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

Preliminary Environmental Assessment

DOI-BLM-NV-L030-2013-0004-EA

July 21, 2014

Grazing Permit Renewal
for
Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment

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1.0 Introduction

This document identifies issues, analyzes alternatives, and discloses the potential environmental impacts associated with the proposed term grazing permit renewals for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment.

1.1 Background

The Snow Springs Allotment, a land based allotment having six grazing authorizations, is located in central Lincoln County, Nevada. It is approximately 40 miles southeast of Caliente, Nevada and approximately 15 miles north of Mesquite, Nevada (Map 1). The allotment spans parts of the Beaver Dam, Tule Desert, and Toquop Watersheds, and is approximately 44,376 acres in size. Cattle are the type of livestock grazed on the allotment. Elevations range from approximately 4,500 feet on the hill tops in the north to approximately 2,800 feet in the low lands in the southern end of the allotment.

Current management practices are a reflection of Best Management Practices (BMPs) as coordinated between the permittee and the appropriate Bureau of Land Management (BLM) Range Management Specialist.

Allotment General Location:

T.8.5 S., R.69 E., MDBM, many sections
T.8.5 S., R. 70 E., MDBM, many sections
T.8.5 S., R. 71 E., MDBM, many sections
T.9 S., R. 69 E., MDBM, many sections
T.9 S., R. 70 E., MDBM, many sections
T.9 S., R. 71 E., MDBM, many sections
T.10 S., R. 70 E., MDBM, many sections

1.2 Introduction of the Proposed Action.

The BLM, Caliente Field Office, proposes to renew the aforementioned term grazing permits on the Snow Springs Allotment.

Standards and Guidelines for Grazing Administration were developed by the Mojave-Southern Great Basin Resource Advisory Council (RAC) and approved by the Secretary of the Interior on February 12, 1997. Changes to grazing management are recommended which would establish Best Management Practices (BMPs) within the allotment. Such BMPs would assist in achieving/maintaining these Standards.

The BLM collected and analyzed monitoring data, and conducted professional field observations, as part of the permit renewal process. This information was used to evaluate

livestock grazing management and rangeland health within the Snow Springs Allotment. Subsequently, an evaluation of rangeland health along with recommendations associated with grazing management practices, in the form of a Standards Determination Document (SDD), was completed in 2013 (Appendix II). A summary of the RAC Standards assessment is found in Table 1.2, below.

Table 1.2 Summary of Assessment of the Mojave-Southern Great Basin Area Standards for the Snow Springs Allotment.

Standard	Status
1. Soils	Not Achieved
2. Ecosystem Components	Upland portion – Not Achieved Riparian Portion – Not Applicable
3. Habitat and Biota	Not Achieved

1.3 Need for the Proposed Action.

The need for the proposal is to authorize grazing use on public lands in a manner which satisfies the Federal Land Policy and Management Act (FLPMA) (1976) while being consistent with multiple use, sustained yield and the Nevada's Mojave-Southern Great Basin Area Standards for Rangeland Health; to manage livestock in accordance with all applicable laws, regulations, and policies; and, to renew the term grazing permits for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment (01074) while introducing BMPs – along with specific (mandatory) terms and conditions – directed toward achieving and/or maintaining the applicable Standards and Guidelines for Grazing Administration.

1.3.1 Objectives for the Proposed Action

- To renew the term grazing permits for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070; while authorizing grazing in accordance with applicable laws, regulations, and land use plans (LUPs) on approximately 44,042 acres of public land.

- To improve/maintain vegetative health and growth conditions on the allotment while either making progress toward or maintaining achievement of the Standards and Guidelines for rangeland health as approved and published by Mojave-Southern Great Basin RAC.

1.4 Relationship to Planning

The proposed action is in conformance with the Ely District Record of Decision and Approved Resource Management Plan (RMP) (August 2008), which states as a goal (p. 85): "Manage

livestock grazing on public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health." It further states as an objective (p. 86): "To allow livestock grazing to occur in a manner and at levels consistent with multiple use, sustained yield, and the standards for rangeland health."

Management Action LG-1 states, "Make approximately 11,246,900 acres and 545,267 animal unit months available for livestock grazing on a long-term basis."

Management Action LG-3 states, "Allow allotments or portions of allotments within desert tortoise habitat, but outside of Areas of Critical Environmental Concern (ACECs) to remain at current stocking levels unless a subsequent evaluation indicates a need to change the stocking level."

Management Action LG-5 states: "Maintain the current grazing preference, season-of-use, and kind of livestock until the allotments that have not been evaluated for meeting or making progress toward meeting the standards or are in conformance with the policies are evaluated. Depending on the results of the standards assessment, maintain or modify grazing preference, seasons-of-use, kind of livestock and grazing management practices to achieve the standards for rangeland health. Changes, such as improved livestock management, new range improvement projects, and changes in the amount and kinds of forage permanently available for livestock use, can lead to changes in preference, authorized season-of-use, or kind of livestock. Ensure changes continue to meet the RMP goals and objectives, including the standards for rangeland health."

Management Action LG-8 states, **"**Implement management actions for desert tortoise habitat contained in the 2008 Biological Opinion."

1.5 Relationship to Other Plans

The proposed action was analyzed within the scope of the *Revised Recovery Plan for the Mojave Population of the Desert Tortoise* (*Gopherus agassizii*) (2011) and found to be in compliance.

The proposed action is also consistent with the *Lincoln County Public Lands Policy Plan* (2010) which states (p. 38):

"Policy 4-4: Grazing should utilize sound adaptive management practices consistent with the BLM Mojave-Southern Great Basin Resource Advisory Council's Standards and Guidelines for Grazing Administration. Lincoln County supports the periodic updating of the Nevada Rangeland Monitoring Handbook to help establish proper levels of grazing. Lincoln County supports accountability between BLM and Lincoln County Commission to assure these management practices are carried out in a timely and professional manner.

Policy 4-5: Allotment management strategies should be developed that provide incentives to optimize stewardship by the permittee. Flexibility should be given to the permittee to reach condition standards for the range. Monitoring should utilize all science-based relevant studies, as described in the current Nevada Rangeland Monitoring Handbook. Changes to these standards

should involve pre-planning collaborative consultation with the permittee and Lincoln County Commission."

1.6 Relationship to Acts, Executive Orders, Agreements and Guidance

The proposed action was analyzed within the scope of other relevant Acts, Executive Orders and associated regulations, Agreements and Guidance listed below and found to be in compliance:

State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada State Historic Preservation Office for Implementing the National Historic Preservation Act (Revised January 2012)

- National Historic Preservation Act (1966) (Public Law 89-665; 16 U.S.C. 470 as amended through 2000)
- Archaeological Resources Protection Act (ARPA) (1979)
- Migratory Bird Treaty Act (1918 as amended)
- Executive Order 13186 (1/11/01): Responsibilities of Federal Agencies to Protect Migratory Birds (2001)
- Bald and Golden Eagle Protection Act (1940 as amended)
- Memorandum of Understanding between the BLM and the U.S. Fish and Wildlife Service To Promote the Conservation of Migratory Birds (2010)
- The National Environmental Policy Act (1969) (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994)
- The Federal Land Policy and Management Act (1976) (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996)
- Mojave-Southern Great Basin Resource Advisory Council (RAC) Standards and Guidelines (12 February 1997)
- Endangered Species Act (ESA) (1973)

1.7 Tiering

This document is tiered to the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (Ely PRMP/FEIS, Volumes I and II) (November 2007).

1.8 Relevant Issues and Internal Scoping/Public Scoping.

On April 5, 2013, a letter was sent to local Native American tribes requesting comments regarding the permit renewal process for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment. No comments were received.

On September 29, 2012 a BLM internal meeting was held in coordination between the Caliente Field Office and the Ely BLM District Office. The term permit renewal proposal for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 was presented and scoped by resource specialists to identify any relevant issues. Comments were provided by the staff wildlife biologist and archaeologist.

On May 9, 2013 a meeting was held with BLM staff and the Snow Springs Allotment Permitees. Issues were discussed including wildfire issues, water, and use. Two sites were visited and it was proposed to construct water catchments in order to provide reliable water sources in these areas. It was also proposed to conduct maintenance on the middle reservoir to repair damage from flooding. All the permittees expressed concern over implementing voluntary non-use, stating the 40% is too much.

On August 19, 2013 a preliminary Standards Determination Document was sent out for review to all of the interested parties.

On August 19, 2013, the SDD was sent to interested publics (using the Interested Publics Mailing List as described in section 6.2) to solicit input prior to the completion of the Preliminary EA. Comments to the SDD were received by the Nevada Department of Wildlife. The department was supportive of livestock management actions intended to improve overall ecosystem functions, although they were "unsure of the degree to which this tool can be effective in and of itself."

Comments were also received by Resource Concepts, Inc. They expressed that they were aware of the difficulty of establishing native perennial vegetation in the Mojave Desert following wildfires. They also noted the opportunity and value of test plots to evaluate selected desert adapted species (native and non-native); the installation of green strips as a viable option to restrict the movement of wildfire; and, that grazing is "the only practical tool currently in use to address unprecedented fuel loading before fire occurs in the Mojave Desert ecosystem." They further stated that "grazing is a sound and proven tool to reduce biomass, thereby lessening the potential for major wildfire." However, they also commented on the aspect of "voluntary nonuse" (temporary suspended use) and Allowable Use Levels, questioning as to whether it was actually necessary.
On September 6, 2013 a meeting was held with the permittees on the Snow Springs Allotment to identify and discuss needed range improvements. These improvements are now part of the proposed action and will be analyzed in this document.

On October 6, 2013 Hilton Covington submitted a letter expressing disagreement over the proposed use of voluntary non-use. He stated that he does not believe there should be any reduction in grazing and that permittees must be involved in the decision process. He stated that a 15-20% reduction would be acceptable, but 40% could hinder his and others operation.

This Preliminary Environmental Assessment (EA), and associated SDD, will be submitted for posting for a public review and comment period on the following website: https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do.

Postcards will be mailed to those interested publics (section 6.2), who have expressed an interest in range management actions associated with the Snow Springs Allotment, notifying them of the posting.

Hard copies will only be mailed to the permittees of record.

The BLM used the interested public mailing list as updated through the date of mailing. Changes in the EA and SDD will be made based upon pertinent public input.

Before including addresses, phone numbers, email addresses or other personal identifying information in comments, you should be aware that the entire comment – including personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

2.0 Alternatives Including the Proposed Action

2.1 Proposed Action

The BLM, Caliente Field Office, proposes to renew the term grazing permit for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment (#01074).

Table 1 in Appendix B of the SDD (Appendix II of this EA) displays annual livestock grazing use, for authorization numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment from March 1, 2003 through February 28, 2013 (10 years). The table illustrates the AUMs licensed each year by each permittee; total AUMs licensed each year on the allotment for all permittees; and, total AUMs licensed each year on allotment as a percent of the total Active Use of both permittees. The table also displays the individual Total Active Use for all permittees, and the Season of Use on the allotment.

As the table illustrates, the licensed annual use on the allotment for all permittees, during the ten year period, has frequently been below the combined Total Active AUMs. The total AUMs licensed each year on allotment as a percent of the total active use of all permittees, ranged from 8% in 2005 (Southern Nevada Complex Fires) to 48% in 2011 (above average precipitation) with a 10-year average of approximately 27%. It should be noted that this low percentage is the result of permittees voluntarily adjusting their cattle numbers based on climate and resource conditions.

As noted in table 1.2, the applicable Standards are not achieved due to invasive annual grasses and catastrophic fire.

There has been concern regarding the possibility of an unusually high moisture year and the resulting influx of annual grasses, to address this we have analyzed the allotment for use of "temporary nonrenewable forage" in the amount of 25% above the permitted AUMs (§ 4110.3-1 (a)), if resource conditions require reduction of fine fuels buildup. Annual use of any AUMs for temporary nonrenewable must be evaluated by the ID Team and approved by the Authorized Officer. There will be triggers initiating the use of temporary nonrenewable forage, which may include precipitation amounts and/or pounds/acre or forage (photo cards are currently being developed to evaluate forage production), with grazing authorizations being based on annual forage availability. Authorization of additional AUMs would be based on recommendations from an interdisciplinary team comprised of BLM and FWS staff, grazing operators, and university extension specialists.

The Proposed Action would also include the establishment of new permanent watering locations (Map #2) through the installation of water catchments, which include an apron, storage tank, and trough at each of the two locations. The structures would be placed on ground surface immediately adjacent to existing roads, in previously disturbed areas, with the only additional ground disturbance being that of the apron which covers less than 0.25 acres of area, and that of the 30,000-80,000 gallon storage tank which will require approximately 1000 square feet of disturbance. This would allow for the capture of water annually depending on precipitation and apron size. This would provide adequate water for cattle, increase distribution, and reduce the need for water hauls.

These catchments would allow the capture of rainwater in an effort to provide better cattle distribution, especially in the central portion of the allotment. This portion of the allotment does not regularly get significant cattle use and tends to generate higher amounts of fuel loading. Two fires were suppressed in the summer of 2013 in the central portion of Snow Springs. Water for wildlife will be incidental to these improvements.

Lower Jones reservoir is the first location proposed for a water catchment. This existing reservoir was built in 1958 and breached during the 2005 floods. It had not proven to be the most effective reservoir historically and does not hold water effectively due to soils issues. A storage tank would allow water to be effectively stored for use by cattle. This previously disturbed area is large enough to encompass the storage tank and trough, but some new disturbance may be needed for the apron..

An unnamed reservoir is located approximately 1.5 miles northeast of Lower Jones reservoir. This is a rock and concrete structure built over 50 years ago in a gully to capture water from runoff. It remains functional today, but has a limited storage capacity which is above ground and prone to evaporation. The installation of an apron would increase the amount of water captured, while a storage tank would allow water to be stored for a longer period and used when needed.

There is also a need to complete the construction of a water storage tank on the Garden Spring Allotment adjacent to the Snow Springs Allotment and fed by the Sam's Camp Pipeline (Map #3). The Sam's Camp Pipeline was reconstructed in 1990 (originally constructed 1971-1979) to provide water to Garden Spring, Lime Mountain, Summit Spring, and Snow Spring Allotments under the Environmental Assessment #NV-057-08-01. The project was completed except for the

construction of a storage tank located on the Garden Spring Allotment in a previously disturbed area. This would allow the storage of water which would increase the reliability and effectiveness of the project by storing water during the off season for use later in the year. This project under went consultation with the USFWS under the Biological Opinion File No. 1-5-97-F-305.

The proposed water features would be constructed under a Range Improvement Permit (Form 4120-7), with the benefitting permittee(s) being responsible for not only all materials, labor and subsequent maintenance, but also for compliance with Nevada state water laws regarding the proposed water catchments. No hazardous materials would be associated with the proposed actions regarding range improvements.

Permittees have also requested approval to rebuild a corral that was lost during the 2005 fires. This facility is needed to aid in livestock handling. The original corral was located in what is now designated critical habitat. A new location would be needed outside of the critical habitat. This improvement was not included in the initial consultation, but will be subject to Section 7 consultation. This facility would cover less than .25 acres and the objective would be to locate the corral in a previously disturbed area outside of critical habitat.

A representative from the BLM would make site visits, as deemed necessary, to monitor the project through completion. Upon completion of the project, a final inspection would be made to ensure compliance with specifications and to correct any existing deficiencies.

None of the permittees would be allowed to place salt closer than one-half mile from any water sources; and the installation of permanent wildlife escape ramps (supplied by the Bureau of Land Management) would be required in all watering troughs on the allotment.

Furthermore, under the discretion of the BLM, each permittee would be required to use multiple watering locations (existing and newly established) during any given grazing season. Also, under the discretion of the BLM, waterhauling locations would be used in a manner which would yield maximum livestock distribution within the allotment.

Several five-acre experimental plots would also be established, some fenced to exclude grazing and others unfenced, and seeded to determine if rehabilitation of the Mojave ecosystem can be accomplished post fire. This would include native and non-native species with potential to restore ecological function to the areas which have been burned, an appropriate seed mix would be chosen by an Inter-Disciplinary Team (IDT). The objectives of the experimental seedings would be to help restore thermal cover for desert tortoise, habitat enhancement for small wildlife and nutrient cycling for the desert soils. These seedings would provide valuable information which could be used in other areas of the Mojave Desert that have burned and help move the ecosystem in the direction of meeting/achieving the BLM's Resource Advisory Council (RAC) standards.
The use of herbicide at strategic locations throughout the allotment would also be implemented to help in the management of future fires in the Mojave Desert. Fuel break projects are being analyzed in the Tule-Toquop Watershed Assessment (2014).

The Proposed Action would also add other terms and conditions (BMPs) to the permit that would aid in maintaining the Mojave-Southern Great Basin Standards. No other changes to any of the permits would be made.

2.1.1 Current Permits

Table 2.1.1, below, displays the mandatory terms and conditions for the current term grazing permits for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment. These current term grazing permits have been issued for the period 8/9/2002 – 2/28/2013 and authorized cattle grazing according to the following:

Table 2.1.1 Current Term Grazing Permits

ALLOTMENT		Authorization Num.	LIVESTOCK		GRAZING PERIOD		** % Public Land	AUMs		
Name	Number		* Number	Kind	Begin	End		Active Use	Hist. Susp. Use	Permitted Use
Snow Springs	01074	#2703255	54	C	10/1	5/15	100	405	0	405
		#2703383	45	C	10/1	5/15	100	338	0	338
		#2705038	166	C	10/1	5/15	100	1238	0	1238
		#2705071	46	C	10/1	5/15	100	338	0	338
		#2705118	130	C	10/1	5/15	100	970	0	970
		#2705070	38	C	10/1	5/15	100	278	0	278

* These numbers are approximate
** This is for billing purposes only.

2.1.2 Proposed Term Permits

The new term permits would contain the same mandatory terms and conditions as the current term permit.

The renewal of the term grazing permits would be for a period of up to 10 years. If the grazing privileges, associated with any of the permits, are transferred during this 10-year period – with no changes to the terms and conditions of the permit in question – the new term permit would be issued for the remainder of the 10-year period.

The new term permits would also include standard terms and conditions which further assist in maintaining the Standards and Guidelines for Grazing Administration in addition to other pertinent land use objectives for livestock use (Appendix III).

The following Terms and Conditions (BMPs) would also be added to the Term Grazing Permits to assist in maintaining the Standards:

1. Allowable Use Levels on current year's growth of vegetation (perennial grasses, forbs and shrubs) within the Snow Springs Allotment - during the authorized grazing use period - will not exceed 40%.

2. Under the discretion of the BLM, waterhauling locations will be used in a manner which will yield maximum livestock distribution within the allotment. Herding will be used, as needed, to achieve this objective.

3. Waterhauling will be limited to existing roads. No roads will be bladed or improved in any way, with mechanical equipment, without the expressed consent of the authorized officer.

In addition, the new term permits would also include standard terms and conditions which would assist in maintaining the Standards and Guidelines for Grazing Administration in addition to other pertinent land use objectives for livestock use (Appendix III).

Finally, the following terms and conditions, from the *Programmatic Biological Opinion for the Bureau of Land Management's Ely District Resource Management Plan* (File No. 84320-2008-F-0078) (pp. 132-133), would be included in the term grazing permits to minimize incidental take of desert tortoises that may result from the implementation of programs in general:

4. Prior to initiation of an activity within desert tortoise habitat, a desert tortoise awareness program shall be presented to all personnel who will be onsite, including but not limited to contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain information concerning the biology and distribution of the desert tortoise and other sensitive species, their legal status and occurrence in the project area; the definition of "take" and associated penalties; speed limits; the terms and conditions of this biological opinion including speed limits; the means by which employees can help facilitate this process; responsibilities of workers, monitors, biologists, etc.; and reporting procedures to be implemented in case of desert tortoise encounters or noncompliance with this biological opinion.

5. Tortoises discovered to be in imminent danger during projects or activities covered under this biological opinion, may be moved out of harm's way.

6. Desert tortoises shall be treated in a manner to ensure they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. No desert tortoise will be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95ºF. Ambient air temperature will be measured in the shade, protected from wind, at a height of two inches

above the ground surface. No desert tortoise will be captured if the ambient air temperature is anticipated to exceed 95ºF before handling and relocation can be completed. If the ambient air temperature exceeds 95ºF during handling or processing, desert tortoises will be kept shaded in an environment that does not exceed 95ºF and the animals will not be released until ambient air temperature declines to below 95ºF.

7. Desert tortoises shall be handled by qualified individuals. For most projects, an authorized desert tortoise biologist will be onsite during project activities within desert tortoise habitat. Biologists, monitors, or anyone responsible for conducting monitoring or desert tortoise field activities associated with the project will complete the Qualifications Form (Appendix D) and submit it to the Service for review and approval as appropriate. The Service should be allowed 30 days for review and response.

8. A litter-control program shall be implemented to minimize predation on tortoises by ravens drawn to the project site. This program will include the use of covered, raven-proof trash receptacles, removal of trash from project areas to the trash receptacles following the close of each work day, and the proper disposal of trash in a designated solid waste disposal facility. Appropriate precautions must be taken to prevent litter from blowing out along the road when trash is removed from the site. The litter-control program will apply to all actions. A litter-control program will be implemented by the responsible federal agency or their contractor, to minimize predation on tortoises by ravens and other predators drawn to the project site.

The following terms and conditions, also from the *Programmatic Biological Opinion* (pp. 138-140), would be included in the term grazing permits to minimize incidental take of desert tortoises that may result from permitting livestock grazing:

9. Livestock use may occur from March 1 to October 31, as long as forage utilization management levels are monitored and do not exceed 40 percent on key perennial grasses, shrubs and perennial forbs; and between November 1 and February 28/29, provided forage utilization management levels are monitored and do not exceed 50 percent on key perennial grasses and 45 percent on key shrubs and perennial forbs. If the utilization management levels are reached, livestock will be moved to another location within the allotment or taken entirely off the allotment. No livestock grazing will occur in desert tortoise critical habitat March 1 through October 31.

10. Livestock grazing in desert tortoise habitat shall be managed in accordance with the most current version of the Desert Tortoise Recovery Plan, including allotments or portions of allotments that become vacant and occur within desert tortoise critical habitat outside of ACECs. Grazing may continue in currently active allotments until such time they become vacant. BLM will work with the permittees of active allotments to implement changes in grazing management to improve desert tortoise habitat which may include use of water, salt and mineral licks, or herding to move livestock; changes in season of use and/or stocking rates; installation of exclusionary fences; reconfiguring pasture or allotment boundaries; and retiring pastures or allotments.

