community dynamics

Where management results in abusive grazing use by livestock, rabbitbrush and black greasewood increase and become the dominant vegetation in lower condition classes. Inland saltgrass increases as condition declines and usually dominates the understory when this site is in low ecological condition. Fivehook bassia and annual mustards are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

- a. Principal sites that commonly occur in association with the potential plant community include:

(024XY003NV) Sodic Terrace 6-8" PZ
 (024XY006NV) Dry Floodplain
 (024XY009NV) Saline Meadow
 (024XY011NV) Sodic Flat 6-8" PZ
 (024XY063NV) Sodic Floodplain
 (024XY064NV) Sodic Bottom
 PLAYA

- b. Competing sites (and their differentiae) that are similar to this potential plant community:

(024XY006NV) Dry Floodplain
 [ARTR2 dominant shrub;
 SAVE4 minor shrub, or
 absent]
 (024XY008NV) Sodic Flat 8-10" PZ
 [Much less productive site]
 (024XY011NV) Sodic Flat 6-8" PZ
 [Much less productive site]
 (024XY063NV) Saline Floodplain
 [SHAR & ARTRT codominant
 shrubs; SAVE4 minor shrub,
 to absent]
 (024XY064NV) Sodic Bottom
 [SHAR-SAVE4-ATCO
 codominant shrubs]
 (025XY003NV) Loamy Bottom 8-14" PZ
 [More productive site;
 SAVE4 & DISP absent;
 soils not saline-alkali
 affected]

APPENDIX I

Reference Data

- 1. Site Documentation (number and kind of site inventory records).

	NRCS-ECS-5	22	NV-ECS-1
6	NRCS-RANGE-417		NV-4400-13 (BLM)
4	Other		

- 2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, and Pershing Counties, Nevada.

- 3. Location of typical example of this site.

NW¼NW¼ Section 26, T29N. R62E. MDBM.
 Approximately 45 miles southwest of Wells,
 about 1½ miles west of Butte Valley
 Ranch, Elko County, Nevada.

S½, Sec. 17, T31N. R45E. MDBM.
 Approximately 6 miles south of Battle
 Mountain, along east side of Marvel Ranch
 Road (Old 8A), Lander County, Nevada.

Approved by: _____
 STATE RANGE CONSERVATIONIST
 NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on nearly level floodplains and inset fans. Slopes range from 0 to 4 percent, but are mostly less than 2 percent. Elevations are 4000 to 6000 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 6 to 10 inches. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils of this site are deep to very deep and usually calcareous. Surface soils are mostly 10 inches or more thick and medium to fine textured. These soils are moderately to strongly salt and sodium affected in the upper profile with soil reaction and salinity decreasing with depth. The soils are poorly to somewhat poorly drained. There is often a water table near the surface for short periods in the early spring that usually stabilizes at depths below 40 inches during the early summer. Capillary rise of this ground water enhances soil moisture during the growing season. Additional moisture is received on this site as run-in from higher landscapes or as overflow from adjacent streams. These soils are normally poorly aerated and are slowly to moderately-slowly permeable. Runoff is slow to very slow and there may be some brief ponding in depressional areas. These soils are susceptible to gulying which intercepts normal stream overflow patterns and results in site degradation. Where stream channels become entrenched or gulying occurs, the water table is lowered and a more drought tolerant vegetation succeeds on this site.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by alkali sacaton with lesser but significant amounts of alkali muhly.

Potential vegetative composition is about 70% grasses, 5% forbs and 25% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
SPAI	alkali sacaton	20-40	200-400
MUAS	alkali muhly	10-20	100-200
POA	bluegrass	5-15	50-150
DISP	inland saltgrass	5-15	50-150
SPGR	alkali cordgrass	5-10	50-100
LECI4	basin wildrye	2-5	20-50
PPGG	other perennial grasses	5-10**	50-100
PASM	western wheatgrass		
HOBR2	meadow barley		
LETR5	creeping wildrye		
PUCCI	alkaligrass		
JUBA	Baltic rush		

**Allow no more than 5% of each species of this group and no more than 10% in aggregate.

Forbs

TRIGL	arrowgrass	1-3	10-30
PPFF	other perennial forbs	5-15**	5-150
IVAX	povertyweed		
RUMEX	dock		
DODEC	shootingstar		
SENEC	groundsel		
ASTER	aster		
POTEN	cinquefoil		

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

SSSS	other shrubs	2-8**	22-88
SAVE4	black greasewood		
SHAR	silver buffaloberry		
SALIX	willow		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 45 to 60 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	1500
Normal years	1000
Unfavorable years	700

