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

Preliminary Environmental Assessment
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Kious Basin Sagebrush Steppe Restoration

Location: Snake Range, Eastern Nevada

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1.0 Introduction

This Environmental Assessment (EA) has been prepared to analyze the Bureau of Land Management's Kious Basin Sagebrush Steppe Restoration Project. This is a joint land management project between the Ely District Bureau of Land Management (BLM) and Great Basin National Park. This EA analyzes the BLM portion of the project while considering the proposed treatment on the National Park Service (NPS) administered land. The NPS is responsible for fulfilling National Environmental Policy Act (NEPA) requirements for treatments within their land management jurisdiction. This EA is a site-specific analysis of potential environmental effects that could result with the implementation of the proposed action and alternatives to the proposed action. The EA assists the BLM with project planning and ensuring compliance with the NEPA, and in determining the significance of environmental effects that could result from the analyzed actions. Significance is defined by NEPA and can be found in Title 40 of the Code of Federal Regulations (CFR) §§1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a "Finding of No Significant Impact" (FONSI).

This EA is tiered to the analysis and effects disclosed in:

- The Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007).
- The Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007).

Should a determination be made that implementation of the proposed or alternative actions would not result in significant environmental impacts or significant environmental impacts beyond those already addressed in the above tiered Environmental Impact Statements, a FONSI would be prepared to document that determination and a Decision Record would be issued providing rationale for approving the chosen alternative (NEPA Handbook, 2008).

1.1 Background

Sagebrush ecosystems have undergone major changes in vegetation structure, composition, production and resiliency since settlement by European Americans. Some of these changes are a result of facilitating the expansion of pinyon-juniper woodlands into sagebrush ecosystems as well as facilitating the establishment and expansion of exotic annual grasses. These changes have resulted in a reduction in plant community resilience to disturbance, soil loss, degradation or loss of wildlife habitat as well as a dramatic shifts in fire frequency, size and severity (Davies et al. 2011; Pyke, 2011; Chambers et al. 2005; Miller and Tausch, 2001). Many sagebrush ecosystems are approaching, or have already, crossed an ecological threshold to an alternate plant community state in which these plant communities transition to alternative communities that could be more susceptible to invasion of non-native annual grasses and other invasive species after disturbance. Returning these communities to, or near, their original state will not likely occur without human intervention. This includes controlling undesirable species and re-introducing previously dominant species (Pyke, 2011).

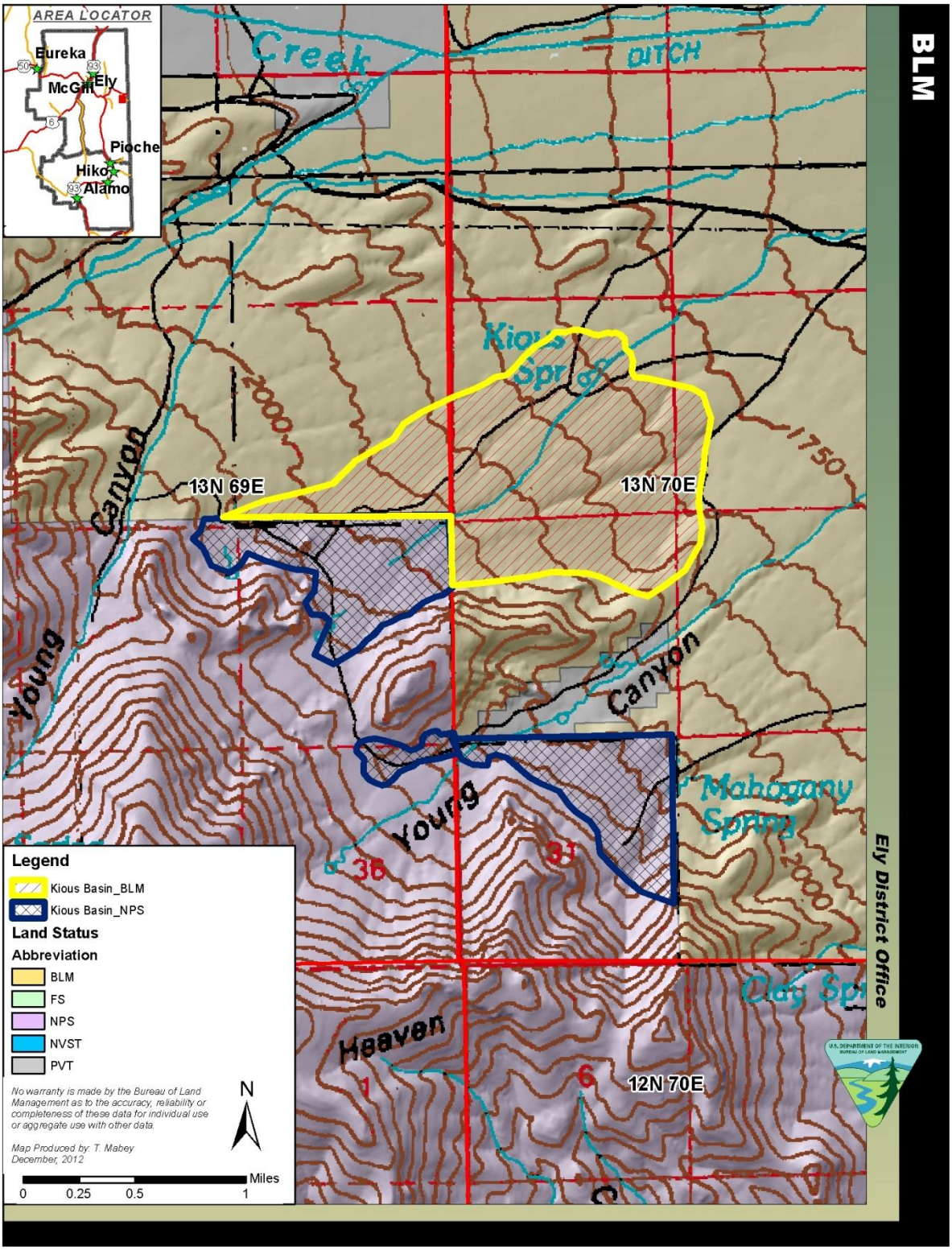
A tool used to assess a landscape's ecological condition is the Fire Regime Condition Class (FRCC) system. FRCC is an interagency, standardized tool based on scientific and peer

reviewed literature for determining the degree of departure from a reference vegetation condition within a given biophysical setting (BPS). More information regarding this tool can be found at the following website: http://www.frcc.gov. Assessing FRCC can help guide management objectives and set priorities for treatments. The classification is based on a relative measure describing the degree of departure from the historical natural disturbance regime for a given BPS. This departure is described as changes to one or more of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure and mosaic pattern); fuel composition; fire frequency, severity and pattern; and other associated disturbances (e.g. insects and disease mortality, grazing and drought). There are three FRCC classes used to describe the departure from reference BPS conditions. The three classes are based on low (0-33% departure; FRCC 1), moderate (34-66% departure; FRCC 2) and high (67-100% departure; FRCC 3) departure from the central tendency of the natural (historical) regime. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside the range of variability. The FRCC rating is accompanied by indicators of the potential risks that may result. Biophysical setting models have been developed for most major (dominant) vegetation types. These models describe the vegetation, geography, biophysical characteristics, succession stages, disturbance regimes, and assumptions for each vegetation type (Havlina et al, 2010). Reference (historical) conditions described in the BPS models are compared to actual conditions for purposes of determining the current FRCC rating. A FRCC rating is determined for an area by determining the weighted average of all major (dominant) vegetation FRCC ratings. FRCC 1 is desired for each BPS and for the proposed treatment area. A departure from FRCC 1 (reference condition) to FRCC 2 or FRCC 3 serves as an indicator that changes need to be implemented. The current rating for the project area is FRCC 2 and 3.