11. BLM and Service will cooperatively develop livestock grazing utilization levels or other thresholds, as appropriate for each of the listed species. These levels or thresholds shall be incorporated into each of the allotment term permit for those allotments that overlap with habitat for the listed species.

12. The permittee shall be required to take immediate action to remove any livestock that move into areas unavailable for grazing. If straying of livestock becomes problematic, BLM, in consultation with the Service, will take measures to ensure straying is prevented.

13. All vehicle use in listed species habitat associated with livestock grazing, with the exception of range improvements, shall be restricted to existing roads and trails. Permittees and associated workers will comply with posted speed limits on access roads. No new access roads will be created.

14. Use of hay or grains as a feeding supplement shall be prohibited within grazing allotments. Where mineral and salt blocks are deemed necessary for livestock grazing management they will be placed in previously disturbed areas at least one half mile from riparian areas wherever possible to minimize impacts to flycatchers and listed fishes and their habitat. In some cases, blocks may be placed in areas that have a net benefit to tortoise by distributing livestock more evenly throughout the allotment, and minimizing concentrations of livestock that result in habitat damage. Waterhaul sites will also be placed at least one half mile from riparian areas.

15. Site visits shall be made to active allotments by BLM rangeland specialists and other qualified personnel, including Service biologists, to ensure compliance with the terms and conditions of the grazing permit. Any item in non-compliance will be rectified by BLM and permittee, and reported to the Service.

16. Livestock levels shall be adjusted to reflect significant, unusual conditions that result in a dramatic change in range conditions (e.g., drought and fire) and negatively impact the ability of the allotment to support both listed species and cattle.

In relation to grazing, there would be no additional terms and conditions needed for management practices to conform to guidelines to either make progress toward or to maintain achievement of the Standards for Rangeland Health.

2.1.3 Invasive, Non-Native Species and Noxious Weeds

A Weed Risk Assessment was completed for this project (Appendix IV). According to recent weed surveys, salt cedar *(Tamarix spp.)* are known to be found in mesic soils within the Snow Springs Allotment. Red brome (*Bromus rubens*), redstem storks bill *(Erodium circutarium)* and Russian thistle (*Salsola kali*) are also within the allotment. Red brome is of special interest due to its impacts on the fire regime. Also of great importance is the spread of Sahara mustard.

The measures listed in the Weed Risk Assessment will be followed, when grazing occurs on the allotment, to minimize the potential spread of weeds.

2.1.4 Monitoring

The Ely District Approved Resource Management Plan (August 2008) identifies monitoring to include (p. 88): "Monitoring to assess rangeland health standards will include records of actual livestock use, measurements of forage utilization, ecological site inventory data, cover data, soil mapping, and allotment evaluations or rangeland health assessments. Conditions and trends of resources affected by livestock grazing will be monitored to support periodic analysis/evaluation, site-specific adjustments of livestock management actions, and term permit renewals."

Under guidance of the Endangered Species Act and through Section 7 consultation with the U.S. Fish and Wildlife Service, a species-specific monitoring plan will be developed to monitor desert tortoise habitat.

2.2 Description of Alternatives Analyzed in Detail

2.2.1 No Action Alternative

The No Action Alternative, for livestock grazing, permit renewals is defined as "continuing to graze under current terms and conditions" in IM-2000-022, Change 1 (re-authorized by IM-2010-063)

Therefore, the No Action Alternative would reflect the status quo. The term permits would be issued without changes to grazing management, or modifications to the existing terms and conditions of the permit.

The renewal of the term grazing permits would be for a period of up to 10 years. If the grazing privileges, associated with any of the permits, are transferred during this 10-year period – with no changes to the terms and conditions of the permit in question – the new term permit would be issued for the remainder of the 10-year period.

2.2.2 No Grazing Alternative

Under this alternative a new term grazing permit would not be issued, once the current term permit expired, resulting in no authorized livestock grazing on the allotment.

This alternative was also considered and analyzed in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November, 2007) which is addressed below.

2.3 Alternatives Considered but Eliminated from Further Analysis

The Ely PRMP/FEIS (Volume II) analyzed the Environmental Impacts of livestock grazing under the Proposed RMP section, along with four alternatives (p.4.16-1 to 4.16-15.), which included a no-grazing alternative (Alternative D). It also analyzed environmental impacts on vegetative resources from livestock grazing under the Proposed RMP section, and the four alternatives (4.5-1 to 4.5-28), which included the no-grazing alternative. No further analysis is necessary in this document for Alternatives A, B and C. However, the no-grazing alternative is additionally analyzed in this EA. The following is a list of the four Alternatives contained within the PRMP/FEIS (Volume II):

- Alternative A, The Continuation of Current Existing (No Action alternative)
- Alternative B, the maintenance and restoration of healthy ecological systems
- Alternative C, commodity production
- Alternative D, conservation alternative (no-grazing alternative)

3.0 Description of the Affected Environment and Associated Environmental Consequences

3.1 Allotment Information

The Snow Springs Allotment, a land based allotment having five (5) permittees with six (6) grazing authorizations, is located in central Lincoln County, Nevada. It is approximately 40 miles southeast of Caliente, Nevada and approximately 15 miles northwest of Mesquite, Nevada (Map #1). The allotment spans parts of the Beaver Dam, Tule Desert, and Toquop Watersheds, and is approximately 44,376 acres in size. Cattle are the type of livestock grazed on the allotment. Elevations range from approximately 4,500 feet on the hill tops in the north to approximately 2,800 feet in the low lands in the southern end of the allotment.

Neither the allotment nor any of its portions are located within a Wild Horse Herd Management Area (HMA).

There no Wilderness areas located within the allotment (Map #4).

The entire allotment contains habitat for the federally threatened Agassiz's desert tortoise (*Gopherus agassizii*), with 6,358 acres designated as desert tortoise critical habitat on the southern end of the allotment. The allotment also contains mule deer (*Odocoileus hemionus*) habitat and occupied desert bighorn sheep (*Ovis canadensis nelsoni*) habitat.

There are known developed springs that service livestock watering locations on the allotment (Map #4). Water hauling is another means by which water is supplied in the rest of the allotment which is not serviceable by spring flow.

3.2 Resources/Concerns Considered for Analysis - Proposed Action

The following items have been evaluated for the potential for significant impacts to occur, either directly, indirectly, or cumulatively, due to implementation of the proposed action.

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 BLM in particular.

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Air Quality	No	Air quality in Lincoln County is classified by the State of Nevada as being "unclassifiable" since no monitoring has been conducted to determine the classification and National Ambient Air Quality Standards; violations would not otherwise be expected in the county. The proposed action would not have a measurable affect the air quality of Lincoln County. Any dust created would be expected to be ephemeral.
Cultural Resources	No	Impacts from livestock grazing on Cultural Resources are analyzed on page 4.9-5 of the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). A cultural review in accordance with the State Protocol Agreement was completed where all documented sites in the allotment were looked at to see where there were potential effects to historic properties (cultural resources eligible for listing in the National Register of Historic Properties). The report of this effort is on file in the Caliente Field Office and available upon request. There were four historic properties noted that have a high potential for impacts from current grazing practices. However, proposed mitigation measures would reduce the potential impacts to a to low- moderate level. A cultural resources inventory for the ground disturbing actions being analyzed in this document will be completed prior to issuing the Final EA and decision. Every effort will be made to avoid impacts to cultural resources through project redesign in accordance with the BLM 8100 Manual Series.
Paleontological Resources	No	There are no known paleontological deposits of concern in this allotment
Native American Religious Concerns and other concerns	No	Letters notifying Native American Tribes of proposed term grazing permit renewals scheduled for 2013 were sent out on April 5, 2013 for a 30 day comment period. The Snow Springs Allotment was included in the notification. No concerns were identified. Direct impacts and cumulative impacts would not occur, because there were no identified concerns through coordination.
Noxious and Invasive Weed Management	No	Livestock grazing has the potential to spread noxious and invasive weeds. A Weed Risk Assessment was completed for this project (Appendix V). The design features of the proposed action, in addition to the vigilant practices described in the Noxious Weed Risk Assessment, will help prevent livestock grazing from spreading noxious and non-native, invasive weeds. No additional analysis is needed.
Vegetative Resources	Yes	Impacts from livestock grazing on Vegetation Resources were analyzed on page 4.5-9 in the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). Beneficial impacts to vegetative resources

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
		are consistent with the need and objectives for the proposed action. This resource has been further analyzed in the EA.
Rangeland Standards and Health	Yes	Impacts from livestock grazing on Rangeland Standards and Health are analyzed on pages 4.16-3 through 4.16-4 of the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). Beneficial impacts to rangeland standards and health are consistent with the need and objectives for the proposed action. Analysis of the proposed action and alternatives is provided in the affected environment and environmental impacts sections of this EA.
Grazing Uses	Yes	Wildlife species that likely occur in or near the project area are listed in Appendix VII. Livestock grazing is analyzed in this EA.
Forest Health[1]	No	No forest or woodlands sites are found within the allotment.
Wastes, Hazardous or Solid	No	No hazardous or solid wastes exist on the permit renewal area, nor would any be introduced by the proposed action or alternatives.
Wilderness	Yes	Wilderness and WSAs are not present in this allotment. A lands with wilderness characteristics review has been completed. Analysis provided in Appendix ?
Lands with Wilderness Characteristics	No	Four units inventoried in 1979 for LWC overlap this allotment. Three of the units were designated as WSAs. These were released from wilderness consideration in the 2004 Lincoln County Conservation Recreation & Development Act. No inventory update has occurred for this allotment. The Proposed Action and the No Action Alternative would not preclude preservation of Lands with Wilderness Characteristics should LWC be identified in the future. There are no anticipated impacts to Size, Solitude or Primitive forms of Recreation from the proposed action or no action alternatives.
Wetlands/Riparian Zones	No	No riparian areas occur on public land in the analysis area.
Water Quality, Drinking/Ground	No	The Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) disclosed effects to Water Resources from livestock grazing on page 4.3-5. The proposed action would not affect water quality (surface or groundwater sources) or drinking water in the project area. No surface water in the project area is used as human drinking water sources and no impaired water bodies of the State on Nevada are present in the project area.
Water Resources (Water Rights)	No	The Proposed Action would not affect existing or pending water rights vicinal to the project analysis area.

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Floodplains	No	The project analysis area is not included on FEMA flood maps. The resource does not exist in the proposed project area on BLM managed lands.
Migratory Birds	No	The migratory bird species that occur in or near the project area are listed in Appendix VII. There is always a possibility that the nests, and/or developing young, of ground nesting birds during the spring nesting period could be trampled by cattle. However, the potential for nest trampling is anticipated to be remote and upon occurrence, would be limited to an occasional individual or nest. If nests were lost due to trampling, birds could re-nest. Grazing would also reduce the height of existing vegetative structure and cover to some degree. However, with the establishment Allowable Use Levels it is anticipated that vegetative structure and cover would be negligibly affected. In view of the aforementioned, it is anticipated that negative impacts to migratory bird populations, as a whole, would be negligible.
U.S. Fish and Wildlife Service (USFWS) Listed or proposed for listing Threatened or Endangered Species or critical habitat.*	Yes	Impacts from livestock grazing on Special Status Species, including Threatened and Endangered Species were analyzed on pages 4.7-28 through 4.7-33in the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). Wildlife species (plant and animal) that occur in or near the project area are listed in Appendix V. The Snow Springs Allotment contains habitat for the federally threatened Agassiz's desert tortoise (*Gopherus agassizii*) (Appendix I, Map #5). Formal section 7 consultation for this species is being pursued. No ACECs occur within the Snow Springs allotment. The aforementioned species are analyzed in detail in this EA.
Special Status Plant Species, other than those listed or proposed by the USFWS as Threatened or Endangered	No	Impacts from livestock grazing on Special Status Species, including Threatened and Endangered Species were analyzed on pages 4.7-28 through 4.7-33in the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). No BLM sensitive plant species are known to occur on the Snow Springs Allotment.

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Special Status Animal Species, other than those listed or proposed by the UFWS as Threatened or Endangered	Yes	Impacts from livestock grazing on Special Status Species, including Threatened and Endangered Species were analyzed on pages 4.7-28 through 4.7-33in the Ely Proposed Resource Management Plan/Environmental Impact Statement (November 2007). No preliminary priority habitat or preliminary general habitat for greater sage-grouse occurs within the Snow Springs allotment. Wildlife species that occur in or near the project area are listed in Appendix V. The allotment potentially contains the following BLM sensitive species: Western burrowing owl (*Athene cunicularia*), Brewer's sparrow (*Spizella breweri*), loggerhead shrike (*Lanius ludovicianus*), desert bighorn sheep (*Ovis canadensis nelsoni*), and several bat species. The aforementioned species are analyzed in detail in this EA.
Fish and Wildlife	No	There are no known riparian areas located within the allotment on BLM managed lands. No fish occur within the allotment. Wildlife species – including sensitive species – that occur in or near the project area are listed in Appendix V. Impacts from livestock grazing on Fish and Wildlife are analyzed on pages 4.6-10 through 4.6-11 in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007). Grazing would reduce the amount of available forage (grass and forbs); however, compliance with Ely Resource Management Plan standards for utilization percentages ensures that forage is present in the allotment after cattle are removed. The allotment contains general habitat for mule deer (*Odocoileus hemionus*), small mammals, and reptiles. No population-level impacts are anticipated to these species. Therefore, it is anticipated that the proposed action would have no measurable effect on this resource.
Wild Horses	No	Neither the allotment nor any of its portions are located within a Wild Horse Herd Management Area (HMA).

Resource/Concern Considered	Issue(s) Analyzed	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
Soil Resources	No	The Ely Proposed resource Management Plan/Final Environmental Impact Statement (November 2007) disclosed effects to Soil Resources resulting from livestock grazing actions on page 4.4-4. Soils in the project analysis area are not prone to compaction or erosion problems; infiltration rates and soil permeability are high and soil textures are coarse throughout the area It is expected that the proposed action would not measurably affect soil resources.
Mineral Resources	No	There would be no modifications to mineral resources through the proposed action or alternatives; therefore, no direct or cumulative impacts would occur to minerals.
VRM	No	The proposed action is consistent with the VRM classification objectives for VRM classes 1 and 2 within the allotment; therefore, no direct or cumulative impacts to visual resources would occur. Approximately 95 % of the allotment is classified as Class 1 with the remaining portion classified as Class 2. Livestock graze within both classes.
Recreation Uses	No	Design features identified in the proposed action would result in negligible impacts to recreational activities
Land Uses	No	There would be no modifications to land use authorizations through the proposed action, therefore no impacts would occur. No direct or cumulative impacts would occur to access and land use.
Environmental Justice	No	No environmental justice issues are present at or near the project area. No minority or low income populations would be unduly affected by the proposed action or alternatives.
Areas of Critical Environmental Concern (ACEC)	No	No ACECs occur within the Snow Springs allotment.
Farmlands (Prime or Unique)	No	No prime farmland exists within the allotment.

Healthy Forests Restoration Act projects only

* Consultation required, unless a "not present" or "no effect" finding is made.

An analysis of grazing impacts on the following resources – noted in the above table as being negligibly affected – may be found in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) on the noted pages: Cultural Resources (page 4.9-5); Water Quality, Drinking/Ground (page 4.3-5); Fish and Wildlife (pages 4.6-10 through 4.6-11); and Soil Resources (page 4.4-4). Consequently, these resources do not require a further detailed analysis.

3.3 Resources/Concerns Analyzed

The following resources were assigned a "Yes" under the "Issue(s) Analyzed" column in the above table and have been identified by the BLM interdisciplinary team as resources within the affected environment that merit a detailed analysis: vegetative resources; rangeland standards and health; grazing uses; USFWS listed or proposed for listing Threatened or Endangered Species or critical habitat**;** and Special Status Animal Species other than those listed or proposed by the USFWS as Threatened or Endangered; Invasive Non-native Species. An analysis of grazing impacts on these resources may also be found in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007), on the following noted pages: Vegetative Resources (page 4.5-9); Rangeland Standards and Health (pages 4.16-3 through 4.16-4); Special Status Species, including Threatened and Endangered Species (pages 4.7-28 through 4.7-33).

3.3.1 Vegetative Resources; Rangeland Standards and Health; Grazing Uses

3.3.1.1 Affected Environment

Sections 1.1, 2.1, and 3.1 describe and/or reference basic information about the Snow Springs Allotment.

As described under section 1.2, an evaluation of livestock grazing management and rangeland health within the allotment (achievement of the standards and conformance to the guidelines) in the form of a Standards Determination Document was completed in conjunction with the permit renewal process (Appendix II).

The assessment indicated that Standards 1, 2 and 3, are not being achieved due to impacts from invasive annual grass. The riparian portion of Standard 2 is not applicable.

3.3.1.2 Environmental Consequences

<u>Proposed Action</u>

The introduction of new water haul locations and new water catchments within the allotment, in combination with existing waterhauls in the area, would provide an additional means of controlling livestock.

The completion of the storage tank on the Sam's Camp Pipeline would aid in controlling livestock by increasing the storage capacity of the system for the Snow Springs and adjacent allotments which are also serviced by this pipeline. This would effectively help livestock distribution in the area as a whole.

The construction of a corral would aid in controlling and managing livestock. This would reduce the amount of trailing needed when livestock are removed. Because there are six operators on this allotment, a corral would also aid in sorting and identifying livestock.

Additionally, under the discretion of the BLM the strategic use of multiple watering locations during the grazing season, by each permittee, should maintain livestock distribution to achieve a uniform utilization level within the allotment. When coupled with the introduction of allowable use levels, it would aid in preventing overall negative impacts to the soil and plant resources while also allowing grazing to address increased fuel loading from invasive annual plants.

As a result, it would promote the potential for native plants: to develop above ground biomass to protect soils and provide desirable perennial cover for wildlife; to contribute to litter cover; and to continue to develop root masses which would lend itself to improved carbohydrate storage for vigor and reproduction.

Consequently, the following would be promoted: the potential benefits to plant physiology, added soil protection and wildlife cover; the plant quality and volume of existing forage species; and the reduction in the potential for loss of desired plant species. As a result, this would influence the desired forage base in a positive manner.

In summary, creating a more uniform utilization level within allotments should result in the reduction of fine fuels, reduction of fire severity and intensity, promotion of overall forage production, ground cover, plant vigor and overall range condition. In addition, the potential for unacceptable utilization levels would be reduced while providing benefits to wildlife, regarding not only forage and cover, but additional water availability during the livestock grazing season.

A concentrated influence on vegetation, vicinal to water troughs, is expected due to typical ungulate behavior associated with point water sources. Typically, there is an area immediately surrounding the troughs where soil and vegetation is the most affected as a result of cattle trampling and grazing while drinking. Varying degrees of grazing use/trampling subsequently occurs, in a radial pattern, with such affects decreasing as distance from the watering source increases. However, with the establishment of eight new waterhauls, logic dictates that the overall degree of such impacts should further decline, because of additional water sources servicing the same number of previously grazed livestock.

Standards 1, 3, and the upland portion of Standard 2 should progress towards achievement as long as the historic fire regime is maintained. The addition of watering locations and the increased dispersal of grazing will help to achieve this goal.

The Proposed Action would also add other terms and conditions (BMPs) to the permit that would further aid in maintaining the Mojave-Southern Great Basin Standards.

<u>No Action Alternative</u>

All of the mandatory terms and conditions of the current permits, as displayed under section 2.1.1, would remain unchanged.

Under the no action alternative, the standard terms and conditions referenced under 2.1.2 under the Proposed Action and in Appendix III of this EA - which further assist in maintaining the Standards and Guidelines for Grazing Administration in addition to other pertinent land use objectives for livestock use - would not be included in the new permits.

The BMPs listed under 2.1.2, intended to assist in maintaining the Standards, would not be included in the new permits. Consequently, the setting of allowable use limits; the rotation of watering locations directed at allowing periodic rest for areas serviced by each watering location; the strategic use of watering locations, and requirement of herding as needed, directed at yielding maximum livestock distribution; and the restriction of waterhauling to existing roads would not become integrated into the permits.

Consequently, the benefits to plant physiology and added soil protection, and wildlife cover – as described under 2.1 of the Proposed Action – would be dramatically reduced; and, the plant quality and volume of existing forage species could decrease, thereby, impacting the desired forage base in a negative manner. This would have overall negative impacts on vegetative resources and the health of the land.

In addition, all other terms and conditions referenced under 2.1.2 – intended to minimize incidental take of the desert tortoise – would not be included in the new permits. This could have negative impacts on a currently listed species.

The needed range improvements analyzed in this document would not be completed and the benefits to the resources would not be realized.

No Grazing Alternative

The no grazing alternative, as discussed in 3.3.1.2, would remove any pressure from invasive annual grasses and allow fuel loading to increase. Increased fire frequency and severity is a threat to desert tortoise habitat in this area. Recovery of thermal cover in tortoise habitat in burned areas is dependent on maintaining historic fire intervals. Frequent fire intervals of 2-5 years will prevent the recovery of perennial species used as forage and thermal cover by tortoise.

Outside of concerns regarding fire regime, for a short period of time following implementation, no grazing may accomplish the same desired result as allowing periodic rest during the spring critical growing period for plants by allowing perennial forage plants rest during the vital phonological stages of their annual growing cycle. However, studies indicate that this benefit would begin to decrease as plants accumulate previous years' herbage. Thus, the benefit may become relatively short-lived without outside influences, and may lead to wolfy plants. Among bunchgrasses, wolfy plants are clumps that have accumulations of both current and previous years' herbage (Ganskopp and Bohnert 2004).

In fact, it is realized in the scientific community that, over time and without outside influences such as fire, grasses may become wolfy from lack of grazing use. Ganskopp et al. (1992, 1993) cites where research at the Eastern Oregon Agricultural Research Center demonstrated that cattle

are aware of even one cured stem in clumps of green grass, and that they are about 40 percent less likely to forage on a wolfy plant than on one that does not have cured stems. They also state that many have reported preferential use by both wild and domestic animals of individual plants or patches of grass where old growth material has been removed by grazing or fire.

If this occurs, substantial forage can become wasted, because current year's growth is intermixed with older, cured materials that are nutritionally deficient and present a physical barrier to cattle grazing (Ganskopp and Bohnert 2004). Such plants would also lose vigor and become less palatable, thereby contributing to less productive rangelands for either wildlife or domestic livestock that depend on such a forage base.