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, woody plants often increase, especially rabbitbrush species. Inland saltgrass and Baltic rush increase and become the main understory species. Fivehook bassia, annual mustards, foxtail barley and other annual forbs and grasses are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY003NV) Sodic Terrace 6-8" PZ
- (024XY007NV) Saline Bottom
- (024XY008NV) Sodic Flat 8-10" PZ
- (024XY010NV) Sodic Floodplain
- (024XY011NV) Sodic Flat 6-8" PZ
- (024XY022NV) Sodic Terrace 8-10" PZ

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY043NV) Wet Meadow 6-8" PZ
[More productive site;
POA dominant plant]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

_____	NRCS-ECS-5	3	NV-ECS-1
1	NRCS-RANGE-417	_____	NV-4400-13 (BLM)
_____	Other	_____	

2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, and Pershing Counties, Nevada.

3. Location of typical example of this site.

NW¼ Section 25, T19N. R42E. MDBM.
Approximately 6 miles west of Austin, along USHwy 50 at Reese River Crossing, Lander County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on lake plains adjacent to playas. Slopes range from 0 to 2 percent. Elevations are 3500 to about 5500 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 6 to 8 inches. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 90 to 130 days.

3. SOIL FACTORS

The soils of this site are deep to very deep. Surface soils are less than 10 inches thick and are moderately coarse to moderately fine textured. These soils have slow to moderately slow permeability. The soils are poorly to somewhat poorly drained with a seasonally high water table at depths of 20 to 40 inches during the summer and fall. Additional moisture is received on this site as run-in from higher landscapes. This source of additional moisture carries excess salts that are washed onto the site. Surface runoff from the soils of this site is slow to very slow and there is widespread ponding in the late winter and early spring. Salts accumulate on the site and are concentrated as the ponded water evaporates. During dry periods, further salt concentration at the surface is brought about by capillary movement of dissolved salts upward from the ground water. These soils are usually calcareous and the upper soil profile is strongly to very strongly sodium affected and moderately to strongly saline. The surface layer will crust and bake upon drying, inhibiting water infiltration and seedling emergence. Potential for sheet and rill erosion is slight. For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by black greasewood.

Potential vegetative composition is about 25% grasses, 5% forbs and 70% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
LECI4	basin wildrye	5-15	35-53
DISP	inland saltgrass	5-10	18-35
PPGG	other perennial grasses	T-5**	T-18
SPAI	alkali sacaton		
ELEL5	bottlebrush squirreltail		
PUCCI	alkaligrass		

**Allow no more than 3% of each species of this group and no more than 5% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	7-28
IVAX	povertyweed		
NITRO	miterwort		
ASTRA	milkvetch		
THELY	thelypod		

**Allow no more than 2% of each species of this group and no more than 8% in aggregate.

Shrubs

SAVE4	black greasewood	60-75	210-263
SSSS	other shrubs	5-15**	35-53
ATFA	sickle saltbush		
ATTO	Torrey's quailbush		
ATCO	shadscale		
SUAED	seepweed		
ALOC2	iodinebush		
ARSP5	bud sagebrush		
ERNAN5	rubber rabbitbrush		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 5 to 15 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	500
Normal years	350
Unfavorable years	200

e. Plant community dynamics

As ecological condition declines, the herbaceous understory is reduced or eliminated and the site becomes a nearly pure stand of black greasewood. Halogeton, fivehook bassia and annual mustards are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY003NV) Sodic Terrace 6-8" PZ
- (024XY007NV) Saline Bottom
PLAYA

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY003NV) Sodic Terrace 6-8" PZ
[SAVE4-ATCO codominant shrubs]
- (024XY007NV) Saline Bottom
[More productive site;
LECI4 dominant plant]
- (024XY008NV) Sodic Flat 8-10" PZ
[More productive site;
typically occurs on axial-
stream terraces and not
adjacent to basin floor
playas]
- (024XY022NV) Sodic Terrace 8-10" PZ
[ARTR2 codominant shrub]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

NRCS-ECS-5	17	NV-ECS-1
3 NRCS-RANGE-417		NV-4400-13 (BLM)
Other		

2. Distribution and extent.

Elko, Eureka, Humboldt, Lander, Pershing, and Washoe Counties, Nevada.

3. Location of typical example of this site.

N½ Section 19, T30N. R44E. MDBM.
Approximately 14 miles south of Battle Mountain, on the west side of NvHwy 8A, about 0.1 mile south of Reese River Bridge, Lander County, Nevada.