1.2 Project Location

The proposed project is located in White Pine County in the Snake Valley South Watershed, approximately five miles southwest of Baker, Nevada (Map 1). The project includes both BLM and NPS administered lands in the Kious Basin. The legal description of the project area is as follows:

- T 13N, R 69 E, sec 24 (Mt. Diablo Base and Meridian);
- T 13N, R 70 E, sec 19, 20, 29, 30 (Mt. Diablo Base and Meridian)



Map 1. Kious Basin Sagebrush Steppe and Habitat Restoration Project Location Map.

1.3 Purpose and Need for Action

The purpose and need of this action is to respond to the ecological departure from the natural or historical reference vegetative condition. The ecological departure is primarily due to above normal density of pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) trees within sagebrush plant communities. In some sagebrush sites the non-native, invasive species cheatgrass (*Bromus tectorum*) has become established. The need for the action is to provide appropriate habitat conditions and shift the area to a FRCC 1 rating.

A secondary need of the project is to improve habitat conditions within Kious Basin for sage-grouse and ungulates, especially pronghorn antelope. This area is an important wildlife corridor between Snake Valley and the Snake Range. Monitoring data collected by Great Basin National Park (GBNP) indicates that sage-grouse in the area are declining possibly due to an increased density of trees within the area. In addition, understory grasses and forbs as well as shrub species in the sagebrush community are being lost due to competition with high tree density. Both BLM and GBNP are concerned about the potential loss of this important corridor for wildlife moving from Snake Valley to the higher elevations of the Snake Range on the national park.

1.4 Scoping, Public Involvement, and Issues

The Kious Basin project was internally scoped to the Schell Field Office Interdisciplinary Team on March 7, 2011. The issues identified were: Livestock Grazing, Vegetation Resources, Noxious and Invasive Species, Fish and Wildlife, Special Status Animal Species, Visual Resources, and Soils.

2.0 Description of Proposed Action and Alternatives

2.1 Proposed Action

The proposed action is to treat approximately 850 acres of public lands administered by the BLM in the Kious Basin. The treatment object would shift vegetation species composition from FRCC 2 to FRCC 1 by reducing tree canopy coverage of pinyon pine and Utah juniper, and restoring sagebrush communities. The proposed treatments are broken into three categories: tree thinning, invasive species control, and native seeding.

Tree Thinning

This action would consist of removing single leaf pinyon pine, Utah juniper, and mountain mahogany (*Cercocarpus ledifolius*) from the sagebrush sites. Methods for removing trees would consist of both hand felling and mechanical methods. Hand felling would consist of crews cutting trees using chainsaws. Hand felling would occur in the areas that exhibit lower tree density and around Kious Spring. All trees would be cut within 200 feet of the spring and the riparian area. All slash would be made available to the public for removal as biomass (fuelwood). Leftover slash may be lopped and scattered, chipped, removed from the site, or piled for burning. A prescribed fire burn plan would be completed and approved for burning piles associated with this project.

Mechanical tree thinning would consist of selective tree thinning through mastication as well as creating larger openings through mastication or chaining. Both methods would require the use of heavy equipment such as a masticator, bull hog, feller-buncher, or similar piece of equipment that would selectively remove and shred the trees, or using an Ely chain (ship anchor chain with railroad iron welded perpendicular to the links) pulled by two bulldozers to remove trees. The mastication method would consist of heavy equipment traveling off-road and selectively grinding trees to mulch while still maintaining a natural mosaic appearance. The chaining would consist of two bull dozers pulling a large ship anchor chain between them to remove larger areas of trees. The chain would be pulled in one direction and would then be pulled in the opposite direction to increase tree mortality. The mechanical methods would occur in the areas that exhibit higher tree density. A large portion of the trees would be removed from the project area. Single trees, small patches, larger islands and stringers of trees would be left so that the treatment appears as a natural as possible and to provide cover for wildlife. To eliminate damage to soils, subsurface flow paths, stream banks, vegetation, or other potential resource concerns, mechanical treatment would be restricted within 200 feet from the furthest extent of riparian vegetation or from the highest vertical point of streambanks. In order to reduce the visual impact on the landscape, the mechanical treatment edges would follow natural contours to avoid straight lines and soften the edges of treatment areas to better mimic natural patterns across the landscape.

Invasive Species Control

Invasive species control would target cheatgrass growing within the project boundary after tree removal and before native seeding occurs. The primary control method would be application of the herbicide imazapic. Other potential herbicides to be used include glyphosate and 2,4, D. All product label specifications would be followed. Only BLM and Environmental Protection Agency aquatically approved herbicides would be used near surface water. All activities would follow the Standard Operating Procedures outlined in the Weeds Risk Assessment (Appendix I). Depending on chemical, size of the area, and acceptable amount of drift, applications of treatments could include backpack application, pack animal tank application, ATV/UTV tank application, truck or tractor tank application, and aerial application. Riparian resources along the border of the proposed treatment area would be buffered to avoid introduction of herbicide into water sources. Herbicide would be used according to label instructions. In addition, the Standard Operating Procedures (SOPs) listed in Table 2-8 of the BLM Programmatic EIS for Vegetation Treatments Using Herbicide (BLM, 2007).

Native Seeding

Native seeding would be applied in treated areas that do not have an appropriate amount of grasses, forbs and shrubs present post treatment. This may occur in areas where very dense tree cover has prevented adequate understory vegetation to grow or in areas where herbicide is applied to cheatgrass. Only native seed would be used for reseeding projects. Seed could be applied by a number of methods or a combination of the following methods; hand broadcast seeding, aerial seeding or by using a broadcast seeding with ATVs. Hand broadcast seeding would consist of people walking through the treatment area with portable seed spreaders. Aerial seeding would be completed with a helicopter using a large aerial broadcast seeder. ATV seeding would consist of driving ATVs through the treatment area with broadcast seeders mounted to the ATV. In areas that would be chained, the seed would be applied after the first pass of the

chaining to help incorporate the seed into the soil. Seed dribblers may also be used on the bulldozers to press smaller seed onto the soil.

General

Cultural Resources

A Cultural Needs Assessment would be completed for each unit prior to implementation of any treatment. Identified cultural sites would be recorded and evaluated to determine eligibility for the National Register of Historic Places. Eligible cultural resources would be avoided or impacts mitigated as necessary before any surface disturbing treatments are initiated. A minimum 30-meter buffer would be in place to avoid all cultural sites deemed eligible to the National Register of Historic Places. Avoidance areas would be irregularly shaped and blended with the view of the natural landscape.

Mineral Claims

A survey for mining claim markers in documented active claim sites would be conducted prior to implementing treatments that could possibly destroy the marker (e.g., mechanical treatments). All active mining claim marker locations and tag information would be recorded. Active mining claim markers or stakes would be avoided to the extent practical. Active mining claim markers that are destroyed by prescribed burning, thinning, or chaining operations would be re-staked using a legal mining claim marker. The re-staking of mining claim markers would occur in coordination with the existing mining claimants to ensure accurate, legal staking procedures that would minimize damage to claims. If any mining sites or dumps are discovered within the project area, operations would avoid these sites in order to minimize risk from potentially hazardous materials or mine features. Sites would also be reported to the Ely District Hazardous Materials Coordinator.