Anderson (1993) elaborated on the consequences of choosing a No Grazing option. He states: "After a period of time, ungrazed herbaceous fibrous-rooted plant species become decadent or stagnant. Annual above-ground growth is markedly reduced in volume and height. Root systems likely respond the same. The result is reduction in essential features of vegetational cover, including the replacement of soil organic matter and surface residues, and optimum capture of precipitation." He also lists two other consequences: "(1) loss of quality herbaceous forage for wild herbivores, causing them to move to areas where regrowth following livestock grazing provides succulent forage (Anderson 1989), and (2) increased hazard from wildfires that can be devastating from a rangeland watershed standpoint."

Courtois et al. (2004) found that 65 years of protection from grazing on 16 exclosures, at different locations across Nevada, resulted in relatively few differences between vegetation inside the exclosures and that exposed to moderate grazing outside the exclosures. Where differences occurred, total vegetation cover was greater inside the exclosures while density was greater outside the exclosures. Protection from grazing failed to prevent expansion of cheatgrass into the exclosures (Ely PRMP/FEIS pg. 4.5–27).

3.3.2 USFWS Listed or proposed for listing Threatened or Endangered Species or critical habitat

3.3.2.1 Affected Environment

The Snow Springs Allotment is located within habitat for the federally threatened Agassiz's desert tortoise (*Gopherus agassizii*). The allotment also contains 6,538 acres of desert tortoise critical habitat in the Beaver Dam Slope Critical Habitat Unit primarily located on the southernmost portion of the allotment.

The allotment is located within the desert tortoise Northeast Mojave Recovery Unit (NE RU). Line Distance Sampling (LDS) desert tortoise density estimates in the last ten years for the NE RU range from 0.84 to 3.4 tortoises/km^2 (Table 3.3.2.1.a.).

Table 3.3.2.1.a. Desert Tortoise Density Estimates for NE RU

Area	Year	Density (km^2)	Std Error

NE RU	2002	0.84	0.476
NE RU	2003	3.01	0.465
NE RU	2004	1.42	0.342
NE RU	2005	2.15	0.400
NE RU	2007	1.7	25.0 = CV
NE RU	2008	0.9	28.3 = CV
NE RU	2009	3.4	34.0 = CV
NE RU	2010	3.2	15.8 = CV
NE RU	2011	3.4	21.3 = CV
NE RU	2012	3.4	20.1 = CV

CV=Coefficient of Variance

Additional data were analyzed for the Beaver Dam Slope Critical Habitat Unit (CHU). LDS desert tortoise density estimates for 2007 to 2012 for the Beaver Dam Slope CHU range from 1.1 to 5.4 tortoises/km^2 (Table 3.3.2.1.b.). Data were compiled from Annual Reports on Range-wide Monitoring of the Mojave Population of the Desert Tortoise (USFWS 2009-2012). The BLM Ely District funded additional transects just north of outside the Beaver Dam Slope CHU in 2008 and 2009. However, no tortoises were observed.

Table 3.3.2.1.b. Desert Tortoise Density Estimates for Beaver Dam Slope CHU

Area	**Year**	**Density (km^2)**	**Coefficient of Variance**
BDS CHU	2007	1.2	53.2
BDS CHU*	2008	1.1	52.4
BDS CHU*	2009	3.2	49.2
BDS CHU	2010	3.3	28.2
BDS CHU	2011	3.3	37.24
BDS CHU	2012	5.4	29.93

* Additional transects funded by BLM in areas outside and north of BDS CHU in 2008 & 2009. However, no tortoises were observed.

BLM desert tortoise triangular transects (surveyed in 1980s to 1990) estimated tortoise densities from very low to low in this allotment.

The proposed water catchments would be located within desert tortoise habitat.

3.3.2.2 Environmental Consequences

Proposed Action

The Revised Recovery Plan for the Mojave Population of the Desert Tortoise (2011), states under Recovery Action 2.16 (minimize impacts to tortoises from livestock grazing): “Grazing by livestock (cattle and sheep) affects desert tortoises through crushing animals or their burrows, destroying or altering vegetation (which may introduce weeds and change the fire regime),

altering soil, and competition for food (Boarman 2002). There is currently no evidence that cattle grazing will restore habitat or prevent fire in Mojave Desert environments."

The Revised Recovery Plan goes on to recommend: "The [U.S. Fish and Wildlife] Service should work to assist grazing managers to develop experimental application of more flexible grazing practices, such as allowing or reducing grazing during specific times of the year (*e.g.*, after ephemeral forage is gone or winter only) or under certain environmental conditions (*e.g.*, following a specified minimum amount of winter rain), in order to investigate the compatibility of grazing with desert tortoise populations." The Revised Recovery Plan identifies outside of desert tortoise conservation areas as the most appropriate areas to collect data on these sorts of experimental applications.

Some management actions recommended in the Revised Recovery Plan are incorporated into the proposed action for the Snow Springs allotment, such as: removing trespass cattle, monitoring, and prohibiting supplemental feeding.

The introduction of two new watering locations in the allotment has the potential to relieve grazing pressure within portions of desert tortoise habitat by displacing livestock to the areas serviced by the waters. Additionally, the strategic use of multiple watering locations during the grazing season by the permittees should improve livestock distribution to achieve a more uniform utilization level within the allotment. This would potentially further decrease overall impacts to the soil and plant resources, including desert tortoise habitat. In addition, the potential for unacceptable utilization levels would be reduced due to the better distribution of livestock. This would provide benefits to wildlife with more forage and cover.

While all activities associated with the new watering locations would occur within the previously disturbed areas and no new soil disturbance would occur with regards to troughs and impacts immediately adjacent to troughs. However, the aprons used to capture rain water may require some new disturbance of less than .25 acres. Impacts to desert tortoise habitat would be minimal. Vehicles would not have to travel off-road to deliver water, which would minimize impacts as well.

The terms and conditions listed in the Proposed Action would minimize impacts to desert tortoise and its associated habitat. For example, a 40% utilization limit on vegetation would benefit vegetative thermal cover and forage species for tortoise.

In Boarman's *Threats to Desert Tortoise Populations: A Critical Review of the Literature* (2002), he summarizes livestock grazing as a threat to desert tortoise in the following way: "Surprisingly little information is available on the effects of grazing on the Mojave Desert ecosystem (Oldemeyer 1994, Rundel and Gibson 1996, Lovich and Bainbridge 1999). Differences in rainfall patterns, nutrient cycling, and foraging behavior of herbivores and how these three factors interact make applications of research from other areas of limited value in understanding the range ecology of the Mojave Desert. The paucity of information is surprising given the controversy surrounding grazing in the Mojave and the importance of scientific information for making resource management decisions affecting grazing. Studies, mostly from

other arid and semi-arid regions tells us that grazing can alter community structure, compact soil, disturb cryptogamic soils, increase fugitive dust and erosion. Some impacts to tortoises or their habitat have been demonstrated, but the evidence is not overwhelming."

BLM intends to send a memorandum to the U.S. Fish and Wildlife Service requesting Section 7 consultation, regarding the proposed action, for the federally threatened Agassiz's desert tortoise (*Gopherus agassizii*).

No Action Alternative
Because authorization of two new watering locations would not occur, grazing would not be as well distributed in this allotment. This could have a negative impact on the plant resources that could otherwise serve as thermal cover or forage species for the desert tortoise.

Also, under the no action alternative, the terms and conditions listed in the Proposed Action would not be included in the new permit. Several of these terms and conditions that would otherwise benefit desert tortoise and associated habitat would not be implemented.

No Grazing Alternative
Not grazing the allotment could be beneficial to desert tortoise by eliminating a perceived threat of grazing in desert tortoise habitat. Grazing is one of the few threats to desert tortoise that can be managed.

However, the absence of grazing could lead to greater fuel loading and increase fire intensity and severity. If this fuel loading resulted in wildfires, then the absence of grazing could be detrimental. The Revised Recovery Plan states: "There is currently no evidence that cattle grazing will restore habitat or prevent fire in Mojave Desert environments." Further study would be needed to determine the long-term consequences of not grazing this area and how the absence of grazing impacts desert tortoise.

3.3.3 Special Status Animal Species other than those listed or proposed by the USFWS as Threatened or Endangered

3.3.3.1 Affected Environment

The allotment contains the following BLM sensitive species: Agassiz's desert tortoise (*Gopherus agassizii*), desert bighorn sheep (*Ovis canadensis nelsoni*), loggerhead shrike (*Lanius ludovicianus*), Western burrowing owl (Athene cunicularia), Brewer's sparrow (Spizella breweri), pallid bat (*Antrozous pallidus*), California myotis (*Myotis californicus*), fringed myotis (*Myotis thysanodes*), Brazilian free-tailed bat (*Tadarida brasiliensis*), and Western pipistrelle (*Pipistrellus hesperus*).

3.3.3.2 Environmental Consequences

Proposed Action

Loggerhead shrike typically nest at a height greater than what livestock can reach (3 feet and above), therefore, no direct impacts to this bird species are anticipated.

Some species show no clear response or a positive response to livestock grazing. For example, burrowing owls showed positive or mixed responses to grazing (Paige and Ritter 1999 and Saab et al. 1995). Light to moderate grazing may provide open habitat for loggerhead shrike foraging (Paige and Ritter 1999).

Brewer's sparrow is often found within 1,000 m of water (Great Basin Bird Observatory 2010), therefore, the additional waters in the Proposed Action may provide more habitat opportunities for this species.

Due to their lower nest locations (Ehrlich et al. 1988), Western burrowing owl and Brewer's sparrow may experience individual impacts from grazing, but no population-level effects are anticipated from the Proposed Action.

Studies on dietary overlap between desert bighorn sheep and cattle vary. One study between desert bighorn sheep and cattle in the Virgin Mountains of the northern Mojave Desert in Arizona did not find forage competition to be apparent (Morgart 1990). However, according to Nevada Department of Wildlife's (NDOW) Bighorn Sheep Management Plan (2001), it is important that bighorn sheep habitats are maintained in good to excellent ecological condition because livestock directly compete with bighorns for forage, water, and space. The current condition of this habitat is unknown. The proposed action is designed to maintain or move toward good to excellent ecological condition, therefore minimizing effects to desert bighorn sheep.

Very few studies have shown disease transmission between desert bighorn sheep and cattle as an issue. Experiments that put bighorn sheep in contact with species that were not domestic sheep (i.e. cattle, horses, elk, etc.) do not support a stress or transmission of fatal microbes hypothesis (Schommer and Woolever 2008).

According to the Nevada Wildlife Action Plan (Wildlife Action Plan Team 2013), range improvements resulting in better distribution of livestock, can reduce impacts, "livestock facilities such as springs developments, water pipelines, and fencing have distributed livestock use over areas that were sporadically or lightly used prior to agricultural development. Distribution of livestock over a greater area, can also reduce impacts associated with concentrated livestock – trampling, soil compaction, eroding trails, etc."

The Nevada Wildlife Action Plan goes on to discuss habitat benefits of water developments further, "the presence of livestock water developments can also improve the quality of

surrounding habitat, allowing wildlife species to expand into previously unoccupied areas. Pronghorn antelope generally require permanent water sources at intervals of less than five miles within their home range. Ranchers have become increasingly interested in, with the help of various federal programs, developing water systems that are wildlife friendly (e.g., wildlife escape ladders, using structures of different size, shape or position to enhance wildlife use). Strategically placed water developments that are managed to eliminate excessive diversion and that incorporate wildlife friendly features can be used to enhance rangeland for both livestock and wildlife. Food, cover, and space are habitat needs for both wildlife and livestock. Grazing management can be focused to managing livestock in a manner that supports these basic habitat elements while maintaining native plant community integrity – the plant communities to which native wildlife have adapted."

The installation of additional water sources would create more habitat and water sources for bats in an area where there are few natural water sources available (Kenney et al. 2005). The water installations would conform to Water for Wildlife: A Handbook for Ranchers & Range Managers (Bat Conservation International 2007).

In general, terms and conditions (such as a 40% utilization limit on vegetation) incorporated in the Proposed Action would limit habitat impacts to sensitive species that may occur within the allotment.

No Action Alternative

According to the *Nevada Comprehensive Bird Conservation Plan* (2010), "Domestic livestock (cattle and sheep) are a long-established component of most publicly managed lands in Nevada….Livestock grazing, however, is not invariably harmful to birds, and it may sometimes be beneficial for achieving particular management objectives." The Plan concludes that "overgrazing" may be a conservation concern when it involves the removal of understory vegetation at sensitive times or leads to permanent changes in vegetation composition and structure.

Also, under the no action alternative, the terms and conditions listed in the Proposed Action of this EA would not be included in the new permit. Special status species and their associated habitats would not benefit from utilization limits (meant to prevent overgrazing) that are incorporated in the Proposed Action.

No Grazing Alternative

The no grazing alternative would remove any pressure from invasive annual grasses and could allow fuel loading to increase. Increased fire frequency and severity removes and prevents the re-establishment of native perennial species. Recovery and survival of perennial habitat components is dependent on maintaining historic disturbance regimes. If invasive annual grasses are allowed to flourish without any competitive pressure, fuel loading will eventually lead to more frequent and more intense fires. Wildfires could be detrimental to sensitive species and their associated habitats.

3.3.4 Lands with Wilderness Characteristics

3.3.4.1 Affected Environment

On June 1, 2011, the Secretary of the Department of the Interior issues a memorandum to the BLM Director that in part affirms BLM's obligations relating to wilderness characteristics under Sections 201 and 202 of the Federal Land Management Policy Act. The BLM released Manuals 6310 and 6320 in March 2012, which provide direction on how to conduct and maintain wilderness characteristics inventories and provides guidance on how to consider whether to update a wilderness characteristics inventory.

The primary function of an inventory is to determine the presence or absence of wilderness characteristics. An area having wilderness characteristics is defined by:

- Size - at least 5,000 acres of contiguous, roadless federal land,
- Naturalness - The degree to which an area generally appears to have been affected primarily by the forces of nature with the imprint of people's work substantially unnoticeable, and
- Outstanding opportunities for solitude or primitive and unconfined types of recreation.
- The area may also contain supplemental values (ecological, geological, or other features of scientific, educational, scenic, or historical values).

The Nevada BLM published the original draft wilderness review in 1979, and issued the intensive wilderness inventory decision in 1980. At that time, the inventory found wilderness character lacking in the project area.

In 2011, the Ely District Office BLM began updating the lands with wilderness characteristics (LWC) inventory on a project-by-project basis until there is a land use plan revision. The region encompassing the Snow Spring allotment has had an inventory update. In this allotment one of the inventory units was found to possess wilderness characteristics (NV-040-0180-1-2011). The wilderness characteristics inventory unit covers approximately 41% of the western half of the allotment. **There has not been a land use plan amendment to determine if or how this inventory unit would be preserved to protect the wilderness characteristics.**

3.3.4.2 Environmental Consequences

<u>Proposed Action</u>

In general, grazing does not impact the three qualities elements (size, naturalness, "opportunities"). The additional developments (new watering locations, access roads) could impact the naturalness, with the imprint of people's work on the land, but these locations are proposed at already disturbed sites with partial developments in place already. Further, these developments occur on the periphery of the unit, not impacting the interior. The natural integrity of the area is already compromised with small areas of native Mohave vegetation persisting. The fire resistant green strips would likely not attract the attention of the casual observer as they

would generally be placed alongside existing roads. Thus, the proposed action would not impact the area found to possess wilderness characteristics.

No Action Alternative
The No Action Alternative is continuation of the status quo in terms of grazing management, and AUMs. There would be not impacts to the lands with wilderness characteristics unit.

No Grazing Alternative
With no authorized livestock grazing on the allotment, the need for the various structures (watering locations, fences) would not be necessary. This would result in a marginal improvement to the naturalness of the unit.

4.0 Cumulative Effects

According to page 36 of the 1994 BLM publication *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values where the incremental impact of the Proposed Action results in a meaningful change in the cumulative effect from other past, present and reasonably foreseeable future actions within the Cumulative Effects Study Area (CESA). The CESA for this project is defined as the Lower Beaver Dam Wash, Sand Hollow Wash-Virgin River, and Toquop Wash Watersheds. This area was chosen based on natural boundaries, the special scale of activities, and relevant concerns.

Additionally, the guidance provided in The National BLM NEPA Handbook H-1790-1 (USDOI 2008), for analyzing cumulative effects issues states, "determine which of the issues identified for analysis may involve a cumulative effect with other past, present, or reasonably foreseeable future actions. If the proposed action and alternatives would have no direct or indirect effects on a resource, you do not need a cumulative effects analysis on that resource" (p.57).

A comprehensive cumulative impacts analysis can be found on pages 4.28-1 through 4.36-1 of the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007). Also, a more detailed analysis of cumulative impacts in the CESA is located on pages 77-84 of the Ely District Record of Decision and Approved Resource Management Plan signed August 20, 2008.

4.1 Past Actions

Livestock grazing operations in the planning area developed during the mid to late-1800s. The Ely PRMP/FEIS summarizes livestock grazing history in the region on pages 3.16–1 to 3.16–3. Range improvements have occurred on the allotment to improve grazing management and include fencing and stockwater developments.

Vegetation treatments on the allotment include historic blackbrush burns that were conducted in the 1950's and 1960's, as well as a small out planting conducted following the 2005 fires (see SDD).

The Ely PRMP/FEIS summarizes wild horse history in the west, specifically on the Ely District on pages 3.8–1 to 3.8–7. Wild horse use has occurred throughout the project area since the 1800s.

Other past actions include:

(Refer to Map 6, Appendix I)

- Historic mining activities associated with the Viola, Vigo, Mormon Mountains, and Gourd Springs Mining Districts.
- Invasive species introduction, including tamarisk and annual grasses, have occurred since European settlement.
- Multiple utility corridor rights-of-way have been granted within the CESA (pages 77-84 of the Ely RMP 2008).
- Historic fire return interval has been shortened while fire severity has increased due to invasive species.
- Catastrophic fires during 2005 burned an unprecedented approximate total of 31,926 acres – within the Snow Springs Allotment - according to Landsat measurements.
- Records indicate off-road races have occurred in the area since the 1980s and ended in 2009. Races are no longer permitted in the area.
- Recreational OHV use occurred in the areas near Mesquite, Nevada.
- Well drilling has occurred as part of the Lincoln County Lands Act (LCLA) Groundwater Project. The wells are currently capped and unused.
- Kern River natural gas pipeline was put in to service in February of 1992.
- UNEV petroleum pipeline has been constructed within the utility corridor specified in the Ely RMP (2008), which is also used by the Kern River Pipeline.

4.2 Present Actions

(Refer to Map 6, Appendix I)

- Recreational OHV use in the CESA including un-permitted OHV events, are on the increase in the area surrounding Mesquite, Nevada.

4.3 Reasonably Foreseeable Future Actions

(Refer to Map 7, Appendix I)

- Transwest Express transmission line construction is expected to proceed within the next 6 years. The proposed route has not been finalized at this time.

- Installation of water pipeline for LCLA Groundwater Project is expected to occur within the next 10 years.

- Lincoln County Telephone Company will install a fiber optic line to service the LCLA Groundwater Project.

- LCLA Groundwater Pumping begins for municipal and/or industrial use after completion of related pipeline and infrastructure.

- The disposal of 0-300 acres of land located approximately three miles south of the Summit Spring Allotment as described in the Ely RMP (2008) and related to the Toquop power project.

- Toquop power generation is proceeding as a 1.2GW natural gas fired plant.

4.4 Cumulative Effects Summary

4.4.1 Proposed Action

<u>Proposed Action</u>

The proposed action in conjunction with the past, present and reasonable foreseeable future actions would result in no noticeable overall negative changes to the affected environment. Grazing under the proposed permit renewal would aid in maintaining achievement of the Standards for Rangeland Health, with the understanding that adjustments to grazing management would occur when any of the Standards are not being achieved. The improvement of watering facilities will aid grazing management and help in the achievement of the RAC Standards.

No cumulative impacts of concern are anticipated as a result of the proposed action in combination with any other existing or planned activity.

Other livestock grazing permits in the CESA also affect the overall rangeland health of the area. All grazing permits are designed to allow for progress towards or achievement of land health

standards. If existing livestock grazing management practices are found to be significant factors in failing to achieve the standards for rangeland health, appropriate action is taken as soon as practicable or no later than start of the next grazing season (43 CFR 4180.2(c)). Where the SDDs for the allotments within the CESA found that rangeland health standards were not being met due to cattle grazing, changes have been made to the related grazing permit.

No Grazing Alternative

The no grazing alternative, in combination with interrelated projects, would not have a cumulative effect on rangeland health outside of what was analyzed under the no grazing alternative in section 3.3.1.2.

No Action Alternative

This resource would have the same cumulative effect as the proposed action with respect to cumulative impacts.

No cumulative impacts of concern are anticipated as a result of the proposed action in combination with any other existing or planned activity.

4.4.2 No Action Alternative

The No Action Alternative would have the same cumulative effect as the Proposed Action, above.

4.4.3 No Grazing Alternative

The No Grazing Alternative will not have any cumulative effects on rangeland health.

4.6.2 Special Status Animal Species Habitats

Proposed Action

The proposed action, in combination with interrelated projects, will have the same effect as discussed in Environmental Consequences section 3.3.1.2.

No Grazing Alternative

The no grazing alternative, in combination with interrelated projects, will have the same effect as discussed in Environmental Consequences section 3.3.1.2.

No Action Alternative

The no action alternative, in combination with interrelated projects, will have the same effect as discussed in Environmental Consequences section 3.3.1.2.

4.6.3 Noxious and Invasive Weed Spread

Transportation activities, including existing road maintenance, grazing, recreation, energy and water development, and wildland fire operations within the CESA can contribute to the chance of spreading noxious and non-native, invasive weeds. Past activities have facilitated the spread of non-native, invasive species, especially along transportation routes and drainages.

Establishment of non-native, invasive species has occurred and would likely continue under the proposed action and other interrelated projects. The spread of non-native invasive species would be minimized through the measures listed in the Risk Assessment for Noxious and Invasive Weeds for this project and for other interrelated projects. In addition, the active BLM Ely District Weed Management Program would minimize the spread of weeds throughout the CESA.

5.0 Proposed Mitigation and Monitoring

5.1 Proposed Mitigation

Outlined design features incorporated into the proposed action are sufficient. No additional mitigation is proposed based on the analysis of environmental consequences.

5.2 Proposed Monitoring

Appropriate monitoring has been included as part of the Proposed Action. No additional monitoring is proposed as a result of the impact analysis.