NW¼SW¼ Section 32, T35N. R42E. MDBM.
Approximately 2½ miles southwest of I-80 Exit 205, Pumpnickel Valley, Humboldt County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on inset fans of middle and lower piedmont slopes, on alluvial flats, lakeplains, and on axial-stream terraces. Slopes range from 0 to 4 percent, but slope gradients of 0 to 2 percent are most typical. Elevations are 4000 to 5500 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 6 to 8 inches. Mean annual air temperature is 45 to 53 degrees F. The average growing season is about 80 to 130 days.

3. SOIL FACTORS

The soils of this site are very deep. Surface soils are medium textured and less than 10 inches thick. These soils are moderately well drained with a seasonally high water table at a depth of greater than 5 feet. The soils are strongly saline and moderately to strongly sodium affected. The greatest concentration of salts is below 10 inches of the surface, where dissolved salts accumulate at the upper limits of capillary movement. Some areas receive additional moisture as run-in from higher landscapes and excess salts are washed onto the site. Surface runoff from the soils in this site is slow to very slow and some small areas may be ponded in the late winter and early spring.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by sickle saltbush. Other important species on this site are Indian ricegrass and bottlebrush squirreltail.

Potential vegetative composition is about 35% grasses, 5% forbs and 60% shrubs.

4. VEGETATION FACTORS (continued)

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
ACHY	Indian ricegrass	20-30	80-120
ELEL5	bottlebrush squirreltail	5-10	20-40
PPGG	other perennial grasses	2-8**	8-32
SPAI	alkali sacaton		
LECI4	basin wildrye		
PASM	western wheatgrass		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

Forbs

PPFF	other perennial forbs	2-8**	8-32
SPHAE	globemallow		
IVAX	povertyweed		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

Shrubs

ATFA	sickle saltbush	50-60	200-240
SSSS	other shrubs	2-8**	8-32
ATCO	shadscale		
SAVE5	black greasewood		
KRLA2	winterfat		
ARSP5	bud sagebrush		
ATCA2	fourwing saltbush		
ERNAN5	rubber rabbitbrush		

**Allow no more than 3% of each species of this group and no more than 8% in aggregate.

4. VEGETATION FACTORS (continued)

c. Approximate ground cover (basal and crown) is 10 to 20 percent.

d. Total annual air-dry production.

	LBs/AC
Favorable years	700
Normal years	400
Unfavorable years	200

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, Indian ricegrass, bottlebrush squirreltail, and sickle saltbush decrease. Shadscale and rabbitbrush increase in the overstory and become the dominant plants on the site. Cheatgrass, halogeton, Russian thistle, and annual mustards are species likely to invade this site.

5. ASSOCIATED AND COMPETING SITES

a. Principal sites that commonly occur in association with the potential plant community include:

- (024XY002NV) Loamy 5-8" PZ
- (024XY004NV) Silty 4-8" PZ
- (024XY007NV) Saline Bottom
- (024XY011NV) Sodic Flat 6-8" PZ
- (024XY020NV) Droughty Loamy 8-10" PZ
PLAYA

b. Competing sites (and their differentiae) that are similar to this potential plant community:

- (024XY004NV) Silty 4-8" PZ
[KRLA2 dominant shrub;
ATFA rare to absent]
- (024XY014NV) Coarse Silty 5-8" PZ
[KRLA2 dominant shrub;
ATFA absent]
- (024XY060NV) Shallow Silty 8-10" PZ
[ATCO dominant plant]
- (024XY067NV) Shallow Silty 5-8" PZ
[ATCO dominant shrub]

APPENDIX I

Reference Data

1. Site Documentation (number and kind of site inventory records).

NRCS-ECS-5	1	NV-ECS-1
2 NRCS-RANGE-417	1	NV-4400-13 (BLM)
Other	_____	

2. Distribution and extent.

Lander County, Nevada.

3. Location of typical example of this site.

Section 11, T31N. R45E. MDBM.

Approximately 5 miles southeast of Battle Mountain, off Hill Top Road, Lander County, Nevada.

Approved by: _____
STATE RANGE CONSERVATIONIST
NRCS NEVADA

Date Approved: March 2003

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NEVADA

Rangeland Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. PHYSIOGRAPHIC FEATURES

This site occurs on sideslopes of middle and upper piedmont slopes, hills and lower mountains on all aspects. Slopes range from 4 to 75 percent, but slope gradients of 15 to 50 percent are typical. Elevations are 5000 to 7000 feet.

2. CLIMATIC FACTORS

Average annual precipitation is 10 to 14 inches. Mean annual air temperature is 43 to 47 degrees F. The average growing season is about 80 to 100 days.