Off Road Travel

Existing roads would be used to the greatest extent possible. No new roads would be constructed during project implementation. Off-road travel with heavy equipment and vehicles would occur during implementation. Loading and unloading of equipment would occur on existing roads to minimize off-road disturbances and impacts. If determined necessary, signs would be posted along roads within or adjacent to treatments in regards to travel restrictions to assist in mitigating impacts from future cross country travel.

Grazing Post Treatment

Coordination with the affected livestock grazing permittees within the allotment being treated would be conducted prior to any treatment occurring. Any livestock grazing closure for the purpose of the vegetation treatment would be done by agreement with the permittee or through the grazing decision process prior to the treatment. Livestock grazing would not be authorized within the treatment areas during implementation. Livestock grazing would resume immediately within treatment areas that exhibit at least 10 percent foliar cover of desirable grasses and forbs. Seeded areas would be closed to livestock grazing for two growing seasons or until a minimum of five or more desirable perennial plants per square meter would be established within the treated area. Desirable perennial plants are those plants that are native or introduced and have the ability to maintain ecosystem processes and provide forage for livestock and wildlife.

Established plants are those that are no longer juvenile plants and have a root system capable of withstanding grazing pressure.

Progress towards meeting vegetation objectives would be measured from selected monitoring sites using random meter square quadrats. Monitoring sites would be established prior to project implementation however; additional sites may be established within one year following treatment completion. Monitoring locations would be measured annually during the livestock grazing closure period. The closure period may be extended until objectives listed above have been met.

An interdisciplinary team would conduct a review of the resource monitoring data and objectives to determine if and when livestock grazing should be allowed to occur within the project area. If environmental factors prevent attainment of resource management objectives following the mandatory rest period, an interdisciplinary team would review resource monitoring data and determine an appropriate grazing regime with the permittee. Any terms and conditions specific to livestock grazing within the project area would also be discussed and included in any annual grazing authorization, which could require a new grazing decision to be issued.

Cadastral Markers
Surveys would be conducted for cadastral monument and markers prior to any surface disturbing activities and that, if they are disturbed, they would be restored after treatment where possible.

Wildlife
During implementation of the proposed action the following guidelines identified in the RMP would be adhered to for wildlife preservation: Sage-grouse: restrict activities within 2 miles of an active lek from March 1 through June 30; Raptors: restrict activities within 0.5 miles of an active nest from May 1 through July 30; Migratory birds: conduct nest clearance surveys within one week of treatment during migratory bird nesting season from April 15 through July 30.

2.2 No Action Alternative
No treatments would be conducted on land administered by the Bureau of Land Management within Kious Basin area.

2.3 Alternatives Considered but not Analyzed in Detail
No additional alternatives were identified as there were no unresolved resource conflicts.

2.5 Conformance with Land Use Plan
The proposal is in conformance with the Ely District Record of Decision and Approved Resource Management Plan (August 2008). The following are resource goals and/or objectives that apply:

Fish and Wildlife

- **Goal:** “Provide habitat for wildlife (i.e., forage, water, cover, and space) and fisheries that is of sufficient quality and quantity to support productive and diverse wildlife and

fish populations, in a manner consistent with the principles of multi-use management, and to sustain the ecological, economic, and social values necessary for all species."

General Wildlife Habitat Management (Aquatic and Terrestrial)

- **Management Action WL-1: "**Emphasize management of priority habitats for priority species."

- **Management Action WL-8:** "Focus restoration projects initially in priority habitats (i.e., calving/fawning/kidding/lambing grounds, crucial summer range, and crucial winter range), and then in other seasonal habitats within a watershed."

Special Status Species

- **Management Action SS-38:** Maintain intact and quality sagebrush habitat. Prioritize habitat maintenance actions from the BLM National Sage Grouse Conservation Strategy to: 1) maintain large areas of high quality sagebrush currently occupied by greater sage-grouse; 2) maintain habitats which connect seasonal sagebrush habitats in occupied source habitats; and 3) maintain habitats that connect seasonal sagebrush habitats in occupied isolated habitats (also see Appendix D).

- **Management Action SS-39:** Implement proactive and large scale management actions to restore lost, degraded, or fragmented sagebrush habitats and increase greater sage-grouse populations. Prioritize habitat restoration actions from the BLM National Sage Grouse Conservation Strategy to: 1) reconnect large patches of high quality seasonal habitats, which greater sage-grouse currently occupy; 2) enlarge sagebrush habitat in areas greater sage-grouse currently occupy; 3) reconnect stronghold/source habitats currently occupied by greater sage-grouse with isolated habitats currently occupied by greater sage-grouse; 4) reconnect currently occupied and isolated habitats; 5) restore potential sagebrush habitats that currently are not occupied by greater sage-grouse. Develop allowable use restrictions in greater sage-grouse habitats undergoing restoration, on a case-by-case basis, as dictated by monitoring

Vegetation

- **Goal**: "Manage vegetation resources to achieve or maintain resistant and resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape."

- **Objective**: "To manage for resistant and resilient ecological conditions including healthy, productive, and diverse populations of native or desirable nonnative plant species appropriate to the site characteristics."

Parameter: General Vegetation Management:

- **Management Action VEG-1**: "Emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape, using all available current or future tools and techniques."

- **Management Action VEG-5**: "Focus restoration of undesirable conditions initially on those sites that have not crossed vegetation transitional thresholds."

- **Management Action VEG-6**: "Emphasize the conservation and maintenance of healthy, resilient, and functional vegetation communities before restoration of other sites."

- **Management Action VEG-7**: "Determine seed mixes on a sire-specific basis dependent on the probability of successful establishment. Use native and adapted species that compete with annual invasive species or meet other objectives."

Parameter: Sagebrush (basin big sagebrush, Wyoming big sagebrush, mountain big sagebrush, and black sagebrush)

<u>Management Actions</u>

VEG-16: Implement actions to attain the desired vegetation states shown in **Table 1**.

Table 1. Desired Range of Conditions of Sagebrush (Distribution of Phases and States)

State/Phase Name	Total Herbaceous State (Early, Mid, and Late Phases)[1]	Total Shrub State	Total Tree State	Altered State Annual/Perennial Invasive	Altered State Nonnative Perennial Seeded
LANDFIRE classes	A, B, and C	D	E	Uncharacteristic	Uncharacteristic
Proposed RMP[2]	85% (4,776,500 acres)	5% (281,000 acres)	5% (281,000 acres)	0% (0 acres)	5% (281,000 acres)

[1] Sagebrush in the mid-late phase of the herbaceous state is desired for wildlife habitat.
[2] The Proposed RMP approximates and incorporates the LANDFIRE Biophysical Setting Models for Great Basin xeric mixed sagebrush and Inter-Mountain Basin big sagebrush. Altered states (annual/perennial invasive and nonnative perennial seeded) are an uncharacteristic condition not recognized by LANDFIRE Biophysical Setting Models but are part of current conditions.

VEG-17: Integrate treatments to:

1. Establish and maintain the desired herbaceous state or early shrub state where sagebrush is present along with a robust understory of perennial species.

2. Prioritize treatments toward restoration of sagebrush communities on areas with deeper soils and higher precipitation.

VEG-18: Manage native range to meet the requirements of wildlife species. Management will focus on maintaining or establishing diversity, mosaics, and connectivity of sagebrush between geographic areas at the mid and fine scales.