6.0 Consultation and Coordination

6.1 List of Preparers - BLM Resource Specialists

Cameron Boyce	Natural Resource Specialist/Noxious Weed and Invasive Species/Project Lead
Daniel Condie	Rangeland Management Specialist
Chris Mayer	Supervisory Rangeland Management Specialist
Clinton Wertz	NEPA Coordinator
Alicia Styles	Wildlife, Special Status Species, Migratory Birds
Clinton Wertz	Soil, Water, Wetlands and Riparian, Floodplains
Nick Pay	Cultural Resources
Elvis Wall	Native American Cultural Concerns
Randy johnson	Hazardous & Solid Waste/Safety
Lisa Domina	Recreation, Visual Resources

6.2 Persons, Groups or Agencies Consulted

Public Notice of Availability

The Ely District Office mails an annual Consultation, Cooperation and Coordination (CCC) letter, for various program areas, to individuals and organizations who have previously expressed an interest in federal actions on the Ely District. Through the CCC letter, the public has the opportunity to submit a request to be a 2014 interested public for grazing management actions on the Ely BLM District; and to specify the specific grazing management actions and grazing allotments in which they are interested. Grazing permittees are automatically included on the Grazing Interested Public Mailing List for any allotment on which they have a grazing permit.

On November 19, 2013, the aforementioned Ely BLM annual CCC letter was mailed.

On April 5, 2013, the permittee of record was sent a letter informing them of the proposed term permit renewal process, associated with their permit on the Mormon Peak Allotment. No comments were received.

On April 23, 2013, the proposal to fully process the term permit associated with livestock grazing on the Mormon Peak Allotment was posted on the following E-Gov for Planning (ePlanning) and National Environmental Policy Act (NEPA) website: https://www.blm.gov/epl-front-office/eplanning/nepa/nepa_register.do.

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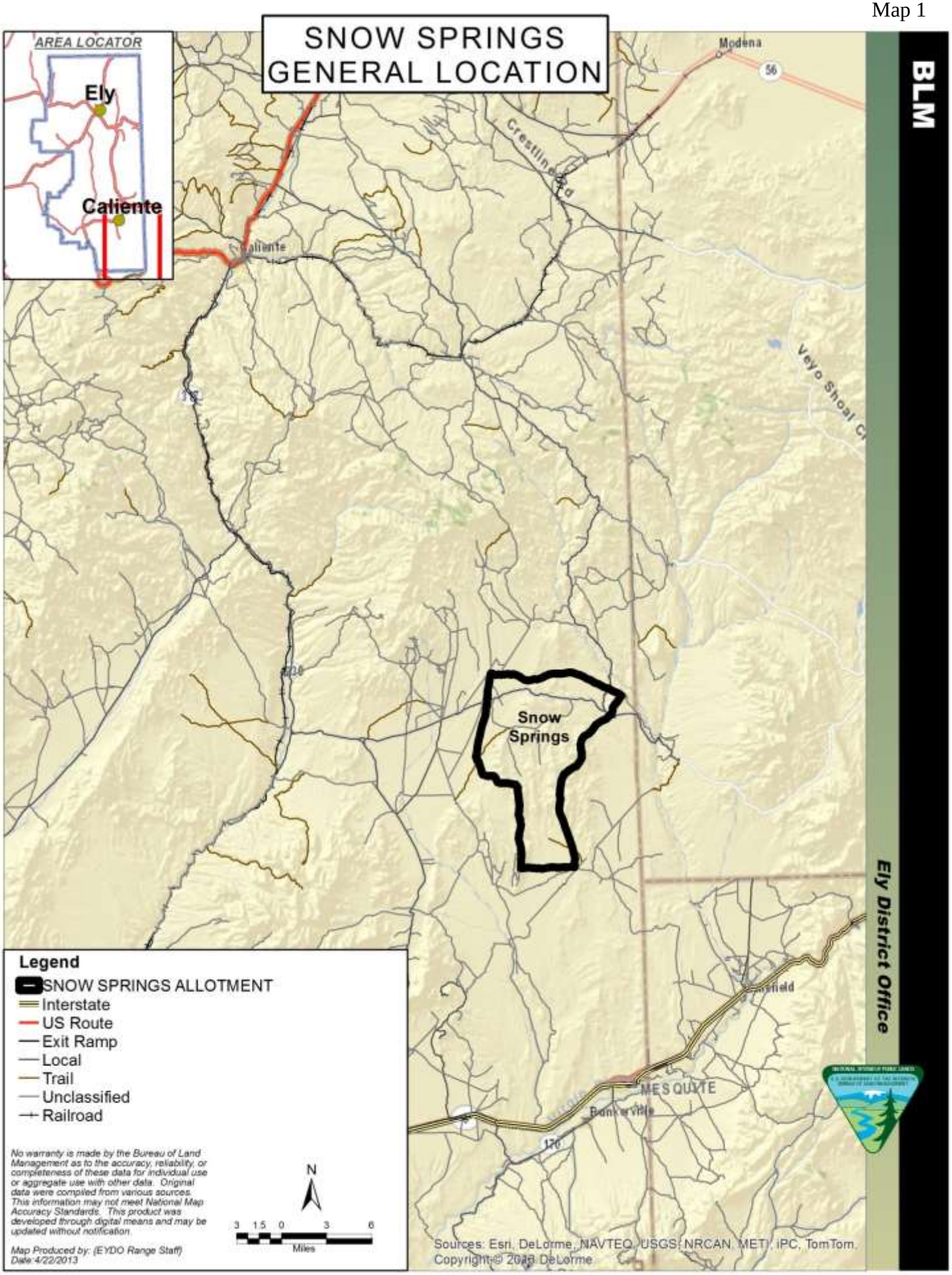
APPENDIX I

(EA)

MAP(S)

Map 1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Modena
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Mesquite
Bunkerville
170
Legend
SNOW SPRINGS ALLOTMENT
Interstate
US Route
Exit Ramp
Local
Trail
Unclassified
Railroad
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
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Date 4/22/2013
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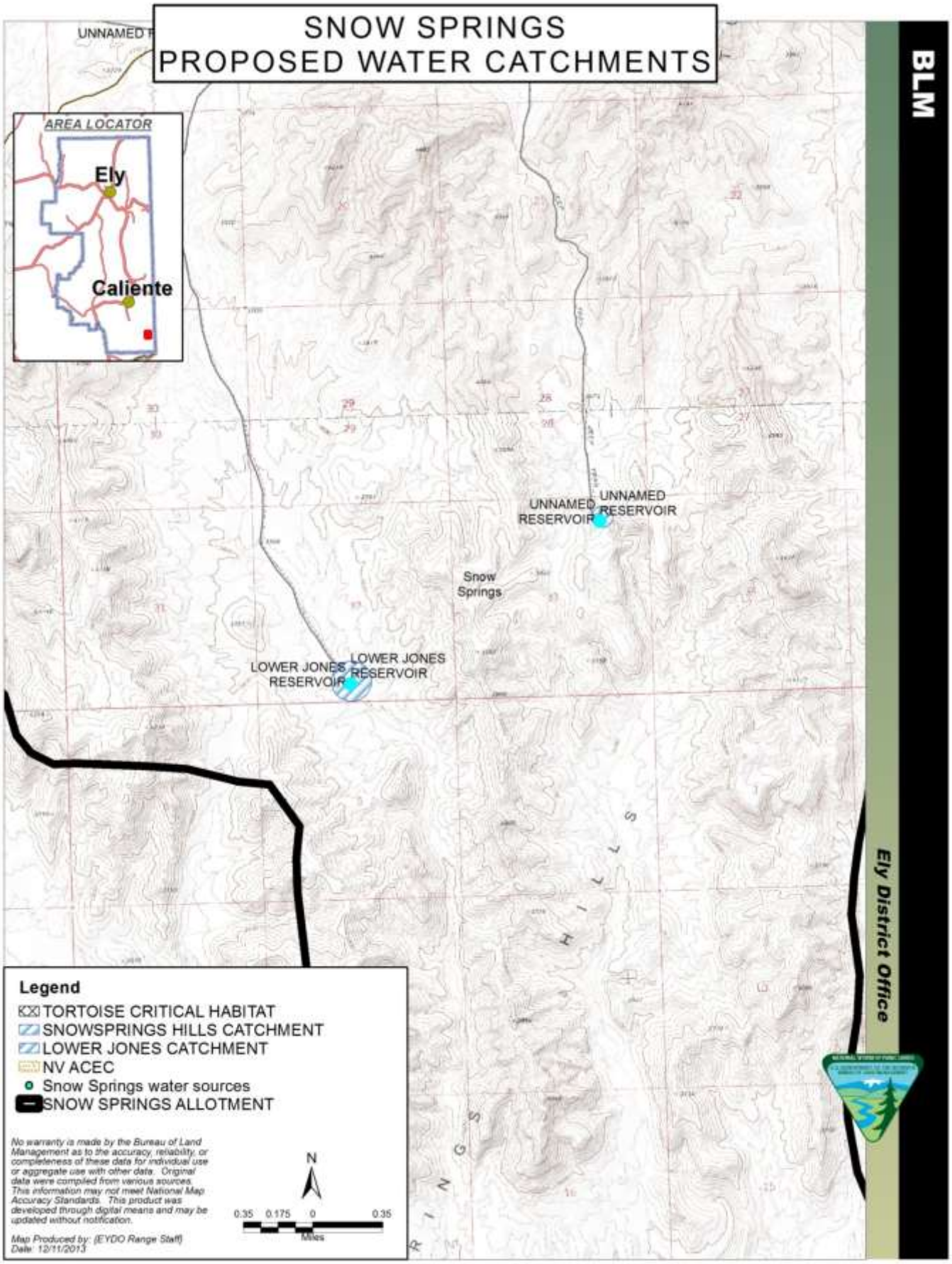
Miles
Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom, Copyright:© 2008 DeLorme
BLM
Ely District Office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Ely
Caliente
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UNNAMED RESERVOIR
Snow Springs
LOWER JONES RESERVOIR
LOWER JONES RESERVOIR
Legend
TORTOISE CRITICAL HABITAT
SNOWSPRINGS HILLS CATCHMENT
LOWER JONES CATCHMENT
NV ACEC
Snow Springs water sources
SNOW SPRINGS ALLOTMENT
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
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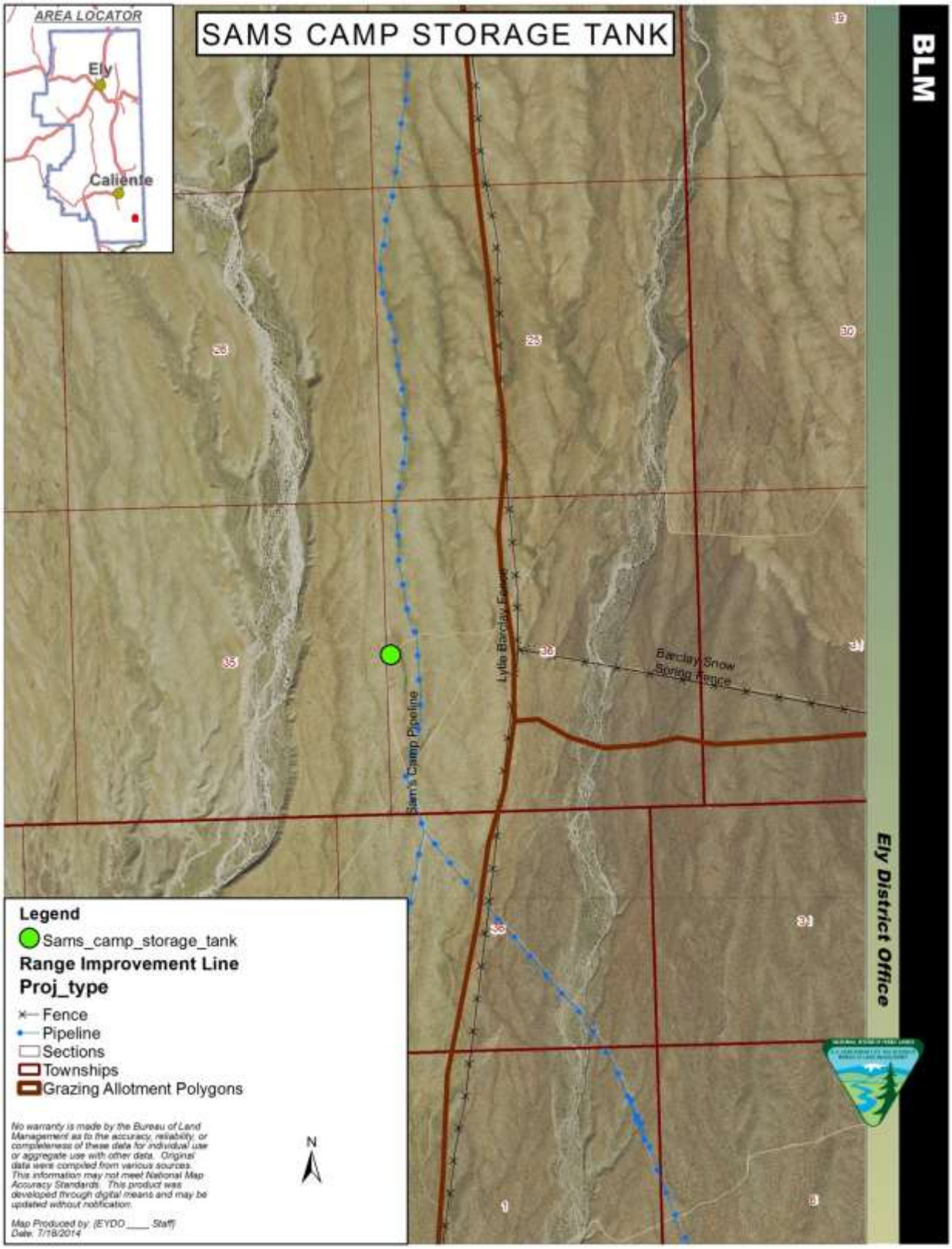
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AREA LOCATOR
Ely
Caliente
Sam's Camp Pipeline
Lyle Barclay Fence
Barclay Snow Spring Range
Legend
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Range Improvement Line
Proj_type
Fence
Pipeline
Sections
Townships
Grazing Allotment Polygons
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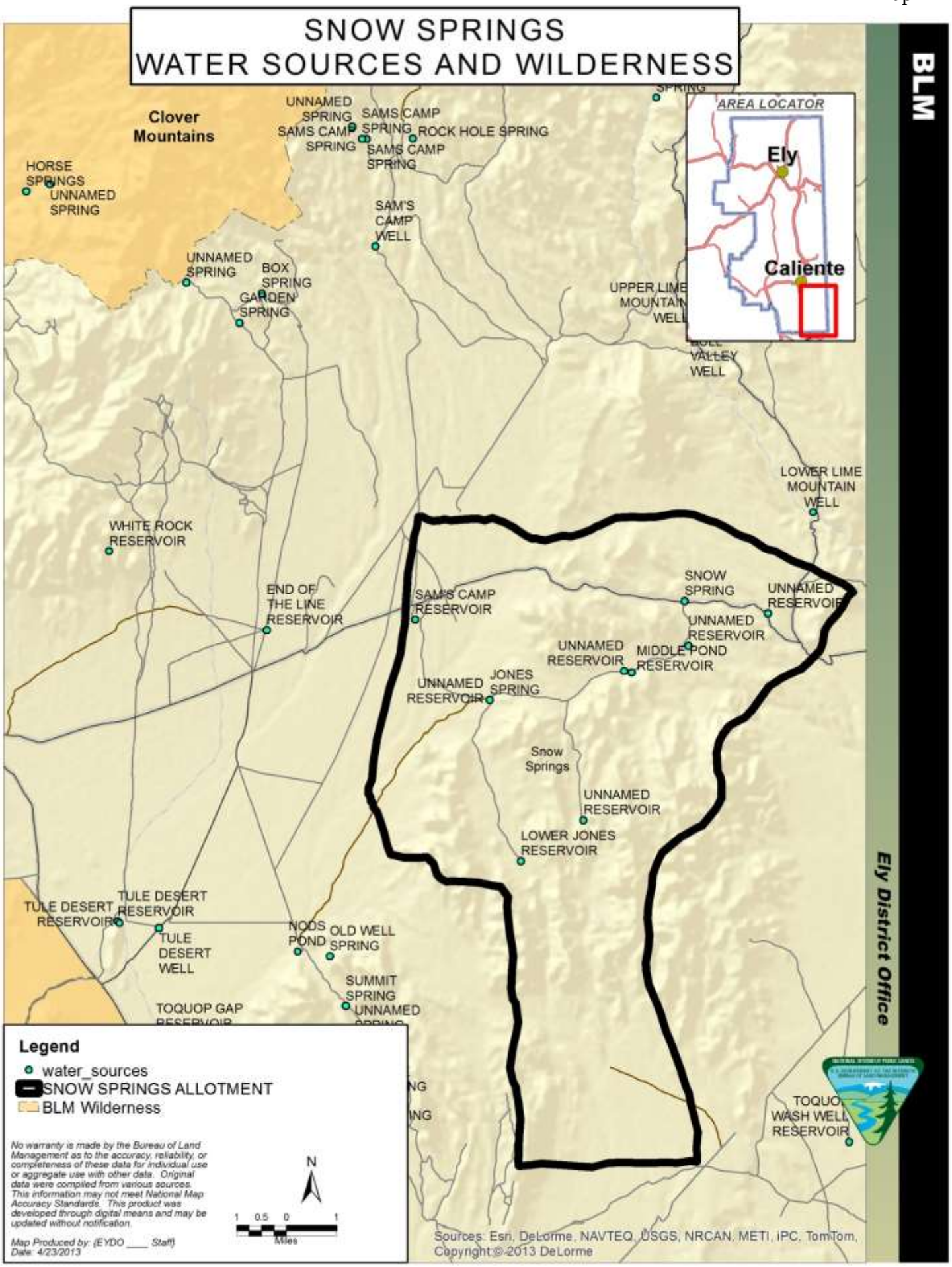
Map 4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WATER SOURCES AND WILDERNESS
BLM
Clover Mountains
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Ely
Caliente
UNNAMED SPRING
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SAMS CAMP SPRING
ROCK HOLE SPRING
HORSE SPRINGS
UNNAMED SPRING
SAM'S CAMP WELL
UNNAMED SPRING
BOX SPRING
GARDEN SPRING
UPPER LIME MOUNTAIN WELL
VALLEY WELL
LOWER LIME MOUNTAIN WELL
WHITE ROCK RESERVOIR
END OF THE LINE RESERVOIR
SAM'S CAMP RESERVOIR
SNOW SPRING
UNNAMED RESERVOIR
UNNAMED RESERVOIR
UNNAMED RESERVOIR
MIDDLE POND RESERVOIR
UNNAMED RESERVOIR
JONES SPRING
Snow Springs
UNNAMED RESERVOIR
LOWER JONES RESERVOIR
TULE DESERT RESERVOIR
TULE DESERT RESERVOIR
TULE DESERT WELL
NODS POND
OLD WELL SPRING
SUMMIT SPRING
UNNAMED
TOQUOP GAP
TOQUOP WASH WELL RESERVOIR
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water_sources
SNOW SPRINGS ALLOTMENT
BLM Wilderness
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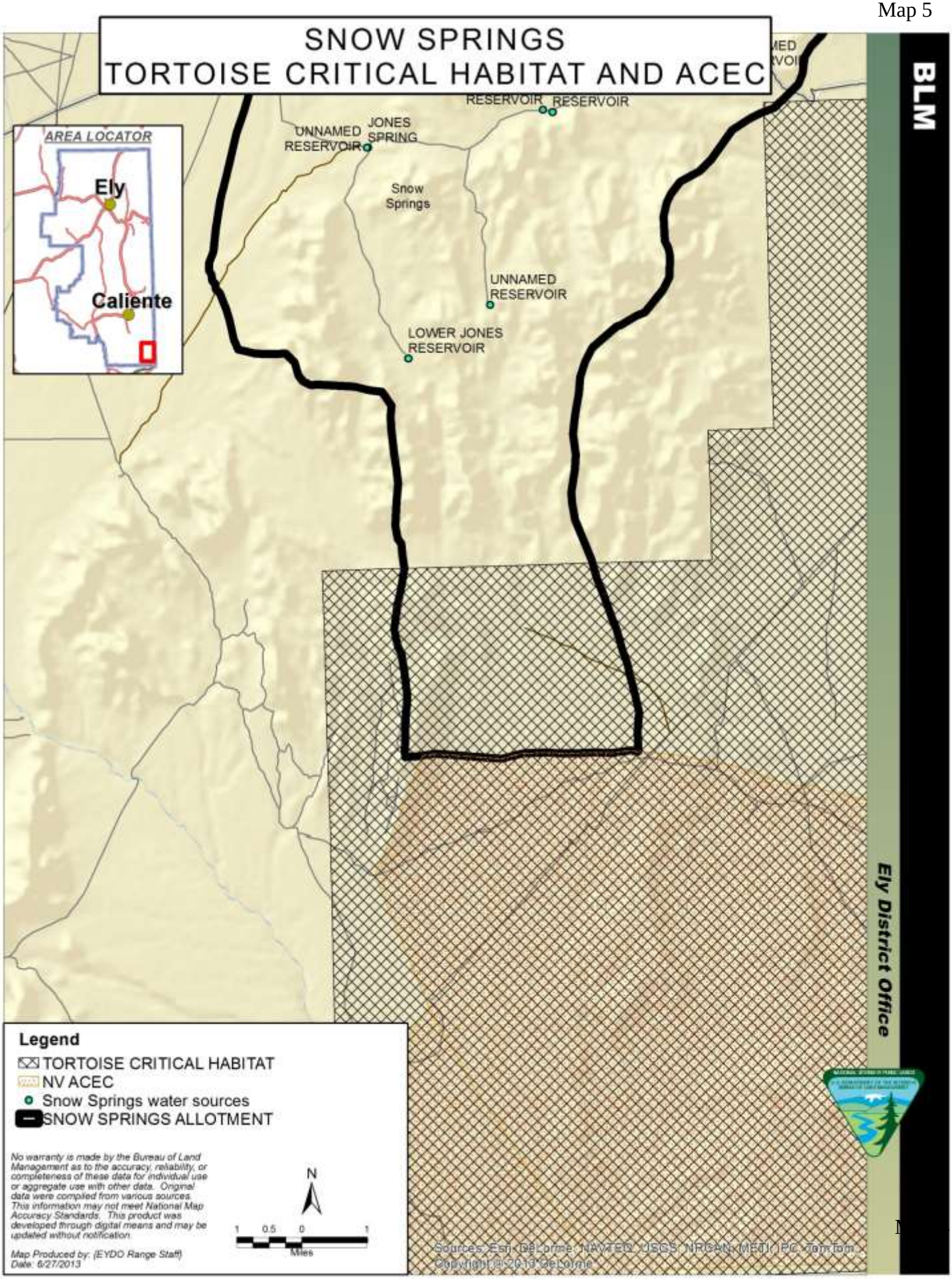
Map 5