3. SOIL FACTORS

The soils of this site are shallow to bedrock or a restrictive layer and well drained. Depth to a moderately fine or fine textured subsoil is normally less than 10 inches. Some soils have a dense, fine textured subsoil underlying a surface layer 12 to 20 inches thick. The soils are modified with 35 to 75 percent gravels and other coarse fragments throughout the profile. They have a high amount of gravels, cobbles and stones on the surface which occupy plant growing space yet provide a stabilizing affect on surface erosion conditions. Available water capacity of these soils is low to very low but a surface cover of coarse fragments helps to reduce evaporation and conserve soil moisture. Runoff is medium and potential for sheet and rill erosion is slight to moderate depending on slope.

For a listing of soils correlated to this range site and representative pedon, see Appendix II

4. VEGETATION FACTORS

a. Potential Native Vegetation

The plant community is dominated by bluebunch wheatgrass, Thurber's needlegrass and big sagebrush.

Potential vegetative composition is about 60% grasses, 10% forbs and 30% shrubs.

b. Major plant species, range in species composition, and species air-dry weight for a normal growing season:

PLANT SYMBOL	COMMON NAME	PERCENT BY WEIGHT (AIR-DRY)	SPECIES BY WEIGHT (LBS/AC)
Grasses			
PSSPS	bluebunch wheatgrass	20-35	80-140
ACTH7	Thurber's needlegrass	20-30	80-120
PPGG	other perennial grasses	2-10**	8-40
POSE	Sandberg's bluegrass		
LECI4	basin wildrye		
ACHY	Indian ricegrass		
FEID	Idaho fescue		
ELEL5	bottlebrush squirreltail		

**Allow no more than 3% of each species of this group and no more than 10% in aggregate.

Forbs

PPFF	other perennial forbs	5-15**	20-60
CRAC2	tapertip hawksbeard		
BASA3	arrowleaf balsamroot		
LUPIN	lupine		
PHLOX	phlox		
ERIOG	erigonum		

**Allow no more than 3% of each species of this group and no more than 15% in aggregate.

Shrubs

ARTR2	big sagebrush	15-25	60-100
ARTRW	Wyoming big sagebrush		
ARTRV	mountain big sagebrush		
SSSS	other shrubs	5-10**	20-40
AMUT	Utah serviceberry		
PRAN2	Anderson's peachbrush		
ERNAN5	rubber rabbitbrush		
CHVI8	Douglas' rabbitbrush		

**Allow no more than 3% of each species of this group and no more than 10% in aggregate.

4. VEGETATION FACTORS (continued)

- c. Approximate ground cover (basal and crown) is 10 to 25 percent.
- d. Total annual air-dry production.

	LBs/AC
Favorable years	500
Normal years	400
Unfavorable years	250

e. Plant community dynamics

Where management results in abusive grazing use by livestock or feral horses, big sagebrush and rabbitbrush become dominant with increases of Sandberg's bluegrass, bottlebrush squirreltail, phlox, and arrowleaf balsamroot in the understory. In burned areas, broom snakeweed is often dominant on the site. Cheatgrass, thistles, and annual mustards are species likely to invade this site. Repeated burning of the plant community at intervals less than 10 to 15 years results in complete site dominance by annuals (primarily cheatgrass and tansy mustard) and the near total absence of woody plants, including sagebrush.

5. ASSOCIATED AND COMPETING SITES

- a. Principal sites that commonly occur in association with the potential plant community include:

(024XY005NV) Loamy 8-10" PZ
 (024XY013NV) Loamy 10-12" PZ
 (024XY028NV) South Slope 8-12" PZ
 (024XY047NV) Shallow Loam 8-10" PZ

- b. Competing sites (and their differentiae) that are similar to this potential plant community:

(024XY005NV) Loamy 8-10" PZ
 [PSSPS minor grass, if present]
 (024XY013NV) Loamy 10-12" PZ
 [More productive site]
 (024XY028NV) South Slope 8-12" PZ
 [PSSPS dominant grass; more productive site]
 (024XY029NV) South Slope 12-16" PZ
 [PSSPS dominant grass; more productive site]
 (024XY047NV) Shallow Loam 8-10" PZ
 [ACTH7-ACHY codominant grasses]

APPENDIX I

Reference Data

- 1. Site Documentation (number and kind of site inventory records).

_____	NRCS-ECS-5	_____	1	_____	NV-ECS-1
_____	NRCS-RANGE-417	_____	_____	_____	NV-4400-13 (BLM)
_____	Other	_____	_____	_____	_____

- 2. Distribution and extent.

Humboldt and Lander Counties, Nevada.

- 3. Location of typical example of this site.

SW¼ Section 18, T31N. R47E. MDBM.
 Approximately 4 miles east of Battle Mountain, Shoshone Mountains, Lander County, Nevada.

Approved by: _____
 STATE RANGE CONSERVATIONIST
 NRCS NEVADA

Date Approved: March 2003