Parameter: Management Actions–Fire

- **Management Action FM-4**: "Incorporate and utilize Fire Regime Condition Class as a major component in fire and fuels management activities. Use Fire Regime Condition Class ratings in conjunction with vegetation objectives (see the discussion on Vegetation Resources) and other resource objectives to determine appropriate response to wildland fires and to help determine where to utilize prescribed fire, wildland fire use, or other non-fire (e.g., mechanical) fuels treatments."

- **Management Action FM-5**: "In addition to fire, implement mechanical, biological, and chemical treatments along with other tools and techniques to achieve vegetation, fuels, and other resource objectives."

- The action would also assist with meeting the *Standards and Guidelines for Nevada's Northeastern Great Basin*, which states in part (page 13), "Create and maintain a diversity of sagebrush age and cover classes on the landscape through the use of prescribed fire, prescribed natural fire, mechanical, biological and/or chemical means to provide a variety of habitats and productivity conditions" and "Where pinyon pine and/or juniper trees have encroached into sagebrush communities, use best management practices to remove trees and re-establish understory species".

2.5.1 Relationship to Statutes, Regulations, or other Plans:

The proposal is also consistent with other Federal, State and local plans or decisions including, but not limited to, the following:

- The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994)

- The Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996)

- Migratory Bird Treaty Act (1918 as amended) and Executive Order 13186 (1/11/01)

- State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada Historic Preservation Office for Implementing the National Historic Preservation Act (2009).

- The White Pine County Elk Management Plan (2007 Revision)

- White Pine County Conservation, Recreation, and Development Act of 2006 (Public Law 109-432)

- White Pine County Portion (Lincoln/White Pine Planning Area) Sage Grouse Conservation Plan (2004).

- White Pine County Public Lands Policy Plan (2007)

3.0 Description of the Affected Environment and Environmental Effects

3.1 Introduction

This Chapter will present the current affected environment and effects to resources identified as issues during scoping. It will present the current conditions of the resources that could potentially be impacted as well as describe the direct, indirect and cumulative impacts of each action upon that resource. Direct impacts are those that are defined by 40 CFR 1508.8(a) as effects "which occur at the same time and place". Indirect impacts are those that are defined by 40 CFR 1508.8(b) as effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Cumulative impacts are the effects on the environment which result from the incremental impacts of actions in this EA when added to other past, present and reasonably foreseeable actions.

3.2 General Description

The Kious Basin project area is located within the larger Kious Basin on the east side of the South Snake Range, approximately five miles southwest of Baker, NV. The Great Basin National Park borders the BLM portion of the project to the west. Elevation in the area ranges from 5,800 ft. mean sea level (MSL) to 6,900 ft. MSL. Average annual precipitation in the area varies from 8 inches to 14 inches per year, with higher elevations getting progressively more precipitation annually. Soils are classified as gravelly loams. Slopes are gentle, generally less than 20%. The mean annual temperature ranges from 41 – 50 degrees fahrenheit with average growing season ranging from 60-120 days.

Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed in the H-1790-1 NEPA Handbook (2008) to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely District BLM in particular. The items listed in Table 1 were dismissed from detailed analysis based on the explanation listed in the table. Resources that were identified as potentially impacted are analyzed in further detail in this chapter.

Table 2. Resources Dismissed from Detailed Analysis

Resource/Concern	Rationale for Dismissal from Detailed Analysis
Air Quality	Air Quality in the project analysis area is designated by the EPA as being better than the national standards, attaining the national standards, unclassifiable, or cannot be classified. The proposed project would not affect the classification of the six critical pollutants monitored by the State of Nevada.
Cultural Resources	Cultural Resources would be avoided based on the design features included in the Proposed Action.
Environmental Justice	No minority or economically disadvantaged populations occur within the project area.
Farmlands, Prime and Unique	No Unique farmlands occur in the State of Nevada. No Prime Farmlands occur within the proposed project area.
Floodplains	The resource is not present. The project analysis area does not occur on Federal Emergency Management Agency flood maps.
Human Health and Safety	Project will not impact human health and safety since the proposed action would implement all recommended safety measures associated with herbicide application. The herbicide label would be followed, and additional standard operating procedures listed in Table 2-8 of The Final Programmatic Environmental Impact Statement (PEIS) – Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007) would be followed.
Forest Health	Resource would not be affected by the proposed action since the project occurs within sagebrush plant communities. No analysis is necessary.
Mineral Resources	There would be no effects to mineral resources from the proposed action. Active mining claims in the area would be avoided or replaced if damaged as described in the proposed action.
Native American Religious Concerns	There are no identified traditional religious or cultural sites of importance within or adjacent to the proposed project area (in compliance with the National Historic Preservation Act of 1966: Section 106).
Wetlands and Riparian Zones	The proposed project was designed to eliminate the effects of heavy equipment and herbicides to riparian resources.

Resource/Concern	Rationale for Dismissal from Detailed Analysis
Special Status Plant Species, other than those listed or proposed by the FWS as Threatened or Endangered	None documented within the project area.
Threatened or Endangered Species or critical habitat.	No Threatened or Endangered Species present within the project area.
Wastes, Hazardous or Solid	No hazardous or solid waste would be produced on project site.
Water Quality-Drinking/Ground	Water Quality would not be affected by the proposed action. The proposed action would be designed to provide an adequate buffer to eliminate the possibility of effects to water quality.
Water Resources (Water rights, etc.)	The proposed action would not lead to a change in the quantity of surface and subsurface water that occurs in the analysis area. Existing water rights would not be affected.
Wetland/Riparian Resources	Riparian resources which occur within the proposed project area would be buffered from heavy equipment and herbicides. The proposed project would not affect riparian resources within the project area.
Wild and Scenic Rivers	Not present within the project area.
Wild Horses	The project area is outside of all Herd Management Areas.
Wilderness/WSA	Not Present within the project area.
Land with Wilderness Characteristics	This project is within Intensive Inventory Unit 107A which was eliminated from further inventory in 1979 since the area was lacking wilderness character.
Areas of Critical Environmental Concern	There are no Areas of Critical Environmental Concern within the project area.

3.3 Livestock Grazing

Affected Environment

The project occurs within the Baker Creek Allotment that has an active grazing permit for both cattle and sheep. Table 2 summarizes the permitted use within the allotment. No rangeland improvements exist within the project area. The herbaceous understory (grasses and forbs) far below potential and non-existent in some areas. The lack of the herbaceous understory has also resulted in less available forage for livestock and wildlife.

Table 3. Permitted Grazing Use on the Baker Creek Allotment

Allotment	Type of Use	Livestock		Begin Date	Off Date	AUM's
		Number	Kind			
Baker Creek	Active	3760	Sheep	12/01	04/30	3758
Baker Creek	Active	67	Cattle	11/01	06/10	491
Baker Creek	Trail Use	100	Cattle	06/10	06/18	30
Baker Creek	Trail Use	80	Cattle	10/16	10/31	42

Environmental Effects

Proposed Action
The short-term effects of the Proposed Action would temporarily close livestock grazing within the treated area until the desired species are established and vegetation objectives have been met. The long term effects of the proposed action would shift the current plant community from a state with little understory to a more desired ecological condition with more native perennial grasses and forbs as well as a healthy perennial shrub component. This would also increase the available forage for livestock and wildlife (Davies et al. 2011; Bates et al. 2005; Monsen et al, 2004).

No Action Alternative
Grazing would continue as authorized within the Baker Creek Allotment. Species composition would remain the same as they are currently and could continue to be reduced through the continued departure from the reference condition. The available amount of forage would also remain the same or slowly decrease in the long-term (Davies et al. 2011; Pyke, 2011; Miller and Tausch, 2001).