SNOW SPRINGS
TORTOISE CRITICAL HABITAT AND ACEC
AREA LOCATOR
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Caliente
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UNNAMED RESERVOIR
JONES SPRING
Snow Springs
UNNAMED RESERVOIR
LOWER JONES RESERVOIR
BLM
Ely District Office
Legend
TORTOISE CRITICAL HABITAT
NV ACEC
Snow Springs water sources
SNOW SPRINGS ALLOTMENT
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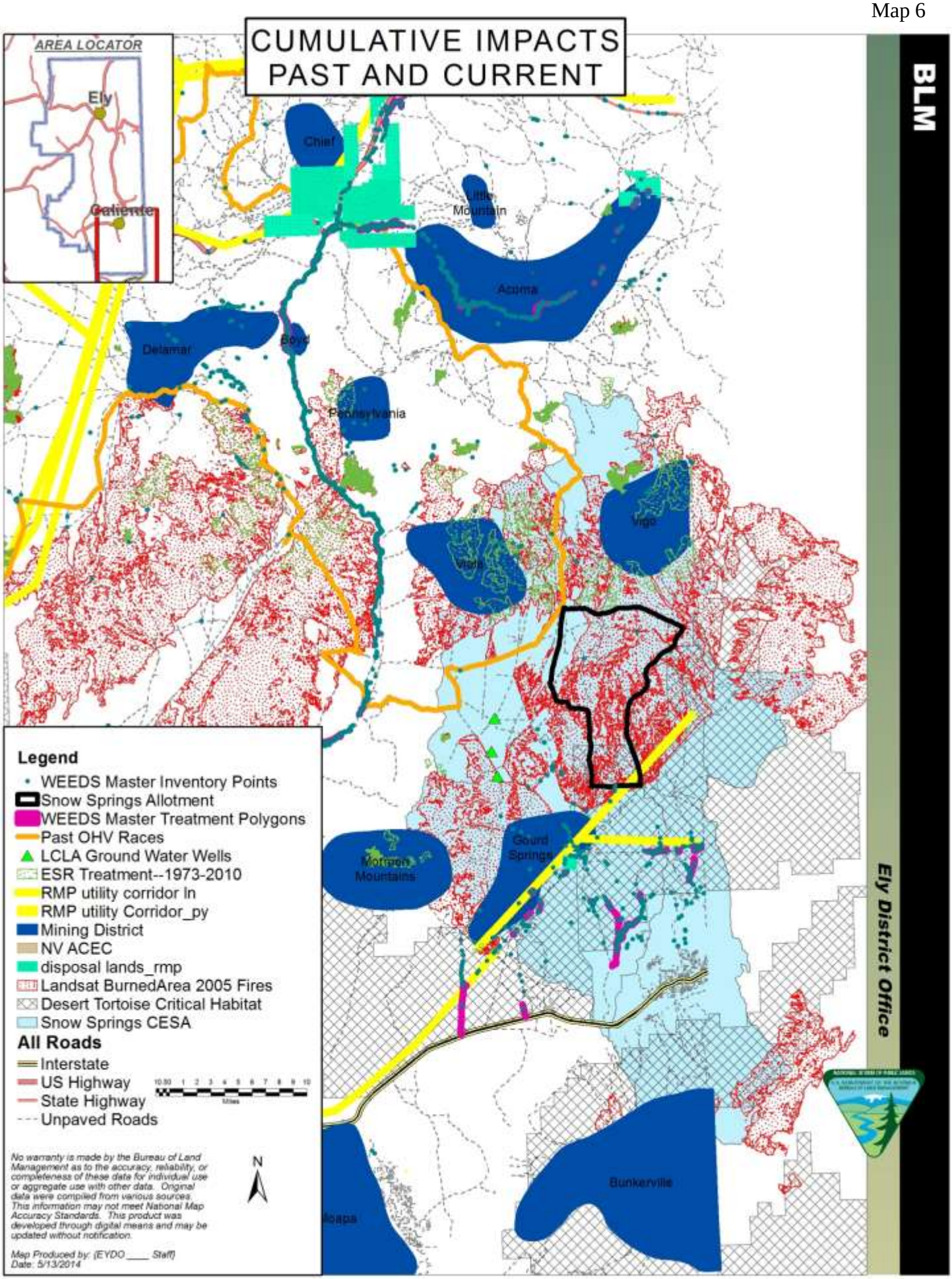
Map 6


CUMULATIVE IMPACTS
PAST AND CURRENT
AREA LOCATOR
Ely
Caliente
Chief
Little Mountain
Acoma
Delamar
Boyd
Pennsylvania
Vigo
Vigo
Mormon Mountains
Gound Springs
Bunkerville
Moapa
Legend
WEEDS Master Inventory Points
Snow Springs Allotment
WEEDS Master Treatment Polygons
Past OHV Races
LCLA Ground Water Wells
ESR Treatment--1973-2010
RMP utility corridor ln
RMP utility Corridor_py
Mining District
NV ACEC
disposal lands_rmp
Landsat BurnedArea 2005 Fires
Desert Tortoise Critical Habitat
Snow Springs CESA
All Roads
Interstate
US Highway
State Highway
Unpaved Roads
Miles
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Produced by: (EYDO ____ Staff)
Date: 5/13/2014
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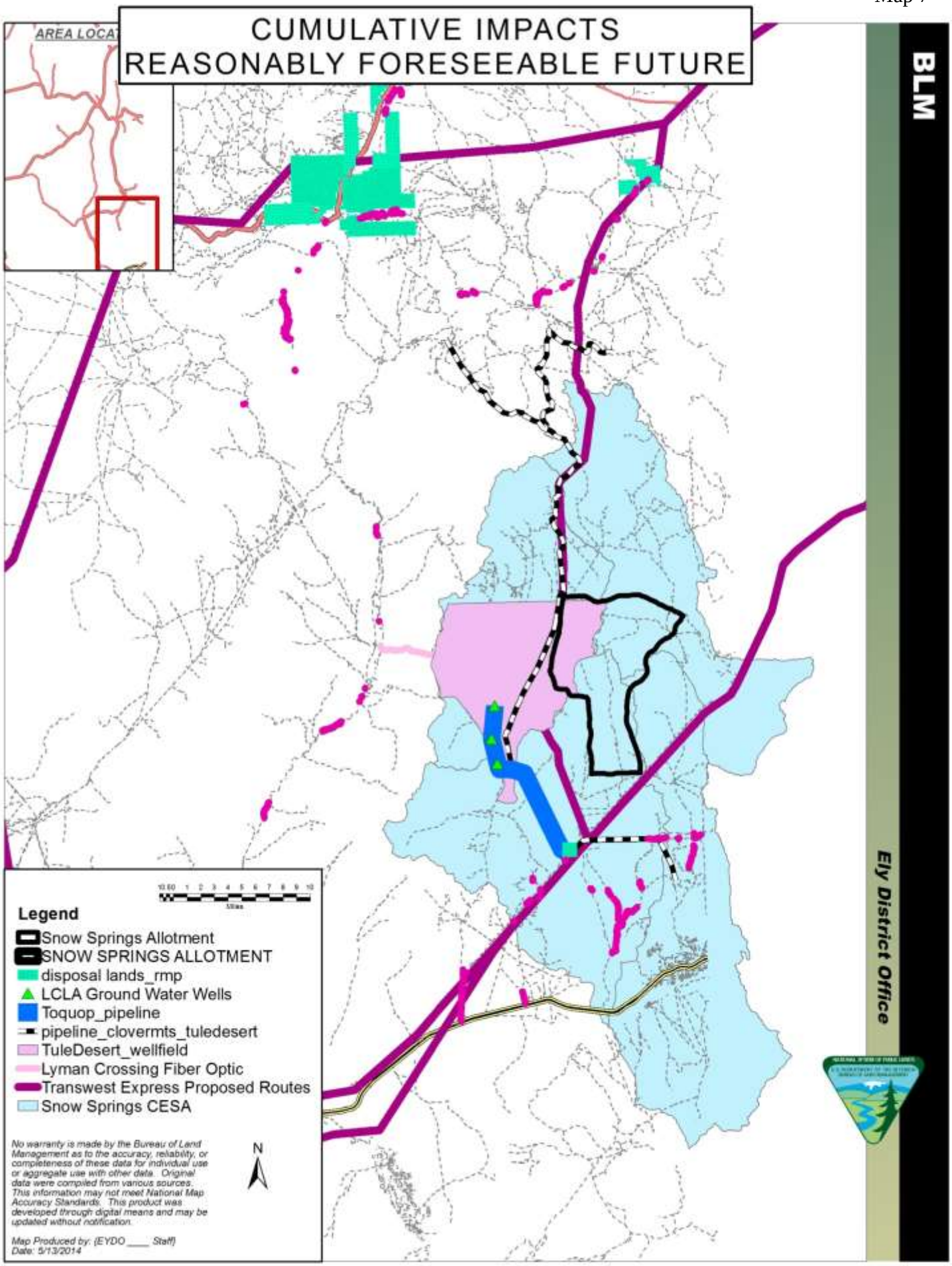
BLM
Ely District Office

Map 7


CUMULATIVE IMPACTS
REASONABLY FORESEEABLE FUTURE
AREA LOCAT
BLM
Ely District Office
Legend
Snow Springs Allotment
SNOW SPRINGS ALLOTMENT
disposal lands_rmp
LCLA Ground Water Wells
Toquop_pipeline
pipeline_clovermts_tuledesert
TuleDesert_wellfield
Lyman Crossing Fiber Optic
Transwest Express Proposed Routes
Snow Springs CESA
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Produced by: {EYDO ____ Staff}
Date: 5/13/2014
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APPENDIX II
(EA)

STANDARDS DETERMINATION DOCUMENT

Permit Renewals for Authorization Numbers 2703255, 2705038, 2703383, 2705118, 2705071 and 2705070 on the Snow Springs Allotment (#01074)
(DOI-BLM-NV-L030-2013-0004-EA)

Standards and Guidelines Assessment

The Mojave-Southern Great Basin Standards and Guidelines for grazing administration were developed by the Mojave-Southern Great Basin Resource Advisory Council (RAC) and approved by the Secretary of the Interior on February 12, 1997.

Standards of rangeland health are expressions of physical and biological conditions required for sustaining rangelands for multiple uses. Guidelines point to management actions related to livestock grazing for achieving the Standards. Guidelines are options that move rangeland conditions toward the multiple use Standards. Guidelines are based on science, best rangeland management practices and public input. Therefore, determination of rangeland health is based upon conformance with these standards. Thus Guidelines indicate the types of grazing methods and practices for achieving the Standards for multiple use, are developed for functional watersheds and implemented at the allotment level.

This Standards Determination document evaluates livestock grazing management and achievement of the Standards and Guidelines for the Snow Springs Allotment. It does not evaluate or assess the Standards or Guidelines for Wild Horses and Burros. Publications used in assessing and determining achievement of the Standards include: Ely Record of Decision and Approved Resource Management Plan (RMP) (August 2008); Sampling Vegetation Attributes; National Range and Pasture Handbook published by the Natural Resources Conservation Service (NRCS); Nevada Rangeland Monitoring Handbook; Utilization Studies and Residual Measurements; Nevada Plant List; and Major Land Resource Area (MLRA 30) Rangeland Ecological Site Descriptions. A complete list of references is included at the end of this document. These documents are available for public review at the Caliente Field Office during business hours.

The Snow Springs Allotment, a land based allotment having five (5) permittees with six (6) grazing authorizations, is located in central Lincoln County, Nevada. It is approximately 40 miles southeast of Caliente, Nevada and approximately 15 miles north of Mesquite, Nevada (Map #1). The allotment spans parts of the Beaver Dam, Tule Desert, and Toquop Watersheds, and is approximately 44,376 acres in size. Cattle are the type of livestock grazed on the

allotment. Elevations range from approximately 4,500 feet on the hill tops in the north to approximately 2,800 feet in the low lands in the southern end of the allotment.

Neither the allotment nor any of its portions are located within a Wild Horse Herd Management Area (HMA). There are no Wilderness areas located within the allotment (Map #2). The entire allotment contains habitat for the federally threatened Agassiz's desert tortoise *(Gopherus agassizii)*, with 6,358 acres designated as desert tortoise critical habitat on the southern end of the allotment (Map #3).

There are two developed springs that service livestock watering locations on the allotment (Map #3). Water is transported by pipelines to other watering locations. There are also reservoirs on the allotment designed to capture run off.

In the summer of 2005, the Duzak Fire, located in Lincoln County Nevada, started due to lightning (Map #4). The fire burned nearly 332,000 acres which includes 31,926 acres (Landsat) of the Snow Springs Allotment. In 201,1the Santa Clara Fire burned 463 acres on the northern boundary of the allotment.

Fires occurring in the Mojave-Great Basin are most likely to occur during tortoise active season and have already resulted in unprecedented tortoise mortality. It is believed that any tortoises not killed directly by fire are impacted by habitat loss, specifically the loss of thermal cover. However, ongoing studies and current field observations show that desert tortoise still make use of burned habitat.

Multiple key areas have been established throughout the allotment in order to monitor grazing management as well as changes indirectly related to grazing. Some key areas were established over 30 years ago and may not capture elements important to today's management or may not represent a significant portion of the allotment. For this reason, a number of supplemental monitoring points were also established to cover the range of soil types as well as in response to changes from the 2005 wildfires (Map #5). Cover and composition was collected at each of the monitoring points.

Utilization and cover data and was obtained reflecting grazing use during the 2008 to 2012 grazing years at key areas and other monitoring points using the Line Point Intercept and Line Intercept methods. The 2008 data was collected for a special legislation funded project for desert tortoise. This data was collected specifically for analysis of tortoise habitat and the methods differed slightly from that of the following years which was grazing specific. However, the data are comparable. Cover data was also obtained at additional monitoring points in 2009 in order to provide supplemental information outside of key areas to better describe vegetation condition on the allotment.

Table 1 in Appendix B displays annual livestock grazing use for Authorization Numbers 2703255, 2705038, 2703383, 02705118, 2705071, and 2705070 on the Snow Springs Allotment - as AUMs licensed each year by each permittee; total AUMs licensed each year on the allotment for all six permittees; and, total AUMs licensed each year on allotment as a percent of the total Active Use of all six permittees - from March 1, 2002 through February 28, 2012 (10 years).

The table also displays the individual Total Active Use for all four permittees and the Season of Use on the allotment.

As the table indicates during the 10 year timespan, the total AUMs licensed each year on allotment as a percent of the total active use of all six permittees, ranged from 8% in 2005 to 48% in 2011. The lowest use of 8% in 2005 is attributable to the fires that occurred that year.

During 2005, the Duzak Fire burned approximately 31,926 acres or 72% of the allotment, and in 2011 the Santa Clara Fire burned approximately 463 acres of the Snow Springs Allotment. This fire was lightening caused and the primary fuel source was invasive annual grasses *(Bromus spp.)*. This fine fuel enables rapid fire spread which is exacerbated by winds. Fire policy and tactics at the time were not well suited for fire in this environment and constraints were in place due to concern of desert tortoise. The fires of 2005 proved to be a learning experience for the BLM and the U. S. Fish and Wildlife Service (FWS). The outcome resulted in changes in firefighting tactics for the Mojave Desert and desert tortoise habitat. Due to the enormous amount of burn area nationally in 2005, and the lack of suitable seed available, there was not any large scale seedings on the Snow Springs Allotment. However, in 2008 there was one demonstration project which worked towards burn area recovery. This small scale project involved the planting of seedlings in demonstration plots. Spiny Hop Sage (*Greyia Spinosa)*, four-wing saltbrush *(Atriplex Canescens)* and Blackbrush *(Coleogyne ramosissima)* seedlings during the spring. The seedlings were hand watered for approximately one month after planting. This project had limited success with an approximate 30% success rate.

It has been shown in past and recent research that successful restoration in the Mojave Desert is limited and that broadcast seeding of native species is ineffective except on favorable years and that planting seedlings in combination with irrigation has proven to be successful on a small scale (Abella et al 2012). However, this method is impractical and cost prohibitive on a large scale such as would be needed for the 2005 Duzak Fire. Currently the most viable option for restoring degraded or lost ecological functions is to plant non-native species that are adapted to the climate conditions and can fulfill or help to restore lost ecological functions, including fire regime and thermal cover for tortoise (Bowns et al 2013). It is possible that introduction of more competitive non-native species could achieve restoration, but success would be more likely through an integrated approach as directed by the principles of pest management. This would not only include the use of non-native species, but may also incorporate the use of prescribed burning, chemicals, and mechanical methods for maintaining historic fire frequency.

Figure 1. Comparison of Key Area 1 in 1980 pre-burn and 2011 post-burn.

According to the ecological site description, precipitation in the area averages 5-7" over the course of a normal year, with a majority of rainfall occurring during January to March. Records from the Beaver Dam, Arizona weather station show a maximum annual level reached in 1978 of 14.32" and a minimum of 2.02" in 2002 over the last 42 years of measurements. By observing the annual totals for the past 46 years, a pattern is apparent (Figure 2). Approximately every 5-7 years the precipitation nearly doubles. This appears to be in conjunction with El Nino-Southern Oscillation events. This apparent pattern may be of special interest for management as it may provide the possibility to predict future wet years when native perennials are most likely to establish as well as years of high annual grass production and high fire severity. More analysis would be needed and is beyond the scope of this document.

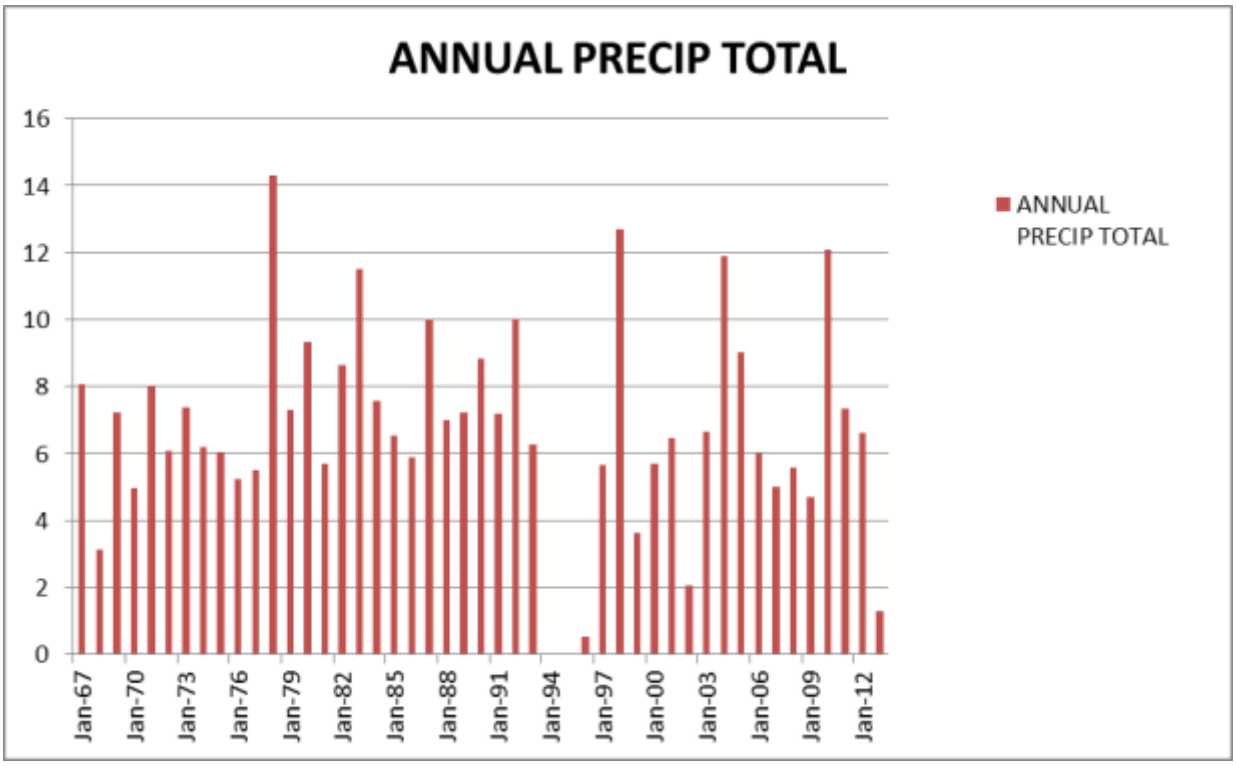

Figure 2 annual precipitation totals

The Key Species Method was used in determining grazing use according to the Nevada Rangeland Monitoring Handbook (2006). This method is based on percent utilization of current year's growth, by weight. The method is described in Sampling Vegetation Attributes (USDI-BLM et. al., 1996).

The following is an analysis of monitoring data which were used to evaluate applied management practices during the evaluation period. These data were used in determining if such management practices yielded results that were in conformance with the Mojave - Southern Great Basin Standards.

It should be noted that the summer of 2013 had significant establishment of perennial native grass in many areas due to rain events, but this is not reflected in the monitoring studies that were completed prior to 2013.

STANDARD 1. SOILS:

"*Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.*"

Soil indicators:
- Ground cover (vegetation, litter, rock, bare ground);
- Surfaces (e.g., biological crusts, pavement); and
- Compaction/infiltration.

Riparian soil indicators:
- Stream bank stability.

All of the above upland indicators have been deemed appropriate to the potential of the ecological site.

Determination:

☐ Achieving the Standard
X Not achieving the Standard, but making significant progress towards meeting the Standard.
☐ Not achieving the Standard, not making significant progress towards meeting the Standard.

Causal Factors:

☐ Livestock are a contributing factor to not meeting the standard.
☐ Livestock are not a contributing factor to not meeting the standard.
☐ Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

X In conformance with the Guidelines
☐ Not in conformance with the Guidelines

Soil Mapping Units and corresponding Rangeland Ecological Site Descriptions, as determined by the NRCS, combined with professional field observations were used to determine the ecological site represented by each key area (Map 6).

The 23 study sites occur within three different ecological sites; R030XB001NV, R030XB005NV, and R030XB029NV. While soil maps show key area 1 is in R030XB001NV, historical photographs show the site being dominated by blackbrush which corresponds to the adjacent ecological site R030XB029NV. It should be noted that red stem storks bill *(Erodium circutarium)*, red brome *(Bromus rubens)* was not counted in the transects due to its short life span and highly fluctuating production levels in relation to precipitation. It is present on all sites throughout the allotment, with the highest densities in the burn areas where it incidentally provides soil protection and stabilization. However, storks bill and red brome was counted in the desert tortoise transects because of the differing study objectives.