3.4 Vegetation Resources

Affected Environment
Plant communities within Kious Basin are unique due to the granitic soils derived from granite outcrops. Current vegetation is predominately single-leaf pinyon pine and Utah juniper with areas of sagebrush, bitterbrush and other shrubs scattered throughout. The herbaceous understory is extremely limited, and in some cases non-existent. Due to the current departure from the reference ecological condition class, the health, vigor and coverage of native annual and perennial shrubs, grasses and forbs have seen an overall reduction. Cheatgrass is present in small quantities throughout the project area.

Environmental Effects

Proposed Action
The mechanically treated areas would remove a large portion of the trees and crush, remove or break a portion of the larger shrubs where the heavy equipment and chain travels through the

project area. The hand cut areas would remove a large portion of the trees and have very minimal impacts to the remaining vegetation, because little disturbance would occur with hand crews. Small strips and areas of vegetation may be crushed due to off-road travel by ATV or pick-up trucks in and out of the project area from existing roads.

The proposed action would increase the health, vigor, recruitment and production of native perennial grasses, forbs, and shrubs due to the increased availability of water and nutrient created by reducing resource competition from the tree species as well as seeding native grass, forb and shrub species (Davies et al. 2011; Bates et al. 2005; Monsen et al, 2004). The use of agency approved herbicides would target invasive annual species and reduce the density of these species (Davies et al. 2011; Pyke, 2011). The proposed treatment should shift vegetation composition towards FRCC 1 reducing the fuel loading and continuity of hazardous fuels and create a more resilient vegetation community (Miller and Tausch, 2001).

No Action Alternative

Species diversity and composition would remain the same as the current conditions and may be reduced through canopy enclosure and reduced nutrient and water availability. The loading of biomass would continue to increase in the long-term, increasing the likelihood of catastrophic wildfires. The Fire Regime Condition Class would continue towards FRCC 3. In the event of a future disturbance like wildfire, the project area would be more susceptible to a plant community-conversion, where the widespread colonization of cheatgrass is more likely (Davies et al. 2011; Pyke, 2011; Miller and Tausch, 2001).

3.5 Non-native Invasive and Noxious Species

Affected Environment

The Kious Basin project area has been inventoried for Nevada State listed noxious weed species under the standard BLM inventory schedule, and no noxious species were found. Small, dispersed areas of cheatgrass are present in the project area.

Environmental Effects

Proposed Action

The proposed action would follow BLM standard operating procedures (SOPs) (Appendix A), for noxious weeds - there would be no effect on State-listed noxious weed species. Vegetation and soil disturbing activities may open areas to the possibility of invasive or noxious weed introduction, as well as to spread the invasive species that are currently present. Following BLM SOPs would minimize impacts. The proposed herbicide treatments would reduce the density and possibly eliminate small patches of cheatgrass. Seeding perennial vegetation would improve species cover and diversity, which would also help prevent the expansion or establishment of invasive species (Davies et al. 2011; Pyke, 2011). The reduction of fine fuels and thinning of pinyon-juniper cover under the proposed would make the project area more resilient to a future disturbance event like wildfire.

No Action Alternative
The no action alternative would not affect State-listed noxious or non-native species. Cheatgrass populations would remain at current levels until a future disturbance. In the event of a future disturbance like wildfire, the project area would be more susceptible to a plant community-conversion, where the widespread colonization of cheatgrass is more likely.

3.6 Fish and Wildlife, Special Status Animal Species (Federally listed, Proposed Threatened, Endangered Species, and BLM Sensitive), and Migratory Birds

3.6.1 Fish and Wildlife

Affected Environment

The Kious Basin project area is within year-round habitat for Rocky Mountain elk, pronghorn antelope, bighorn sheep, and is mule deer crucial summer habitat. A variety of other wildlife species inhabit the project area such as shrews, ground squirrels, rabbits, mice, coyote, fox, and numerous reptile species.

Environmental Effects

Proposed Action
The proposed action would temporarily displace wildlife while treatment is occurring and mortality of less mobile animals may occur by heavy equipment. After project completion, big game and other wildlife would likely return to the area. In the long term, the removal of pinyon and juniper trees would improve wildlife habitat by increasing forage and browse species as well as maintaining cover (Davies et al. 2011; Bates et al. 2005; Monsen et al, 2004). Islands and stringers of trees left would provide hiding cover for wildlife adjacent to open forage areas (thinning sites), which would improve overall wildlife habitat.

No Action Alternative
Under the no action alternative, wildlife habitat would remain in its current condition; however, the available forage may be reduced through the continued departure from FRCC 1 (Davies et al. 2011; Pyke, 2011; Miller and Tausch, 2001). Wildlife forage habitat would continue to decline and become reduced over time.

3.6.2 Special Status Species

Affected Environment

The greater sage grouse is a BLM Sensitive Species that has been determined to be warranted for listing under the Endangered Species Act (ESA), but which is precluded by other species of higher priority (Federal Register/Vol. 75, No. 55/Tuesday, March 23, 2010). Priority and general sage grouse habitat has been identified by the BLM in coordination with the Nevada Department of Wildlife. Priority habitat comprises areas that have been identified as having the highest conservation value to maintaining sustainable sage grouse populations which includes breeding, late brood-rearing, and winter concentration areas. General habitat comprises areas of occupied seasonal and year-round habitat outside the priority habitat. The policies and procedures identified in recent Washington Office Instruction Memorandums (WO IM No. 2012-043 and

WO IM No. 2012-044) are designed to minimize habitat loss in both priority and general habitat and will help the BLM meet objectives to maintain and restore sage grouse habitat. The Fish and Wildlife Service has acknowledged that annual grass invasion and pinyon-juniper encroachment both contribute to sage grouse habitat degradation and fragmentation (Fish and Wildlife Service, 2010). The eastern portion of the Kious Basin project area is within priority sage grouse habitat. The Kious Basin lek is an active lek within two miles of the proposed project area. In 2012, the Nevada Department of Wildlife recorded a high of 2 males on this lek. While a majority of the project area is dominated by pinyon pine and juniper trees, the project area has the potential to be nesting, summer brood-rearing and winter sage grouse habitat. Other special status species that may be found in the project area include: pygmy rabbit, northern goshawk, golden eagle, ferruginous hawk, Swainson's hawk, peregrine falcon, pinyon jay, bald eagle, loggerhead shrike, sage thrasher, brewer's sparrow, and numerous sensitive bat species.

Environmental Effects

Proposed Action

The proposed action may temporarily displaced special status species while treatment is occurring and mortality of less mobile animals may occur by heavy equipment. Removing pinyon pine and juniper trees would remove potential roost sites for tree roosting bats, however, there would be sufficient pinyon and juniper habitat adjacent to the project area, and within the remaining stringers and islands. The treatment would not result in any sensitive species becoming listed under the Endangered Species Act. In the long term, the removal of pinyon pine and juniper trees would increase and improve sagebrush habitat by increasing grass, forb and shrub cover (Davies et al. 2011; Bates et al. 2005; Monsen et al, 2004), benefiting numerous sagebrush obligate species such as sage grouse, pygmy rabbits, brewer's sparrow, and sage thrasher.

No Action Alternative

Under the no action alternative, special status species would remain unaffected in the short term. The continued departure from FRCC 1 would reduce the available habitat for the greater sage grouse and other special status species (Davies et al. 2011; Pyke, 2011; Miller and Tausch, 2001). Species that rely on shrub communities would reduce as tree densities increase while tree dependent wildlife species would increase with increasing tree densities.