R030XB001NV is described as a Limy Hill 5-7” PZ. Slopes range from 8 to 75 percent, but slope gradients of 15 to 50 percent are most typical. Elevations are 1500 to about 4500 feet. Average annual precipitation is about 5 to 7 inches. The soils of this site are shallow, derived from mixed parent material. The soils are typically calcareous to the surface. Surface soils have high amounts of gravel, cobbles, or stones. The water intake rate is slow to moderate and available water capacity is very low. Runoff is rapid and these soils are well drained. Approximate ground cover (basal and crown) is 10 to 20 percent. However, associated and competing sites include 030XB017NV, which is characterized by a 3”-5” PZ and basal and crown ground cover is less than 7 percent.

Table 1

Range Site R030XB001NV AMDU2-LATR2/PLRI3			
KA or study site	Line Intercept % foliar and basal cover	Line Point Intercept % foliar and basal cover	% ground cover litter and rock
4	5.9	22	95
6	2.0		
9	2.7		
11	1.8		
14	14.8	16	16
18	0.7	2	52
20	4.5	5	78
29 tortoise	1.8	20	80

Key areas and supplemental studies in this ecological site show foliar cover ranges from 1.8 to 14.75 percent for the Line Intercept method and 2 to 22 percent for Line Intercept method.

Figure 3. Overview of Key Area 1 showing current vegetation.

R030XB005NV is also described as a Limy Hill 5-7" PZ. This site occurs on piedmont slopes and alluvial plains on all exposures. Slopes range from 2 to 30 percent, but slope gradients of 2 to 15 percent are typical. Average annual precipitation is 5 to 7 inches. The soils of this site are shallow to moderately deep. Soil depth to a layer restrictive to root development is greater than ten inches. Available water capacity is very low and runoff is slow to moderate depending on slope. Expected ground cover (basal and crown) is 15 to 25 percent.

Table 2

Range Site R030XB005NV LATR2-AMDU2/PLRI3			
KA/study site	Line Intercept % foliar and basal cover	Line Point Intercept % foliar and basal cover	% ground cover litter and rock
5	4.55	4	61
15	0.16	1	55
16	4.5	5	67

Figure 4. Overview of Key Area 5 showing current vegetation.

Figure 5. Overview of Transect 16 showing current vegetation.

R030XB029NV is described as a shallow gravely loam 5-5” PZ (sic). This site occurs on fan piedmonts, hills and mountain toeslopes on all exposures. Slopes range from 2 to 75 percent, but slope gradients of 8 to 30 percent are most typical. Average annual precipitation is 5 to 7 inches. The soils are shallow. Textures are gravelly clay loams to loams, and have lime in the profile. Water intake rates are moderate to slow. Available water capacity is low. Runoff is medium to rapid and the soils are well drained.

Table 4

Range Site R030XB029NV			
KA/study site	Line Intercept % foliar and basal cover	Line Point Intercept % foliar and basal cover	% ground cover litter and rock
1 (26 tortoise)	3.8	12	52
3	4.75	12	
7	1.79		
8	1.02		
10	0		
12	28.38	35	64
13	23.2	22	56
17	11.2	11	59
19	3.7	1	69
21	3.9	3	59
2(27 tortoise)	8.1	8	62
28 tortoise	11.7	18	58

The following three photos (Figures 6-8) show the vegetation and soil surface characteristics of the key areas.

Figure 6. Key Area 1 showing current vegetation.

Figure 7. Overview of Key Area 2 showing current vegetation.

Figure 8. Overview of Key Area 3 showing current vegetation.

Figure 9. Overview of Key Area 7 showing considerable perennial grass establishment in 2013.

The table below shows a comparison summary of cover data, collected at each key area on the Snow Springs Allotment, to the potential natural community (PNC) cover value for the applicable range site.

Table 5

Key Area	Range Site*	Associated Vegetation Type	% Cover Collected at Key Area	% Cover at PNC In Applicable Rangeland Site Description
1** (26 tortoise)	R030XB029NV	CORA/PLRI3	2	15-30
2 (27 tortoise)	R030XB029NV	CORA/PLRI3	8	15-30
3	R030XB029NV	CORA/PLRI3	9	15-30
4	R030XB001NV	AMDU2-LATR2/PLRI3	22	10-20
5	R030XB005NV	LATR2-AMDU2/PLRI3	4	15-25

* Based upon Soil Mapping Units as provided by the Natural Resource Conservation Service (NRCS) along with ground reconnaissance.

** Soil maps show this KA as being in R030XB001NV, but historical photos confirm that it is actually in R030XB029NV.

Conclusion: *Standard 1 Not achieving the Standard, but making significant progress towards meeting the Standard.*

According to the ecological site descriptions, potential ground cover (basal and crown) should range between 10-20% for key area 1, 15-30% for key areas 2 and 3, and 15-25% for key area 5. As the above table shows, cover values at all 4 key areas are below the potential cover for perennial vegetation on these range sites. However, while perennial foliar cover is not adequate for the site, additional soil protection is created by invasive annuals, primarily *Bromus rubens* and *Irodium cicutarium.* The ecological sites in the southern part of the allotment (R030XB005NV) also contain significant amounts of rock on the surface which also help protect against soil movement. There are no obvious signs of soil erosion or litter movement. Therefore, soils on the Snow Springs Allotment appear stable with good water infiltration and protection from rain impact and wind scour. The effects of *Bromus spp.* and *Erodium spp.* on nutrient cycling is not well understood in the Mojave Desert, but the preponderance of research does suggest that the dominance of invasive annuals is attributed to their ability to use resources sooner and more rapidly than native annuals (Brooks 2000). As a result native annuals, as well as perennial plant establishment and production, may be suppressed in this invasive annual dominated system.

Utilization data collected at key areas 1-5, reflecting grazing use during the 2011 grazing year showed no recordable use (0) for key areas 1, 3, 4, and 5. Key area 2 was the only site that showed use on perennial forage with moderate (51%) use.

Utilization data for the 2012 grazing showed similar results, but with only slight use on KA-2. Since the 2005 fires, cattle primarily consume invasive annual grasses, *Erodium circutarium,* and Russian thistle (*Salsola spp.*).

Therefore, grazing use data indicates that overgrazing is not the cause for not meeting standards.

Field observations on the allotment have substantiated that soils were stable, plants were not pedestalled and there were no signs of soil compaction. This indicates that the allotment has sufficient vegetative cover to maintain stability and to resist accelerated erosion, maintain soil productivity and, thus, sustain the hydrologic cycle. It further indicates that there is minimal wind and/or water erosion of topsoil, and apparent appropriate infiltration of water from snowmelt and rainfall. In addition, the gravelly/stony soil surface characteristics found in soil mapping units comprising large portions of the allotment further contribute to soil protection.

Collectively, none to moderate grazing intensities and sufficient live vegetative cover infers litter production that further adds to increased soil protection and stability. Field observations have substantiated various amounts of scattered litter throughout the allotment. However, much of the litter is the result of non-native annual grasses.

Failure to meet Standard 1 is the result of departure from the historical fire regime and the extreme fire events of 2005 that destroyed the native plant communities which were fueled by invasive annual grasses. Recovery of this arid ecosystem is episodic and may take upwards of 60

years or more. In the case of soils historically occupied by blackbrush *(Coleogyne ramosissima)*, recovery may never occur and the site should be considered permanently converted to a different vegetation type (Bowns 2013). This vegetation type is likely to remain dominated by invasive annuals unless species can be introduced that restore the historical disturbance regime.

Invasive non-native annuals do not serve the same ecological role as native annuals or perennials. In the Mojave Desert *Bromus rubens* readily occupies the normally large interspaces between perennial plants creating fuel continuity (USDA 2007). In the pristine condition, lightning strikes normally resulted in spot fires that did not readily spread. With increased fuel continuity from invasive annuals, fires are able to spread rapidly and grow far beyond anything experienced historically. The dominance of invasive annuals is maintained in perpetuity by increasing the fire frequency; moving the fire return interval from greater than 500 years to an interval of 2-5 years. Under an increased fire return interval, native perennials cannot establish or persist which makes burn area and habitat recovery impossible.

The impacts to the former blackbrush dominated sites (R030XB029NV) are even more pronounced. These plant communities are estimated to have established under a different climate regime 500-1000 years ago (Bowns 2013). Soils in these communites have proven especially difficult for reestablishing perennial vegetation. The only successful seedings in comparable sites have been those that used forage kochia *(kochia prostrate)* and sideoats grama *(Bouteloua curtipendula)*. It is interesting to note that the United States Department of Agriculture Plants Database lists sideoats grama as being native to all of the lower 48 states except Nevada. Incidentally, forage kochia has also proven to be fire adapted and not only able to withstand fire, but has also shown an ability to stop fire spread. Forage kochia has been successfully used for a number of years in the Great Basin, and has just recently been used within the Great Basin-Mojave Desert ecotone to rehabilitate burn areas. The U.S. Agriculture Research Station in Logan, Utah has developed a variety of forage kochia called “snowstorm,” which may prove better adapted to the conditions found on the Snow Springs Allotment. However, the allotment remains at the lower edge of the climate range for “snowstorm” and successful establishment is questionable.

Field observations in 2013 show considerable perennial grass establishment in the area of Key Area 7 and Jones Spring and Jones reservoir. This was likely due to the optimal timing of rain events during the summer that caused a surge in the establishment and growth of sand dropseed *(Sporobolus cryptandrus)* over significant portions of burn area. It should also be noted that this occurred without rest from grazing.

STANDARD 2 ECOSYSTEM COMPONENTS:

"Watersheds should possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses."

"Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function)."

Upland indicators:

- Canopy and ground cover, including litter, live vegetation, biological crust, and rock appropriate to the potential of the ecological site.
- Ecological processes are adequate for the vegetative communities.

Riparian indicators:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows.
- Elements indicating proper functioning condition such as avoiding acceleration erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:

  - Width/Depth ratio;
  - Channel roughness;
  - Sinuosity of stream channel;
  - Bank stability;
  - Vegetative cover (amount, spacing, life form); and
  - Other cover (large woody debris, rock).

- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Water quality indicators:

- Chemical, physical and biological constituents do not exceed the state water quality standards.

Determination:

☐ Meeting the Standard
X Not meeting the Standard, but making significant progress towards meeting the Standard.
☐ Not meeting the Standard, not making significant progress towards meeting the Standard.

Causal Factors:

☐ Livestock are a contributing factor to not meeting the standard.
☐ Livestock are a contributing factor to not meeting the standard.
☐ Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

X In conformance with the Guidelines
☐ Not in conformance with the Guidelines

Conclusion: *Standard 2*

Upland Ecosystem Components – *Not Achieved*
Riparian Habitat Components – *Not applicable*

Uplands

Data and field observations relating to soils, hydrologic processes, and ground cover (including litter and rock) were discussed in Standard 1 which was achieved. Observed live vegetation species are discussed in Standard 3.

Unburned portions of the allotment and some areas of low fire intensity support a healthy, diverse variety of native perennial grasses and shrubs with a small component of annual forbs; all of which provide soils with the appropriate inputs of organic matter to become incorporated into the surface soil layer. Summarily, all of this infers that ecological processes are adequate for the existing vegetative communities, while sustaining appropriated uses.

Burned portions of the allotment show a considerable decrease in perennial native vegetation. However, some native species are still present at low densities. It is expected that native perennial and annual species density will increase over time if enough time passes between fire intervals. Professional observation of historic burns as well as research indicate that the native blackbrush communities that represented the pre-fire condition are permanently converted to an altered state. Currently, most ecological processes are functional; soils are stable and are protected from erosion, forage is available and thermal cover continues to improve for desert tortoise. However, the ecological role of fire will continue to be out of balance and a threat to the system as long as invasive annual grasses have the potential to carry fire. Grazing is the only practical tool currently in use to address unprecedented fuel loading before fire occurs in the Mojave Desert ecosystem.

Precipitation events during the summer of 2013 resulted in significant establishment of sand dropseed *(Sporobolus cryptandrus)*. The establishment of this perennial native species indicates that the area is making significant progress in burn area recovery, and it should be noted that this occurred with active grazing and without administrative grazing restrictions. However, permittees have adjusted livestock numbers according to resource conditions.

Figure 10. Perrenial native grass establishment near Key Area 7.

Riparian

The allotment contains two springs, Snow Spring and Jones Spring, both of which have been fully developed.
Snow Spring flows in to a spring box and pipe where it is diverted to a trough and pond. Development of this spring took place over 100 years ago and it is believed that this spring was just a seep and lacking surface water before it was developed. According to a PFC assessment, the associated riparian area has not achieved its potential due to development and dredging. Some willow is present, but is located in the upland portion. No sedges were found. Grazing by livestock does not occur within the exclosure. It was determined that this system has been dewatered and is not capable of supporting riparian vegetation.

Figure 11. Snow Springs water source.

Jones Spring has also been highly disturbed. Historically, this too was likely a seep that was excavated to access flowing water. Water is piped from the source to a trough outside of the exclosure approximately 300 feet away. According to the PFC assessment, this system may contain some sedge species. However, it is stated by the interdisciplinary team that there is no capability to form a riparian system due to the high level of disturbance and the dominance of cattails *(Typha Spp.)* and tamarisk *(Tamarix Spp.)*. It should be noted that the area lacks saturation at or near the surface and is not inundated by water at or near the surface. Therefore, it would be unlikely to support riparian species in its pristine condition. The exclosure surrounding the spring has often been left open which allows cattle to access the spring. This may or may not have a negative impact as the cattle remove the over-story of non-native cattails.

Figure 12. Jones Spring water source.

There is also an unnamed spring or seep located on the allotment. This may provide a reference condition and demonstrate the potential of both Jones Spring and Snow Spring assuming no development had occurred. The hydrology and hydro-period appear inadequate to support riparian vegetation, especially during summer months or during drier years.

Figure 13. Unknown Spring showing reference condition.

STANDARD 3 HABITAT AND BIOTA:

"Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species."

Habitat indicators:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, and age classes);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Wildlife indicators:

- Escape terrain;
- Relative abundance;
- Composition;
- Distribution;
- Nutritional value; and
- Edge-patch snags.

The above indicators shall be applied to the potential of the ecological site.

Determination:

☐ Achieving the Standard
X **Not achieving the Standard, but making significant progress towards meeting the Standard.**
☐ Not achieving the Standard, not making significant progress towards meeting the Standard.

Causal Factors:

☐ Livestock are a contributing factor to not meeting the standard.
X Livestock are not a contributing factor to not meeting the standard.
☐ Failure to meet the standard is related to other issues or conditions.

Guidelines:

X **In conformance with the Guidelines**
☐ Not in conformance with the Guidelines

General field observations revealed that at least 15 perennial species of shrubs; seven perennial species of grasses; a variety of perennial forb species; and at least 6 different species of cacti exist in a patchy network within the allotment. The following tables display these observations:

Key Area 1				
Shrubs	**Grasses**	**Forbs**	**Forbs**	**Cacti**
Larrea tridentata (DC.) Coville creosote bush	*Bromus madritensis* L. compact brome	*Erodium cicutarium* (L.) L'Hér. ex Aiton redstem stork's bill	*Dichelostemma capitatum* (Benth.) Alph. Wood bluedicks	*Yucca brevifolia* Engelm. Joshua tree
Gutierrezia sarothrae (Pursh) Britton & Rusby broom snakeweed		*Sisymbrium* L. hedgemustard	*Descurainia pinnata* (Walter) Britton western tansymustard	*Yucca baccata* Torr. banana yucca
Ephedra nevadensis S. Watson Nevada jointfir		*Eriogonum* Michx. buckwheat	*Calochortus flexuosus* S. Watson winding mariposa lily	*Cylindropuntia acanthocarpa* (Engelm. & J.M. Bigelow) F.M. Knuth buck-horn cholla
Thamnosma montana Torr. & Frém. turpentinebroom		*Gilia* Ruiz & Pav. gilia	*Salsola tragus* L. prickly Russian thistle	
		Plantago patagonica Jacq. woolly plantain	*Stephanomeria pauciflora* (Torr.) A. Nelson brownplume wirelettuce	
		Lotus L. trefoil	*Amsinckia tessellata* A. Gray bristly fiddleneck	
		Linanthus dichotomus Benth. eveningsnow		

Table 6

Key Area 2				
Shrubs	**Grasses**	**Forbs**	**Forbs**	**Cacti**
Larrea tridentata (DC.) Coville creosote bush	*Bromus madritensis* L. compact brome	*Erodium cicutarium* (L.) L'Hér. ex Aiton redstem stork's bill	*Baileya multiradiata* Harv. & A. Gray ex A. Gray desert marigold	*Opuntia phaeacantha* Engelm. tulip pricklypear
Coleogyne ramosissima Torr. blackbrush	*Pleuraphis rigida* Thurb. ig galleta	*Stephanomeria pauciflora* (Torr.) A. Nelson brownplume wirelettuce	*Salsola tragus* L. prickly Russian thistle	
Ephedra nevadensis S. Watson Nevada jointfir	*Vulpia octoflora* (Walter) Rydb. sixweeks fescue	*Descurainia pinnata* (Walter) Britton western tansymustard	*Draba cuneifolia* Nutt. ex Torr. & A. Gray wedgeleaf draba	
Thamnosma montana Torr. & Frém. turpentinebroom		*Gilia* Ruiz & Pav. gilia	*Chenopodium* L. goosefoot	
Mirabilis laevis (Benth.) Curran var. *villosa* (Kellogg) Spellenb. wishbone-bush		*Anemone tuberosa* Rydb. tuber anemone	*Phacelia crenulata* Torr. ex S. Watson cleftleaf wildheliotrope	
Prunus fasciculata (Torr.) A. Gray desert almond		*Malacothrix* DC. desertdandelion	*Chamaesyce albomarginata* (Torr. & A. Gray) Small whitemargin sandmat	
		Machaeranthera bigelovii (A. Gray) Greene Bigelow's tansyaster	*Eriogonum deflexum* Torr. flatcrown buckwheat	
		Dichelostemma capitatum (Benth.) Alph. Wood bluedicks	*Sphaeralcea ambigua* A. Gray desert globemallow	
		Calochortus flexuosus S. Watson winding mariposa lily	*Delphinium parishii* A. Gray desert larkspur	
		Astragalus L. milkvetch		

Table 7

Key Area 28 (Desert Tortoise Transect)				
Shrubs	**Grasses**	**Forbs**	**Forbs**	**Cacti**
Baileya multiradiata Harv. & A. Gray ex A. Gray desert marigold	*Bromus madritensis* L. compact brome	*Erodium cicutarium* (L.) L'Hér. ex Aiton redstem stork's bill	*Lotus* L. trefoil	*Yucca brevifolia* Engelm. Joshua tree
Acamptopappus sphaerocephalus (Harv. & A. Gray ex A. Gray) A. Gray rayless goldenhead	*Vulpia octoflora* (Walter) Rydb. sixweeks fescue	*Androstephium breviflorum* S. Watson pink funnel lily	*Sphaeralcea ambigua* A. Gray desert globemallow	*Cylindropuntia acanthocarpa* (Engelm. & J.M. Bigelow) F.M. Knuth buck-horn cholla
Ephedra nevadensis S. Watson Nevada jointfir	*Dasyochloa pulchella* (Kunth) Willd. ex Rydb. low woollygrass	*Eriogonum* Michx. buckwheat	*Stephanomeria pauciflora* (Torr.) A. Nelson brownplume wirelettuce	*Yucca schidigera* Roezl ex Ortgies Mojave yucca
Larrea tridentata (DC.) Coville creosote bush	*Pleuraphis rigida* Thurb. big galleta	*Gilia* Ruiz & Pav. gilia	*Lepidium lasiocarpum* Nutt. shaggyfruit pepperweed	
Lycium andersonii A. Gray water jacket		*Machaeranthera bigelovii* (A. Gray) Greene Bigelow's tansyaster	*Eriogonum deflexum* Torr. flatcrown buckwheat	
		Descurainia pinnata (Walter) Britton western tansymustard	*Astragalus nuttallianus* DC. smallflowered milkvetch	
		Draba cuneifolia Nutt. ex Torr. & A. Gray wedgeleaf draba	*Chamaesyce albomarginata* (Torr. & A. Gray) Small whitemargin sandmat	
		Dichelostemma capitatum (Benth.) Alph. Wood bluedicks	*Machaeranthera canescens* (Pursh) A. Gray ssp. *canescens* hoary tansyaster	
		Eriogonum inflatum Torr. & Frém. desert trumpet	*Sphaeralcea ambigua* A. Gray ssp. *rugosa* Kearney desert globemallow	
		Aster L. aster		

Table 8

Key Area 29 (Desert Tortoise Transects)				
Shrubs	**Grasses**	**Forbs**	**Trees**	**Cacti**
Acamptopappus sphaerocephalus (Harv. & A. Gray ex A. Gray) A. Gray rayless goldenhead	*Bromus madritensis* L. compact brome	*Erodium cicutarium* (L.) L'Hér. ex Aiton redstem stork's bill	*Dichelostemma capitatum* (Benth.) Alph. Wood bluedicks	*Yucca brevifolia* Engelm. Joshua tree
Gutierrezia sarothrae (Pursh) Britton & Rusby broom snakeweed	*Dasyochloa pulchella* (Kunth) Willd. ex Rydb. low woollygrass	*Gilia* Ruiz & Pav. gilia	*Astragalus nuttallianus* DC. smallflowered milkvetch	*Cylindropuntia acanthocarpa* (Engelm. & J.M. Bigelow) F.M. Knuth var. *acanthocarpa* buckhorn cholla
Ephedra nevadensis S. Watson Nevada jointfir	*Vulpia octoflora* (Walter) Rydb. sixweeks fescue	*Androstephium breviflorum* S. Watson pink funnel lily	*Cryptantha* Lehm. ex G. Don cryptantha	*Cylindropuntia echinocarpa* (Engelm. & J.M. Bigelow) F.M. Knuth Wiggins' cholla
Encelia virginensis A. Nelson Virgin River brittlebush	*Pleuraphis rigida* Thurb. big galleta	*Linanthus dichotomus* Benth. eveningsnow	*Salsola tragus* L. prickly Russian thistle	
Lycium andersonii A. Gray water jacket	*Aristida purpurea* Nutt. purple threeawn	*Calochortus flexuosus* S. Watson winding mariposa lily	*Guillenia lasiophylla* (Hook. & Arn.) Greene California mustard	
Mirabilis laevis (Benth.) Curran var. *villosa* (Kellogg) Spellenb. wishbone-bush	*Sporobolus cryptandrus* (Torr.) A. Gray sand dropseed	*Coreopsis bigelovii* (A. Gray) H.M. Hall Bigelow's tickseed	*Draba cuneifolia* Nutt. ex Torr. & A. Gray wedgeleaf draba	
Prunus fasciculata (Torr.) A. Gray desert almond		*Baileya multiradiata* Harv. & A. Gray ex A. Gray desert marigold	*Chamaesyce albomarginata* (Torr. & A. Gray) Small whitemargin sandmat	
		Descurainia pinnata (Walter) Britton western tansymustard		

Table 9

Conclusion: *Standard 3 but making significant progress towards meeting the Standard.*

Habitat indicators for Standard 3 refer to vegetative composition, structure, distribution, productivity, and nutritional value. Vegetative conditions on the Snow Spring Allotment suitably reflect these attributes in the unburned portions. However, the burned areas of the allotment reflect these attributes at a diminished level as the species are present but at low densities and frequency.