3.6.3 Migratory Birds

Affected Environment

The project area provides habitat for numerous migratory bird species. Species common in pinyon and juniper stands include pinyon jay, mountain chickadee, juniper titmouse, gray flycatcher, western scrub jay, and mountain bluebird. Common sagebrush species are brewer's sparrow, sage thrasher, sage sparrow, horned lark, green-tailed towhee, and vesper sparrow.

Environmental Effects

Proposed Action
Impacts to migratory birds would be minimized due to nest clearance surveys being conducted if treatments were to occur during the nesting season. Any nests discovered would be buffered and avoided until fledglings have left the nest. While pinyon and juniper trees would be lost for nesting; there is adjacent useable nesting habitat for birds as well as an increase in sagebrush habitat for sagebrush obligates.

No Action Alternative
Under the no action alternative, migratory birds would remain unaffected in the short term. The continued departure from FRCC 1 would result in continual degradation of both pinyon-juniper and sagebrush habitats. Migratory bird species that rely on shrub communities would reduce as tree densities increase while tree dependent migratory bird species would increase with increasing tree densities.

3.8 Visual Resource Management

Affected Environment
The Kious Basin is visible from the town of Baker Nevada and Highway 487. The project area is in VRM Class III in which the Visual Resource Objective is to partially retain the existing character of the landscape. The change allowed is moderate and activities may attract attention but should not dominate the view. A key Observation Point was taken just south of the project area and a contrast rating prepared. The location was selected as seen from the nearest highway and the town of Baker.

Environmental Effects

Proposed Action
The proposed project would have no effect on either the Land or the Structures within the project area. The vegetation would be the only affected element. The contrast rating worksheet resulted in moderate contrasts in the appearance of the vegetation as a result of the proposed action. In the short term (1-2 years), treatments would be visually conspicuous with greater contrast: burned areas would be blackened, mechanically treated areas would be present with toppled trees for example. The results would be fairly distinct across the landscape. However, in the long-term (3 years and longer), as the dead materials break down, is burned or removed and new vegetation starts growing, the distinction would be lessened and the treated areas would appear as natural openings on the landscape. Natural stringers and islands left would also reduce contrastings within the landscape.

No Action Alternative
No visual impact would occur.

3.9 Soil Resources

Affected Environment

The proposed project area is composed of soil with surface textures ranging from gravelly sands along some ephemeral drainage systems in Kious Basin to coarse loams in the remainder of the area including the riparian stringers associated with Kious Spring. Soil susceptibility to wind and erosion is directly related to soil texture. The sandy soils are less susceptible to both water and wind erosion while loamy soils have slightly higher potential erosion. Soils throughout the analysis area contains relatively low amounts of clay-sized constituents, generally between 6% and 18% by volume, and possess low to moderate compaction capability.

Environmental Effects

Proposed Action

The mechanical equipment could disturb soils by directly compacting and displacing surface horizons, which could lead to an increased risk of wind and water erosion. Soil textures throughout the treatment areas are generally not prone to compaction given their coarse sandy or gravelly loam characteristics. Soil compaction is not expected to be measurably altered as a result of the proposed action. Fire could leave areas of hydrophobic soil if permitted to burn too severely. Large slash piles may exhibit small areas of hydrophobic soil underneath and adjacent to the piles due to high temperatures generated while burning. The potential for such effects is minor and any that occur would be very limited spatially and temporally. Use of chemicals to affect vegetation would not directly affect soils. Loss of ground cover vegetation may affect soil retention or soil stability in the short term or at least until understory grasses, forbs and shrubs establish. The chained areas would still provide cover with downed trees, and mulch would provide soil protection in mastication areas. It is expected that the efficacy of chemical treatments across landscape settings would not lead to increased potential for soil erosion or soil loss. Chemical treatment of target species would leave sufficient ground cover of non-target vegetation to retain soil resources. The removal of the trees may also improve soil retention and hydrological function over the long term on the site by allowing the herbaceous and shrub layers to re-establish (Pierson et al. 2007; Bates et al. 2005)

No Action Alternative

The no action alternative would result in no action-related effects to soil resources. There could be a long-term effect to soil productivity as shrub-grassland dominated systems change to large tree dominated systems. In other words, there could be a change in the timing and processes involved in the way nutrients and organic matter enter the soils; finer vegetation potentially changing to coarser vegetation or shorter nutrient cycling times versus potentially longer times. Interspaces among trees would be bare, compared to a shrub-grassland community that would be filled with grasses and forbs.

4.0 Cumulative Impacts

The purpose of the cumulative impacts section required by Council on Environmental Quality (CEQ) is to evaluate the significance of the Proposed Action's contribution to the cumulative impacts (40 CRF, Part 1500).

Cumulative Impacts are defined as incremental impacts of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or persons undertake such other actions. Cumulative impacts can result from minor but collectively significant actions taken place over a period of time. The Cumulative Impact area is the project area of the BLM and NPS administered lands.

4.1 Past Actions

There has been limited action in the Kious Basin. The Kious Spring was identified in the BLM's RMP as a Scenic Area to preserve the spring and area around the spring. There are numerous signs such as artifacts and petroglyphs in the area and neighboring areas suggesting the area was inhabited by Native Americans. A reservoir was created just below the spring to capture water for livestock and wildlife. Moderate grazing has occurred in the area for a number of years and intense to extreme grazing occurred in the late 1800's early 1900's. Wildlife has been present in the area utilizing the forage and spring for winter habitat. Recreation (camping, hunting, off-highway vehicle use (OHV) also occurs in the area occasionally.

4.2 Present Actions

The Baker Creek allotment is current in use by livestock; however, livestock is seldom in the proposed project area according to the permitte, and actual use records. Visitor occurrence has increased in the neighboring town of Baker Nevada due to the Great Basin National Park. Camping, hunting, off-highway vehicle use (OHV), and other recreational use occurs on a limited basis. Roads that access the Kious Spring are very rough, unimproved, two tracks, and require a four wheel drive. The area is habitat to: greater sage grouse, pygmy rabbit, northern goshawk, golden eagle, ferruginous hawk, Swainson's hawk, peregrine falcon, pinyon jay, bald eagle, loggerhead shrike, sage thrasher, brewer's sparrow, numerous sensitive bat species, Rocky Mountain elk, pronghorn antelope, Bighorn Sheep, coyote and fox.

4.3 Reasonable Foreseeable Future Action

There are currently no other projects proposed to occur in the Kious Basin Area. The Southern Nevada Water Authority Right of Way has proposed to draw water from the Snake Valley Watershed. However, the recent Record of Decision for the project does not authorize a right-of-way for the Snake Valley area where this project occurs. Recreation and livestock grazing would likely continue to occur in the area.

4.4 Cumulative Effects Summary

Livestock Grazing

The implementation of the proposed action combined with the past, present, and future actions should shift the area toward FRCC 1, which would facilitate and establish conditions that would promote healthier, more productive and resilient rangeland conditions that could best withstand the minimal grazing use of the area.

Vegetation Resources

The implementation of the proposed action combined with the past, present, and future actions would improve vegetation composition by providing a mosaic disturbance which is necessary to

restore the natural vegetative community structure. Implementation of the project would also allow water and other resources to be available for native grasses, forbs and shrubs to recolonize and establish. The vegetation community within the project area would be more resilient to future disturbance by moving toward a more historical (natural) regime.