While forage species are present, thermal cover for desert tortoise is low to non-existent in burn areas, but is recovering in all soil types. The recovery in former blackbrush sites is questionable. As of 2013 there is significant recruitment of perennial grass in much of these sites, but it is not expected to recover the structure formerly provided by blackbrush. Recovery is slow due to the low precipitation levels and low perennial production, and because burn areas were not rehabilitated after the fires. Studies show that there is some foraging and basking use of burn areas by tortoise from adjacent unburned habitat, but occupation of the burned area is short term and of limited distance. It is expected that thermal cover will recover if a historical fire regime can be maintained. As thermal cover increases it is expected tortoise will increase their use of the burn areas.

Figure 14. Considerable perennial grass establishmed in some burn areas in the summer of 2013.

The primary forage species for livestock since the 2005 fires is invasive annual grasses and other invasive species such as Russian thistle *(Salsola tragus)*, both of which provide suitable nutrition. The use of perennial grass species is limited, but slight to moderate use was recorded in the area represented by Key Area 2. In areas where use on perennial species is none to slight, the big galleta has grown large and woody and is less palatable than younger or frequently grazed plants.

Moderate to good species richness of native plant species, coupled with low levels of grazing use on perennials, indicate that there is sufficient ground cover (in the form of live vegetation and litter) to protect soils and perpetuate vegetative productivity while ensuring progress towards the historic vegetative structure and diversity.

In concert, the various vegetation habitats within the allotment provide escape terrain and some thermal cover, while short and tall statured woody species create perching/nesting habitat for the avian community. These habitats also offer a desirable environment for a variety of small mammals, reptiles and numerous songbirds.

PART 2. ARE LIVESTOCK A CONTRIBUTING FACTOR TO NOT MEETING THE STANDARDS?

Livestock are not a contributing factor to not meeting the standards. Failure to meet standards is the result of invasive annual grasses which develop abnormal fuel loading and continuity for the region. Increased fuel loading allows for catastrophic high severity fires which result in nearly

100% plant mortality. Recovery from fire in this arid ecosystem is extremely slow and will be unobtainable without effectively addressing the increased fire return interval and increased fire severity. However, even within a historic fire regime, the recovery of blackbrush will not occur given the current climate regime and these former blackbrush sites will continue to be dominated by invasive annuals. The introduction of non-native species must be considered for successful restoration.

PART 3. GUIDELINE CONFORMANCE REVIEW and SUMMARY

GUIDELINES for *SOILS* (Standard 1):

See Conclusion for Standard 1, and Part 2 above.

Current livestock grazing management practices conform to Guideline 1.1-1.3.

Upland management practices are maintained and promoted through adequate vegetative ground cover.

Riparian management practices are maintained and promoted through the use of exclosures. However, the application of this standard and guidelines are questionable due to the nature of the two spring systems which are highly modified and may not have adequate hydrology to maintain a riparian system with or without development.

GUIDELINES for *ECOSYSTEM COMPONENTS* (Standard 2):

See Conclusion for Standard 2, and Part 2 above.

<u>Uplands</u>

Current livestock grazing management practices conform to Guidelines 2.3 and 2.4.

<u>Riparian</u>

Current livestock grazing management practices conform to Guidelines 2.1 and 2.5-2.8. Riparian exclosures are in place to protect riparian vegetation from grazing. The vegetation is appropriate to the hydrology and geomorphology of the two spring systems, which are fully developed and not always inundated with water.

GUIDELINES for *HABITAT AND BIOTA* (Standard 3):

See Conclusion for Standard 3, and Part 2 above.

Current livestock grazing management practices conform to Guidelines 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6. The remaining three Guidelines will be met through analysis and subsequent management changes.

PART 4. MANAGEMENT PRACTICES TO CONFORM WITH GUIDELINES AND ACHIEVE STANDARDS

Best Management Practices

The following Best Management Practices would be added to the term grazing permit for Authorizations #:

1. Under the discretion of the BLM, the permittee will use multiple watering locations within each allotment, during any given grazing season; watering locations will be used in a manner which will yield maximum livestock distribution within each allotment; and herding will be used where and when deemed necessary. Watering locations will include wells, reservoirs, spring developments, and water hauls. All water use will be in accordance with Nevada State Law.

2. Allowable Use Levels on current year's growth of upland vegetation (grasses, forbs and shrubs) within the Snow Springs Allotment - during the authorized grazing use period - will not exceed 40%.

The BMPs would promote livestock distribution, within each allotment, to achieve a uniform utilization level. When coupled with the introduction of allowable use levels, it would aid in preventing overall negative impacts to the soil and plant resource accordingly.

In relation to grazing, there would be no additional terms and conditions needed for management practices to conform to guidelines to either make progress toward or to maintain achievement of the Standards for Rangeland Health.

The following terms and conditions, from the *Programmatic Biological Opinion for the Bureau of Land Management's Ely District Resource Management Plan* (File No. 84320-2008-F-0078) (RMP 2; pp. 132-133), would be included in the term grazing permits to minimize incidental take of desert tortoises that may result from the implementation of programs in general:

3. Prior to initiation of an activity within desert tortoise habitat, a desert tortoise awareness program shall be presented to all personnel who will be onsite, including but not limited to contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain information concerning the biology and distribution of the desert tortoise and other sensitive species, their legal status and occurrence in the project area; the definition of "take" and associated penalties; speed limits; the terms and conditions of this biological opinion including speed limits; the means by which employees can help facilitate

this process; responsibilities of workers, monitors, biologists, etc.; and reporting procedures to be implemented in case of desert tortoise encounters or noncompliance with this biological opinion.

4. Tortoises discovered to be in imminent danger during projects or activities covered under this biological opinion, may be moved out of harm's way.

5. Desert tortoises shall be treated in a manner to ensure they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. No desert tortoise will be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95ºF. Ambient air temperature will be measured in the shade, protected from wind, at a height of two inches above the ground surface. No desert tortoise will be captured if the ambient air temperature is anticipated to exceed 95ºF before handling and relocation can be completed. If the ambient air temperature exceeds 95ºF during handling or processing, desert tortoises will be kept shaded in an environment that does not exceed 95ºF and the animals will not be released until ambient air temperature declines to below 95ºF.

6. Desert tortoises shall be handled by qualified individuals. For most projects, an authorized desert tortoise biologist will be onsite during project activities within desert tortoise habitat. Biologists, monitors, or anyone responsible for conducting monitoring or desert tortoise field activities associated with the project will complete the Qualifications Form (Appendix D) and submit it to the USFWS for review and approval as appropriate. The USFWS should be allowed 30 days for review and response.

7. A litter-control program shall be implemented to minimize predation on tortoises by ravens drawn to the project site. This program will include the use of covered, raven-proof trash receptacles, removal of trash from project areas to the trash receptacles following the close of each work day, and the proper disposal of trash in a designated solid waste disposal facility. Appropriate precautions must be taken to prevent litter from blowing out along the road when trash is removed from the site. The litter-control program will apply to all actions. A litter-control program will be implemented by the responsible federal agency or their contractor, to minimize predation on tortoises by ravens and other predators drawn to the project site.

The following terms and conditions, also from the *Programmatic Biological Opinion* (RMP 7; pp. 138-140), would be included in the term grazing permits to minimize incidental take of desert tortoises that may result from permitting livestock grazing:

8. Livestock grazing may continue in desert tortoise habitat under the previous conditions established under the Caliente Management Framework Plan (MFP) Amendment until such time the term permit come up for renewal based on the existing permit expiration dates. Those allotments or portion of allotments in desert tortoise critical habitat will be a priority for review and issuance of term permit. During this interim period for grazing within desert

tortoise habitat outside the Mormon Mesa, Kane Springs, and Beaver Dam Slope ACECs: Livestock use may occur from March 1 to October 31, as long as forage utilization management levels are monitored and do not exceed 40% on key perennial grasses, shrubs and perennial forbs; and between November 1 and February 28/29, provided forage utilization management levels are monitored and do not exceed 50% on key perennial grasses and 45% on key shrubs and perennial forbs. If the utilization management levels are reached, livestock will be moved to another location within the allotment or taken entirely off the allotment. No livestock grazing will occur in desert tortoise critical habitat March 1 through October 31.

9. Livestock grazing in desert tortoise habitat shall be managed in accordance with the most current version of the Desert Tortoise Recovery Plan, including allotments or portions of allotments that become vacant and occur within desert tortoise critical habitat outside of ACECs. Grazing may continue in currently active allotments until such time they become vacant. BLM will work with the permittees of active allotments to implement changes in grazing management to improve desert tortoise habitat which may include use of water, salt and mineral licks, or herding to move livestock; changes in season of use and/or stocking rates; installation of exclusionary fences; reconfiguring pasture or allotment boundaries; and retiring pastures or allotments.

10. When BLM proposes to issue a term permit or other type of grazing authorization, BLM shall provide the following to the USFWS with their request to append the action to this biological opinion:

- An allotment-level assessment of current conditions (relative to listed species habitat); if unknown, a description of, and timeframe for actions BLM will implement to collect such information;
- a plan and schedule for monitoring listed species habitat on the allotment;
- a description of the grazing system and how it will minimize conflicts with listed species habitat;
- proposed actions or remedies (e.g., reduce utilization levels, reduce AUMs, limit season-of-use) if listed species habitat has not attained the goals for the allotment; and
- other information requested by the USFWS that is necessary to conclude activity-level consultation.

11. BLM and USFWS will cooperatively develop livestock grazing utilization levels or other thresholds, as appropriate for each of the listed species. These levels or thresholds shall be incorporated into each of the allotment term permit for those allotments that overlap with habitat for the listed species.

12. The permittee shall be required to take immediate action to remove any livestock that move into areas unavailable for grazing. If straying of livestock becomes problematic, BLM, in consultation with the USFWS, will take measures to ensure straying is prevented.

13. All vehicle use in listed species habitat associated with livestock grazing, with the exception of range improvements, shall be restricted to existing roads and trails. Permittees and

associated workers will comply with posted speed limits on access roads. No new access roads will be created.

14. Use of hay or grains as a feeding supplement shall be prohibited within grazing allotments. Where mineral and salt blocks are deemed necessary for livestock grazing management they will be placed in previously disturbed areas at least one half mile from riparian areas wherever possible to minimize impacts to flycatchers and listed fishes and their habitat. In some cases, blocks may be placed in areas that have a net benefit to tortoise by distributing livestock more evenly throughout the allotment, and minimizing concentrations of livestock that result in habitat damage. Water haul sites will also be placed at least one half mile from riparian areas.

15. Site visits shall be made to active allotments by BLM rangeland specialists and other qualified personnel, including USFWS biologists, to ensure compliance with the terms and conditions of the grazing permit. Any item in non-compliance will be rectified by BLM and permittee, and reported to the USFWS.

16. Livestock levels shall be adjusted to reflect significant, unusual conditions that result in a dramatic change in range conditions (e.g., drought and fire) and negatively impact the ability of the allotment to support both listed species and cattle.

In relation to grazing, there would be no additional terms and conditions needed for management practices to conform to guidelines to either make progress toward or to maintain achievement of the Standards for Rangeland Health.

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Scott R Abella. and Donovan J Craig. and Alexis A Suazo. "Outplanting but not seeding establishes native desert perennials." Native Plants Journal 13.2 (2012): 81-89. *Project MUSE*. Web. 3 Jan. 2013. <http://muse.jhu.edu/>.

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Specialists:

Alicia Styles – Wildlife Biologist	Date

Clinton Wertz – Soil, Water & Air Quality, Floodplains & Riparian	Date
Cameron Boyce – Noxious and Invasive Weeds	Date

Prepared by:

Cameron Boyce – Natural Resource Specialist	Date

Reviewed by:

Chris Mayer – Supervisory Rangeland Management Specialist	Date

I concur:

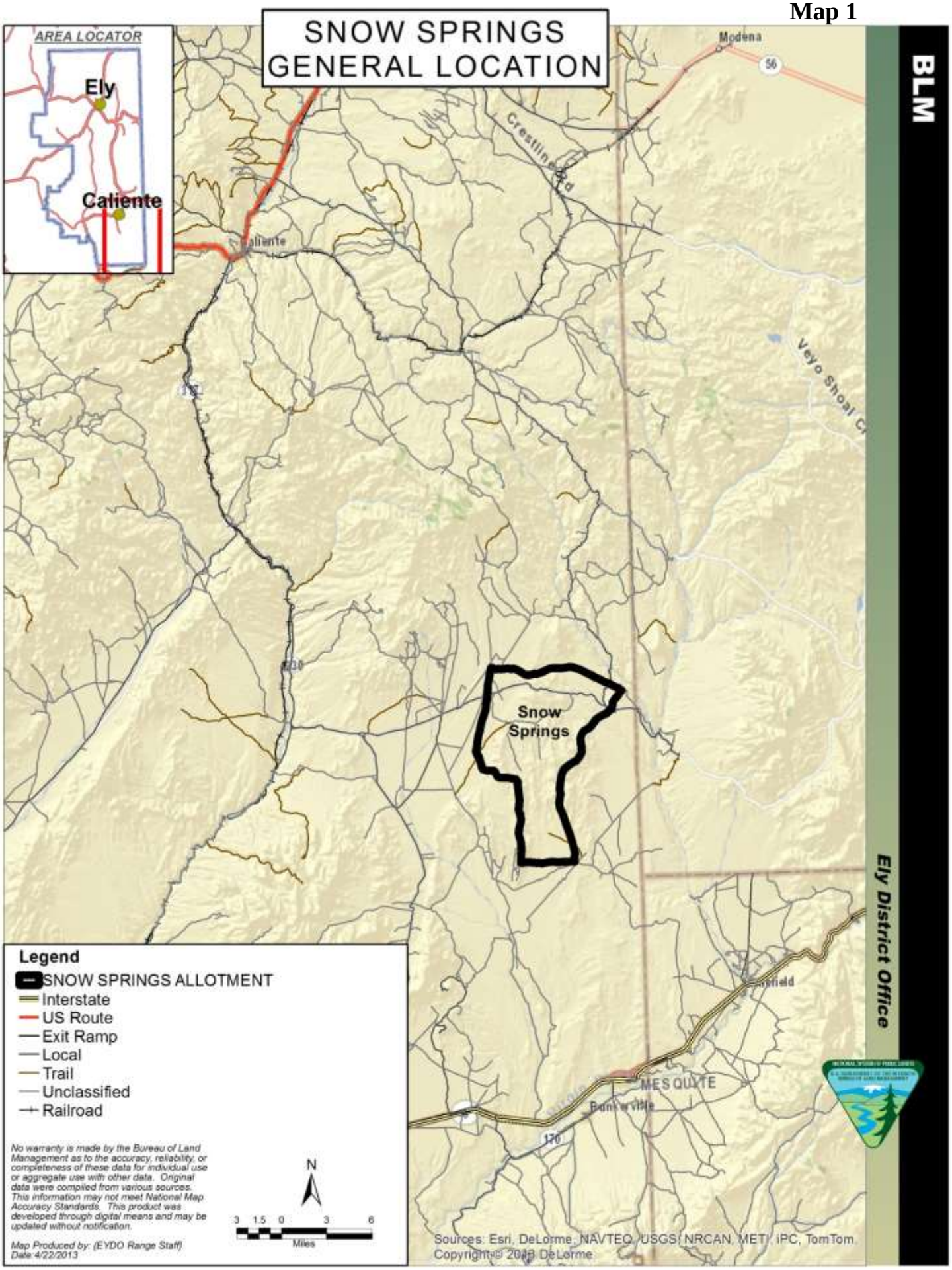
Victoria Barr – Caliente Field Manager	Date

APPENDIX A

(Standards Determination Document)

MAPS

Map 1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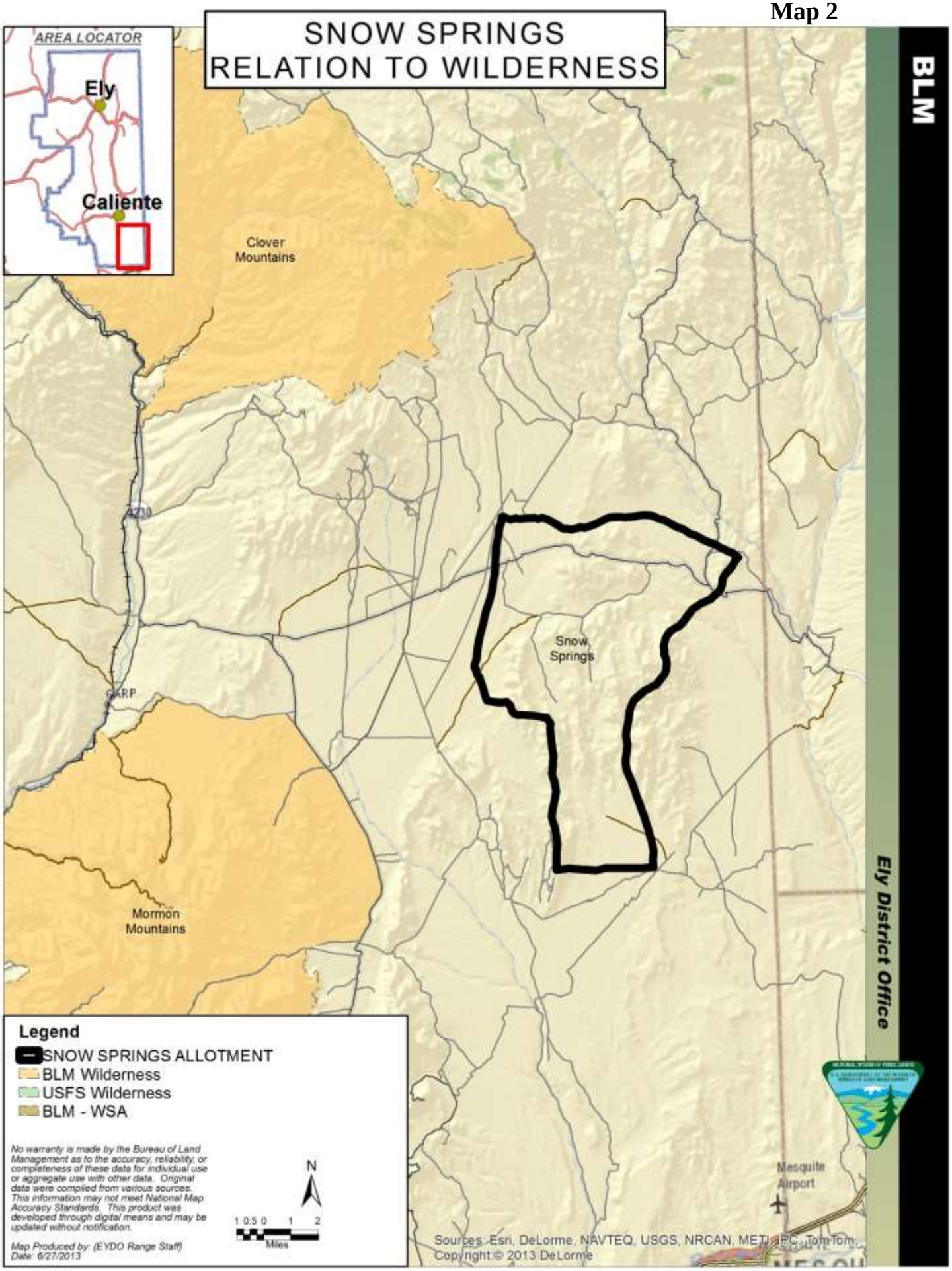
BLM
Ely District Office