Non-native Invasive and Noxious Species
The implementation of the proposed action, in combination with past, present and future actions, would likely remove a portion of the invasive species currently present and allow the area to become more resistant to invasive species. Following standard operating procedures (Appendix A) would minimize spread and establishment of invasive species.

Fish and Wildlife, Special Status Species (Federally listed, Proposed Threatened, Endangered Species, and BLM Sensitive), and Migratory Birds
The proposed treatment combined with the past, present, and future actions would facilitate a mosaic landscape and a healthy, resilient plant community conducive to several species. Removing the trees and facilitating grass and forb cover would provide for more available sage grouse nesting and brood/rearing habitat. Design features during and after the treatment would reduce impact to wildlife.

Visual Resources Management
The proposed action in combination with future actions would repeat the basic elements of form, line, color and texture and therefore conform to the appropriate VRM class objectives and the Ely RMP. All actions would conform to the VRM management class established for the project area.

Soil Resources
The implementation of the proposed action combined with past, present, and future actions would have limited effects to soil resources as the vegetation left on the site would provide cover to prevent erosion, and the equipment used would be minimal ground disturbing. Future actions in the area are not expected to change.

5.0 Consultation and Coordination

Coordination and cooperation with Great Basin National Park (GBNP) began in 2011 and a Memorandum of Understanding between GBNP and BLM was signed in November of 2012. This agreement provides cooperative assignments between GBNP and BLM for the Kious Basin Project. Both agencies are responsible for completing the appropriate NEPA for their land jurisdiction.

Coordination with Nevada Department of Wildlife was initiated on September 7, 2012. No comments have been received to date, but comments and/or concerns would be addressed prior to issuing a decision for this project.

Native American consultation is currently occurring. Comments and/or concerns would be addressed prior to issuing a decision for this project.

6.0 List of Preparers

Name	Title
TJ Mabey	Forester
Nancy Williams	Wildlife Biologist
Ben Noyes	Wild Horse and Burro Specialist
Mark D'Aversa	Hydrologist
Leslie Riley	Archeologist
Melanie A Peterson	Environmental Protection Spec.
Elvis Wall	Tribal Coordinator
Cindy Longinetti	Realty Specialist
Dave Davis	Geologist
S. Gus Malon	Recreation Specialist
Cody Coombs	Supervisory Natural Resource Specialist
Rob Frisk	RX Fire/Fuels Specialist
Ken Vicencio	Range Management Specialist
Emily Simpson	Wilderness Planner
Erica Husse	Invasive Species Specialist
Solomon Odom	Planning and Environmental Coordination
Alicia Hankins	Land Law Examiner

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Appendix A

BLM Invasive Species Standard Operating Procedures
Kious Basin Sagebrush Steppe Restoration

- When manual weed control is conducted, remove the cut weeds and weed parts and dispose of them in a manner designed to kill seeds and weed parts.
- Where appropriate, vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. Vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Vehicles used for emergency fire suppression will be cleaned as a part of check-in and demobilization procedures. Cleaning efforts will concentrate on tracks, feet and tires, and on the undercarriage. Special emphasis will be applied to axels, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using global positioning systems or other mutually acceptable equipment and provided to the Ely District Office Weed Coordinator or designated contact person.
- Determine seed mixes on a site specific basis dependent on the probability of successful establishment. Use native and adapted species that compete with annual invasive species or meet other objectives.
- Conduct mixing of herbicides and rinsing of herbicide containers and spray equipment only in areas that are a safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes, or wells).
- Generally, conduct reclamation with native seeds that are representative of the indigenous species present in the adjacent habitat. Document rationale for potential seeding with selected nonnative species. Possible exceptions would include use of nonnative species for a temporary cover crop to out-compete weeds. In all cases, ensure seed mixes are approved by the BLM Authorized Officer prior to planting.
- Certify that all interim and final seed mixes, hay, straw, and hay/straw products are free of plant species listed on the Nevada noxious weed list.
- When managing in areas of special status species, carefully consider the impacts of the treatment on such species. When working in special status species critical habitat, hand spraying of herbicides is preferred over other methods.
- Do not conduct noxious and invasive weed control within 0.5 mile of nesting and brood rearing areas for special status species during the nesting and brood rearing season.
- .
- Consider nozzle type, nozzle size, boom pressure, and adjuvant use and take appropriate measures for each herbicide application project to reduce the chance of chemical drift.
- All applications of approved pesticides will be conducted only be certified pesticide applicators or by personnel under the direct supervision of a certified applicator.

- Prior to commencing any chemical control program, and on a daily basis for the duration of the project, the certified applicator will provide a suitable safety briefing to all personnel working with or in the vicinity of the herbicide application. This briefing will include safe handling, spill prevention, cleanup, and first aid procedures.
- Store all pesticides in areas where access can be controlled to prevent unauthorized/untrained people from gaining access to chemicals.
- Areas treated with pesticides will be adequately posted to notify the public of the activity and of safe re-entry dates, if a public notification requirement is specified on the label of the product applied. The public notice signs will be at least 8 ½" x 11" in size and will contain the date of application and the date of safe re-entry.

Appendix B

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Kious Basin Sagebrush Steppe Restoration

White Pine County, Nevada

On October 9, 2012 a Noxious & Invasive Weed Risk Assessment was completed for Kious Basin to conduct Sagebrush Steppe Restoration in White Pine County, NV.

Proposed Action

The proposed action is to treat approximately 850 acres of public lands administered by the BLM in the Kious Basin. The proposed treatments are broken into three categories: tree removal, noxious weed control, and native seeding.

Tree Removal

Tree removal would consist of removing single leaf pinyon pine (*Pinus monophylla*), Utah juniper (*Juniperus osteosperma*), and mountain mahogany (*Cercocarpus ledifolius*) from the sagebrush sites. Methods for removing trees would consist of both hand felling and mechanical methods. Hand felling would consist of crews cutting trees with chain saws on foot. Hand felling would occur in the areas of the project that exhibit lower tree density and around Kious Spring to reduce ground disturbance and preserve existing vegetation. All trees would be removed within 200 feet of the spring and the riparian area. All slash would be made available to the public for removal as biomass. Leftover slash may be lopped and scattered, chipped, removed from the site, or piled for burning. A prescribed fire burn plan would be completed and approved for burning of piles associated with this project. The mechanical methods would consist of a combination of selective tree thinning through tree mastication and chaining. Both methods would require the use of heavy equipment such as a bull hog, feller-buncher or similar piece of equipment that would selectively remove and shred the trees, and also using bull dozers and Ely chain to remove trees. The mastication method would consist of heavy equipment traveling off-road and selectively grinding trees while still maintaining a natural mosaic appearance. The chaining would consist of two bull dozers dragging a large ship anchor chain between them in two directions to remove larger areas of trees. The chain would be pulled in one direction and would the be pulled in the opposite direction to increase tree mortality within the chained areas. The mechanical methods would occur in the areas that exhibit higher tree density. A large portion of the trees would be removed from the project area. Single trees, small patches and stringers of trees would be left so that the treatment appears as natural as possible and to provide for wildlife habitat values. Riparian and water resource systems would be buffered to 100-feet from the furthest extent of riparian vegetation or from the highest vertical point of streambanks to preclude the risk of mechanical entry in order to eliminate damage to soils, subsurface flow paths, stream banks, vegetation, or other potential resource concerns. In order to reduce the visual impact on the landscape, the mechanical treatment edges would be feathered to blend into the edges of the non-treatment areas. Rather than having the edges of treatment units cross hillsides they should contour to avoid hard, straight lines. These standards would help soften the edges of treatment areas to better mimic natural patterns across the landscape.

Noxious Weed Control
Noxious weed control would target primarily cheatgrass (*Bromus tectorum*) growing within the project boundary after tree removal and before native seeding occurs. The primary control method would be application of the herbicide imazapic. Other potential herbicides to be used include glyphosate and 2,4, D. All product label specifications would be followed. Only Environmental Protection Agency aquatically approved herbicides would be used near surface water. All activities will follow the Standard Operating Procedures outlined in the Weeds Risk Assessment attached in Appendix A. Depending on chemical, size of the area, and acceptable amount of drift, applications of treatments could include backpack application, pack animal tank application, ATV/UTV tank application, truck or tractor tank application, and aerial application. Riparian resources along the border of the proposed treatment area would be buffered to avoid introduction of herbicide into water sources. A 300' buffer from water sources and non-target species would be utilized for all application types.

Native Seeding
Native seeding would be applied in treated areas that do not have an appropriate amount of grasses, forbs and shrubs present post treatment. This may occur in areas of very dense tree cover that prevented adequate understory vegetation to grow or in areas where herbicide is applied to cheatgrass. Only native seed would be used for reseeding projects. Seed could be applied by a number of methods or a combination of the following methods; hand broadcast seeding, aerial seeding or by using a broadcast seeding with ATVs. Hand broadcast seeding would consist of people walking through the treatment area with portable seed spreaders. Aerial seeding would be done with a helicopter and a large aerial broadcast seeder in which the helicopter would fly over the treatment area. ATV seeding would consist of driving ATVs through the treatment area with broadcast seeders mounted to the ATV.

<u>Project Location</u>
The proposed project is located in White Pine County in the Snake Valley South Watershed, approximately five miles southwest of Baker, NV

T 13N, R 69 E, sec 24;
T 13N, R 70 E, sec 19, 20, 29, 30

No field weed surveys were completed for this project. Instead the Ely District weed inventory data were consulted. There are no known noxious/invasive weed infestations within the project boundary, but the following species are documented within 3 miles of the project area:

Carduus nutans	Musk thistle
Centaurea stoebe	Spotted knapweed
Cirsium vulgare	Bull thistle
Tamarix spp.	Salt cedar

The project area was last inventoried for noxious weeds in 2009. Below is a list of un-documented invasive species found on the district; some of which may be present along roads in the area.

Arctium minus	Common burdock
Bromus diandrus	Ripgut brome
Bromus rubens	Red brome
Bromus tectorum	Cheatgrass
Ceratocephala testiculata	Bur buttercup
Convolvulus arvensis	Field bindweed
Elaeagnus angustifolia	Russian olive
Erodium circutarium	Filaree
Kochia scoparia	Kochia
Halogeton glomeratus	Halogeton
Marrubium vulgare	Horehound
Salsola kali	Russian thistle
Sysimbrium altissimum	Tumble mustard
Tragopogon dubius	Yellow salsify
Ulmus pumila	Siberian elm
Verbascum thapsus	Common mullein

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.

For this project, the factor rates as Low (2) at the present time. Very few known invasive or noxious weed infestations are present in the area. Those which have been identified, have been treated.

Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

This project rates as Moderate (4) at the present time. Being adjacent to Great Basin National Park, the area is heavily monitored for weeds. Should an infestation occur, it is highly likely that it would be quickly treated. The proposed action also requires any new infestations to be reported to the BLM Noxious Weed Coordinator for treatment.

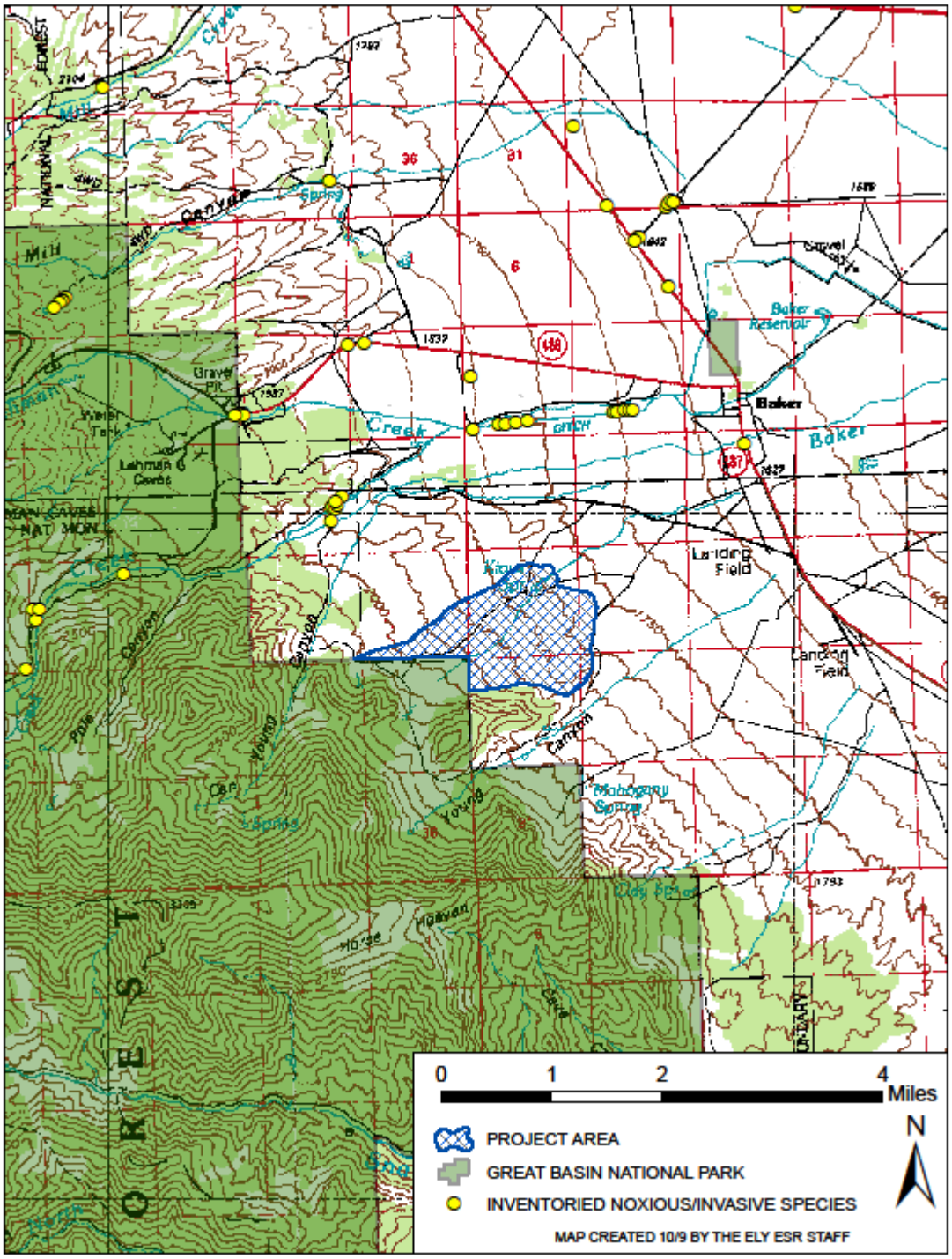
The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.

For this project, the Risk Rating is Low (8). This indicates that the project can proceed as planned as long as weed infestations are treated once discovered.

Reviewed by: _____ 10/9/12

Chris McVicars — Date

Ely District Noxious & Invasive Weeds Coordinator

KIOUS BASIN SAGEBRUSH STEPPE WRA