Map 2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BLM Wilderness
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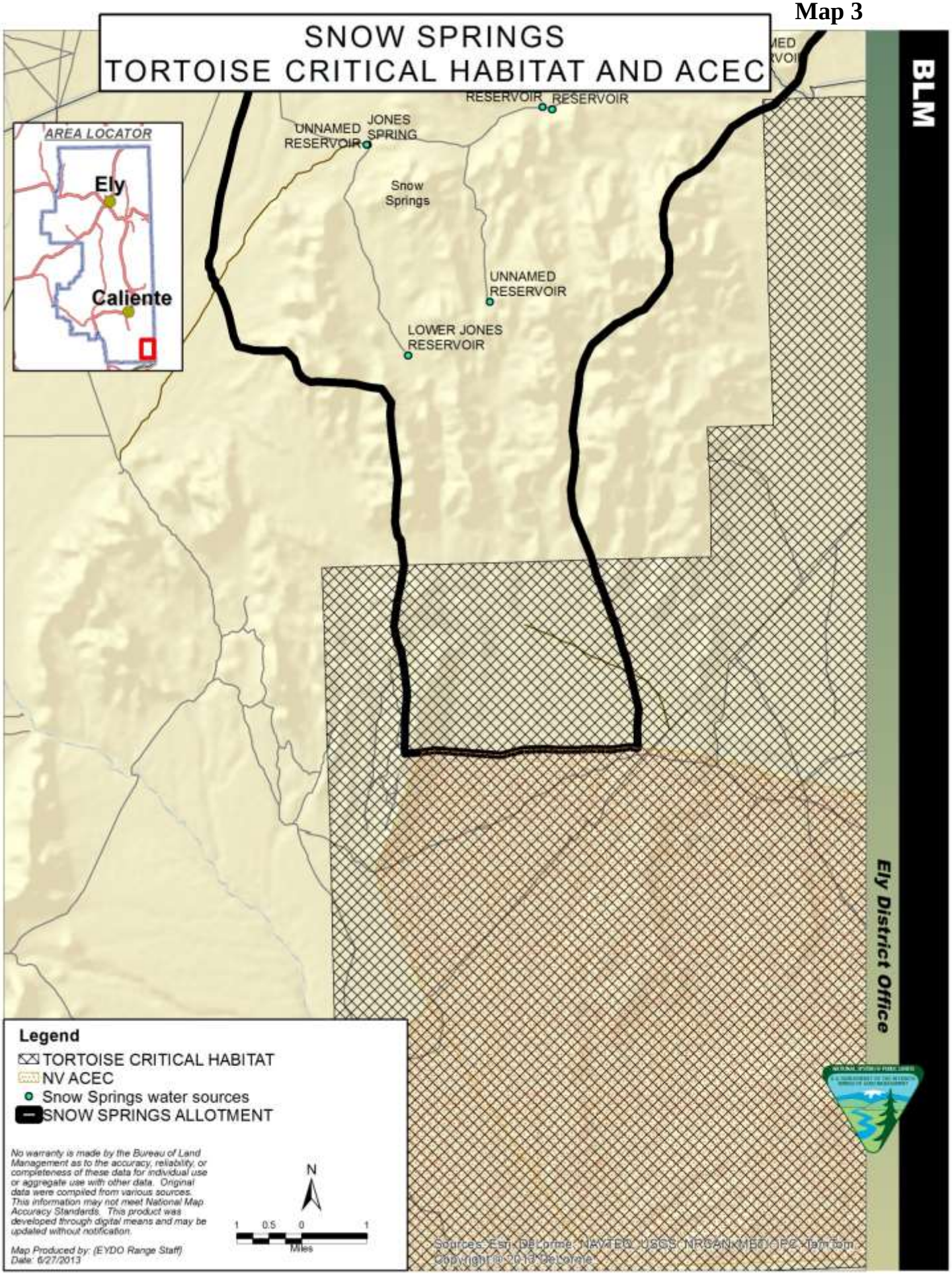
Map 3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NV ACEC
Snow Springs water sources
SNOW SPRINGS ALLOTMENT
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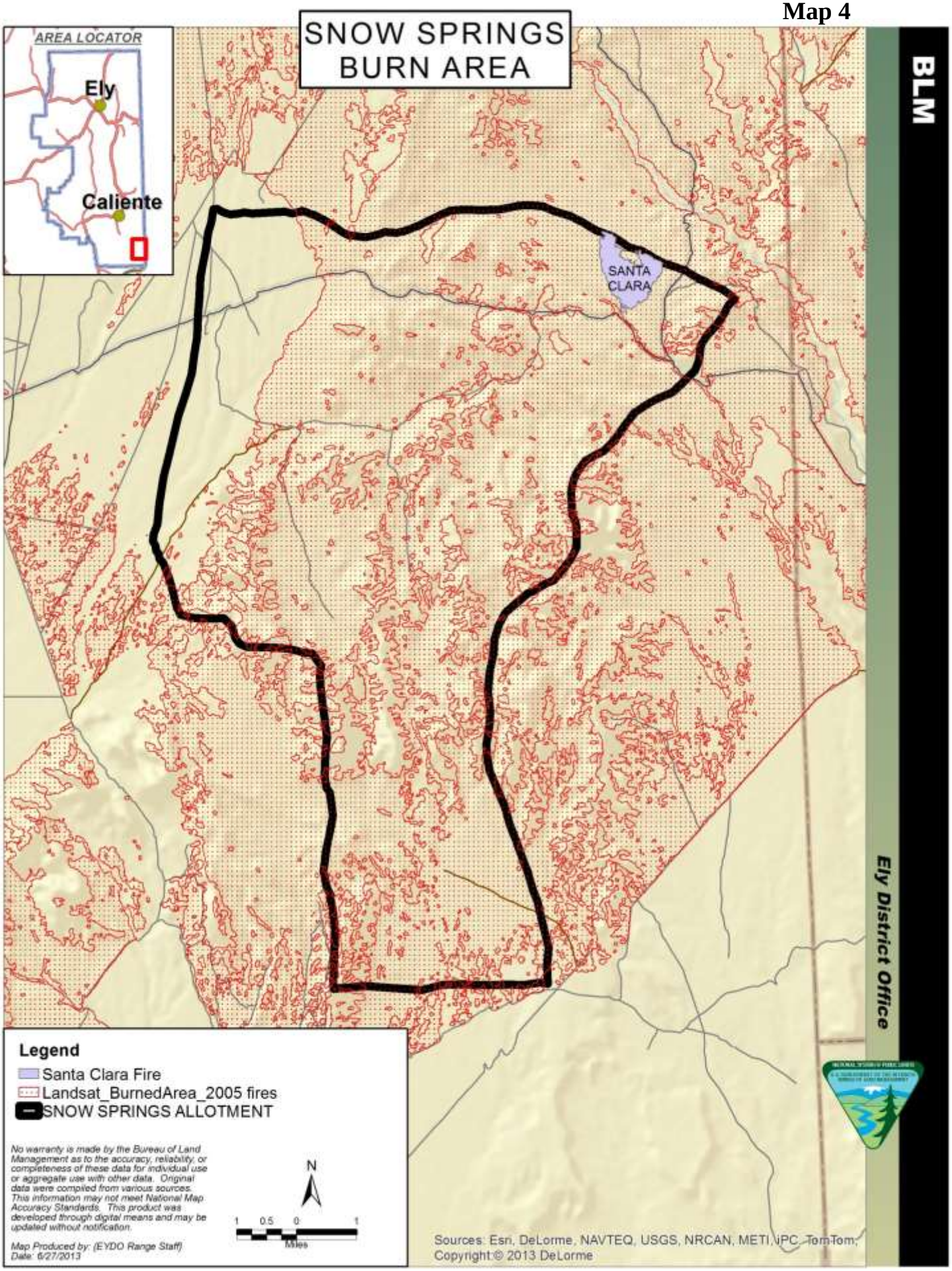
Map 4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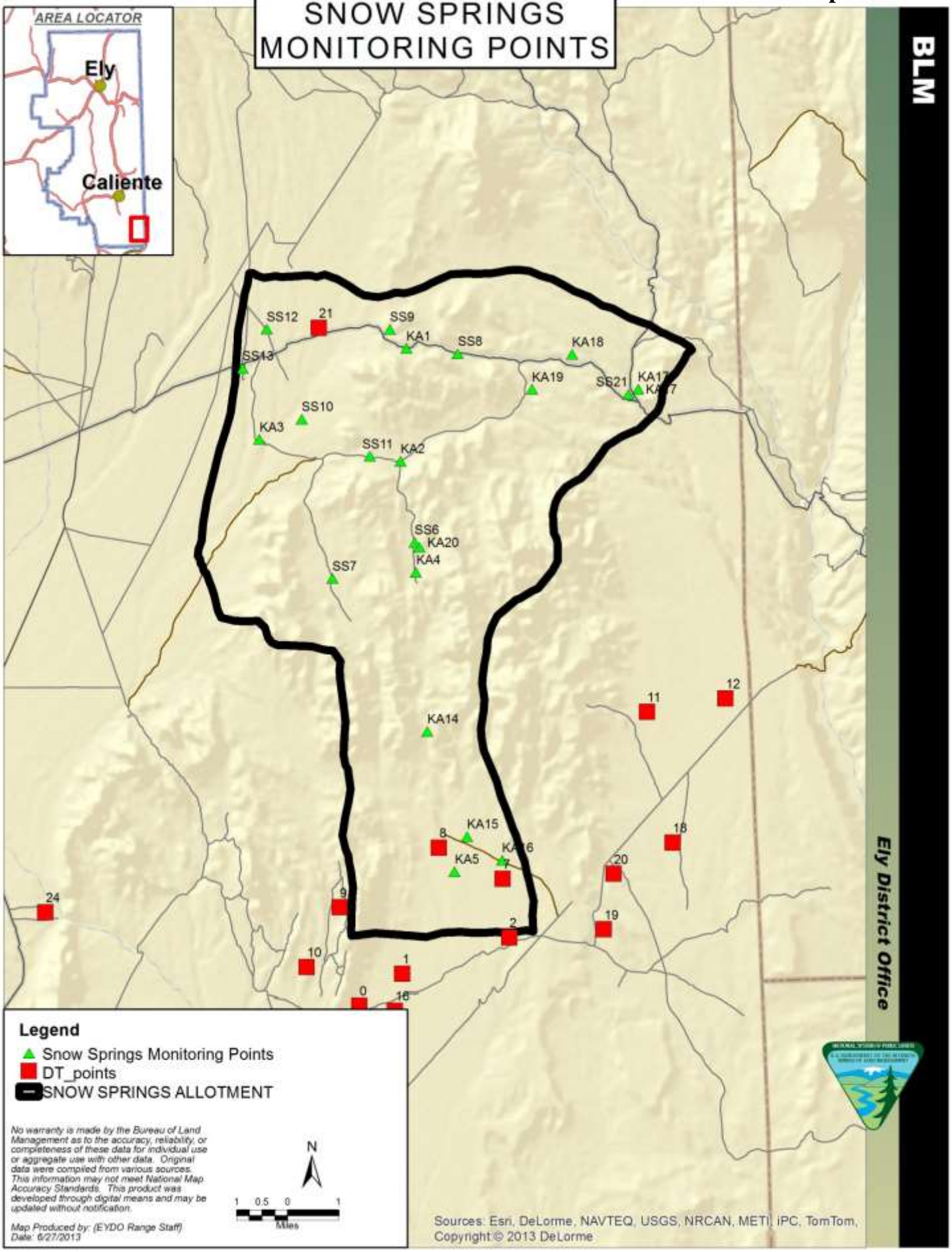
Map 5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Snow Springs Monitoring Points
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SNOW SPRINGS ALLOTMENT
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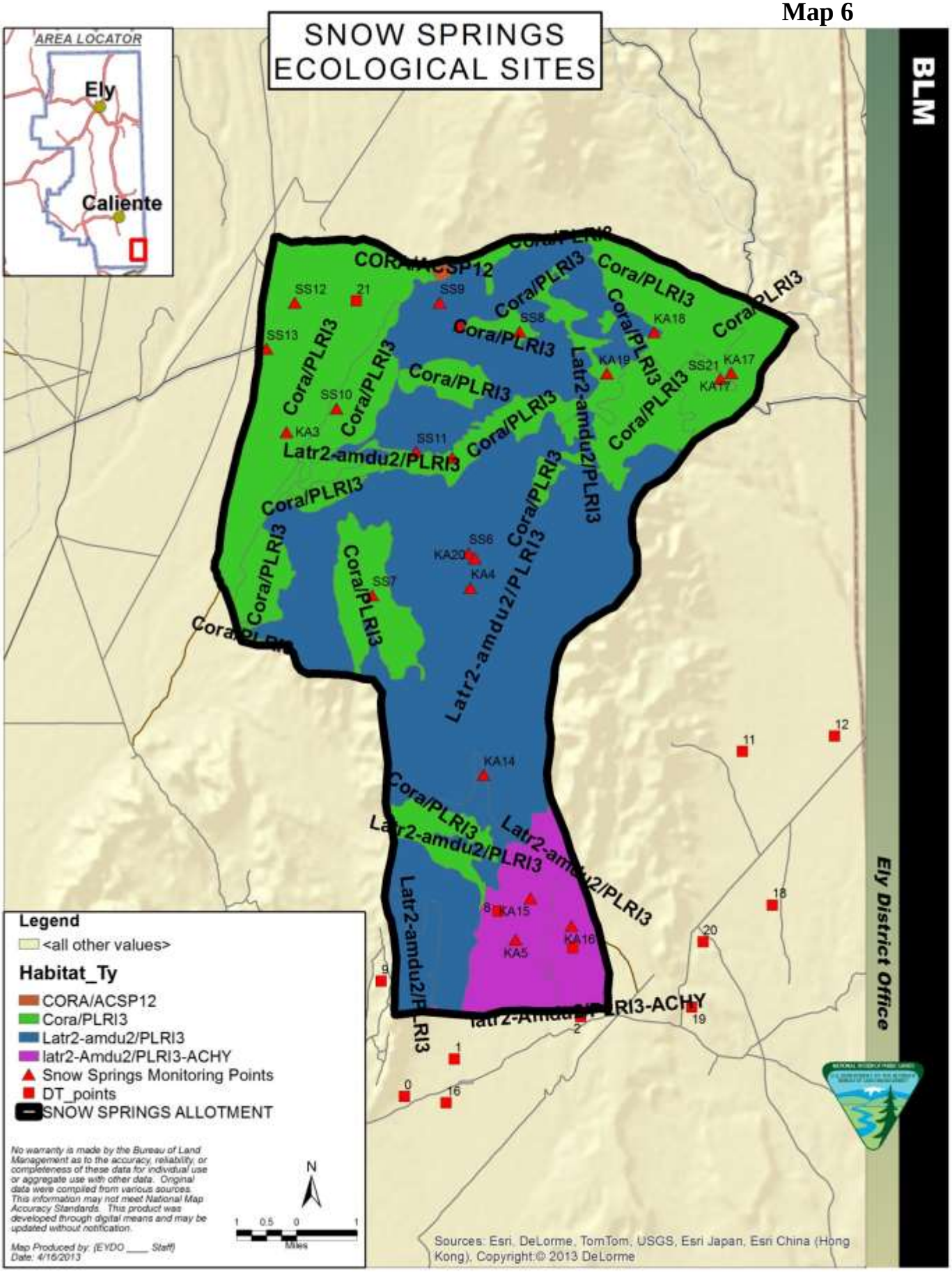
Map 6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Cora/PLRI3
Latr2-amdu2/PLRI3
latr2-Amdu2/PLRI3-ACHY
SS12
21
SS9
SS8
SS13
SS10
KA3
SS11
KA18
KA19
SS21
KA17
SS6
KA20
KA4
SS7
KA14
KA15
KA16
KA5
12
11
18
20
19
9
8
2
1
0
16
Legend
<all other values>
Habitat_Ty
CORA/ACSP12
Cora/PLRI3
Latr2-amdu2/PLRI3
latr2-Amdu2/PLRI3-ACHY
Snow Springs Monitoring Points
DT_points
SNOW SPRINGS ALLOTMENT
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Date: 4/16/2013
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1 0.5 0 1
Miles
Sources: Esri, DeLorme, TomTom, USGS, Esri Japan, Esri China (Hong Kong), Copyright:© 2013 DeLorme

APPENDIX B

(Standards Determination Document)

Table 1. Annual Livestock Grazing Use for authorization numbers 2703255, 2703383, 2705038, 2705071, 2705118, and 2705070 on the Snow Springs Allotment - as AUMs Licensed Each Year by Each Permittee; Total AUMs Licensed Each Year on the Allotment for All Five Permittees; and Total AUMs Licensed Each Year on Allotment as a Percent of the Total Active Use of All Five Permittees - from March 1, 2002 through February 28, 2012 (10 years).

Current Term Grazing Permit Information - - - - - - - - - - - - - Permittees/Season of Use/Active Use	Grazing Year (3/1 – 2/28)	Permittee Authorization #	AUMs Licensed Each Year (by permittee)	AUMs Licensed Each Year as % of Total Active Use (by permittee)	Total AUMs Licensed Each Year on Allotment (all permittees)	Total AUMs Licensed Each Year on the Allotment, as a % of the Total Active Use for All Four Permittees (3574 AUMs)
Snow Springs Allotment Season of Use =10/1 – 5/15 Active Use # 2703255 403 AUMs # 2703383 335 AUMs # 2705038 1239 AUMs #2705071 343 AUMs #2705118 970 AUMs # 2705070 284 AUMs **TOTAL 3574** AUMs	2002	# 2703255	NONUSE		527	15%
		# 2703383	NONUSE			
		# 2705038	250			
		#2705071	NONUSE			
		#2705118	232			
		# 2705070	45			
	2003	# 2703255	NONUSE		581	16%
		# 2703383	NONUSE			
		# 2705038	501			
		#2705071	71			
		#2705118	9			
		# 2705070	NONUSE			
	2004	# 2703255	NONUSE		734	21%
		# 2703383	NONUSE			
		# 2705038	501			
		#2705071	152			
		#2705118	NONUSE			
		# 2705070	81			
	2005	# 2703255	NONUSE		302	8%
		# 2703383	NONUSE			
		# 2705038	85			
		#2705071	128			
		#2705118	47			
		# 2705070	42			
	2006	# 2703255	NONUSE		685	19%
		# 2703383	NONUSE			
		# 2705038	528			
		#2705071	NONUSE			
		#2705118	157			
		# 2705070	NONUSE			
	2007	# 2703255	NONUSE		806	23%
		# 2703383	NONUSE			
		# 2705038	579			
		#2705071	NONUSE			
		#2705118	227			
		# 2705070	NONUSE			
	2008	# 2703255	107		914	26%
		# 2703383	NONUSE			
		# 2705038	536			
		#2705071	NONUSE			

		#2705118	192			
		# 2705070	79			
	2009	# 2703255	132		1047	29%
		# 2703383	154			
		# 2705038	535			
		#2705071				
		#2705118	180			
		# 2705070	46			
	2010	# 2703255	86		1520	43%
		# 2703383	276			
		# 2705038	698			
		#2705071	59			
		#2705118	251			
		# 2705070	150			
	2011	# 2703255	64		1700	48%
		# 2703383	212			
		# 2705038	659			
		#2705071	205			
		#2705118	334			
		# 2705070	226			
	2012	# 2703255			670	19%
		# 2703383	66			
		# 2705038	261			
		#2705071	113			
		#2705118	135			
		# 2705070	95			
AVERAGE						**26.7%**

APPENDIX III
(EA)

STANDARD TERMS AND CONDITIONS

1. Livestock numbers identified in the Term Grazing Permit are a function of seasons of use and permitted use. Deviations from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations are consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.

2. The authorized officer is requiring that an actual use report (Form 4130-5) be submitted within 15 days after completing your annual grazing use.

3. Grazing use will be in accordance with the Standards and Guidelines for Grazing Administration. The Standards and Guidelines have been developed by the respective Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR Subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration.

4. If future monitoring data indicates that Standards and Guidelines for Grazing Administration are not being met, the permit will be reissued subject to revised terms and conditions.

5. The permittee must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of any hazardous or solid wastes as defined in 40 CFR Part 261.

6. The permittee is responsible for all maintenance of assigned range improvements including wildlife escape ramps for both permanent and temporary water troughs.

7. When necessary, control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.

8. Livestock will be moved to another authorized pasture (where applicable) or removed from the allotment before utilization objectives are met or no later than 5 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.

9. The placement of mineral or salt supplements will be a minimum distance of 1/2 mile from known water sources, riparian areas, winterfat dominated sites, sensitive sites, populations of special status plant species, and cultural resource sites. Mineral and salt supplements will also be one mile from active sage-grouse leks. Placing supplemental feed (i.e. hay, grain, pellets, etc.) on public lands without authorization is prohibited.

APPENDIX IV

(EA)

WEED RISK ASSESSMENT

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Snow Springs Term Permit Renewal
Lincoln, Nevada

On March 22, 2011 a Noxious & Invasive Weed Risk Assessment was completed for the Snow Springs Term Permit Renewal in Lincoln County, NV. The proposed action is to renew the grazing term permit for grazing permittees on the Snow Springs Allotment. NEPA level is EA and grazing permit will be for ten years. A Standards Determination Document has been prepared as an in-depth analysis of grazing. An EA will be prepared and the proposed actions will be analyzed.

In addition to weed surveys in the field, the Ely District weed inventory data was consulted, which accurately reflected field observation. The following species are documented within the project area:

Brassica tournefortii	Sahara mustard
Onopordum acanthium	Scotch thistle
Tamarix spp.	Salt cedar

There is also a probability that include a list of undocumented weeds found in the area scattered along roads in the area. The project area was last inventoried for noxious weeds in 2008.

A list of species undocumented in the District follows:

Arctium minus	Common burdock
Bromus rubens	Red brome
Bromus tectorum	Cheatgrass
Ceratocephala testiculata	Bur buttercup
Elaeagnus angustifolia	Russian olive
Erodium circutarium	Filaree
Halogeton glomeratus	Halogeton
Marrubium vulgare	Horehound
Salsola kali	Russian thistle
Sysimbrium altissimum	Tumble mustard
Tragopogon dubius	Yellow salsify

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 Moderate (6) at the present time. Currently salt cedar is established in the project area. However, the spread of this species is limited to wet areas. Currently salt cedar can be found in the few wet areas located within the allotments, but is regularly treated by the permittees to prevent it dominance of the areas. Further spread is not a concern.

Scotch thistle has also been found within 3 miles of the project area. However, it is not prevalent and is easily identified and can be readily treated using spot treatments. The permittees are aware of this species and understands that it is in the best interest of their operation to remove this species upon detection, as has been done historically.

Sahara mustard *(Brassica tournefortii)* is establishing in the region. In this region, it was first detected in the south near Las Vegas and is moving north following the prevailing winds and the Interstate 15 corridor. It has now been observed moving outward from the City of Mesquite with unmanaged OHV use. Currently Sahara mustard is located on the southernmost boundary of the Snow Springs Allotment. This portion of the allotment has restricted grazing due to desert tortoise critical habitat and lack of improvements. Grazing would occur in this area only when Sahara mustard is undergoing vegetative growth. Turnout is in the early winter and cattle are removed before seed production. Cattle have been observed eating Sahara mustard early in its growth cycle, but preference appears to taper off as the plant matures. The germination period for Sahara mustard is normally in the early fall and winter months. Seed transport is primarily wind, but also travels by animal and vehicle; especially in wet conditions. Because of Sahara mustard's rapid growth and ability to quickly out compete native plants, control of this species if paramount. Even though the area has been heavily altered due to annual grasses and fire, it still has the ability to support native species. With establishment of Sahara mustard, this ability could be drastically reduced. Because grazing permittees tend to spend more time in this area than anyone else, they can provide valuable monitoring information and detection. Through education, it will be shown to be in the grazing operation's best interest to protect the resource and will be highly motivated to address the spread of Sahara mustard.

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 High (8) at the present time. This rating is primarily the result of Sahara mustard's ability to outcompete native plants in the Mojave desert region. However, this number is lower because the area has already been altered due to other non-native annuals. These annuals include red brome *(Bromus rubens)* and cheatgrass *(Bromus tectorum)* and are the species primarily responsible for the altered disturbance regime. Sahara mustard would simply result in a further decrease in native species. The effects of Sahara mustard on wildlife habitat are complex and not completely understood. The growth habit of Sahara mustard in this northern most portion of the Mojave Desert is not fully understood, and it may prove to not be as competitive with cooler temperatures.

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 Moderate (48). This indicates that the project can proceed as planned as long as the following measures are followed:

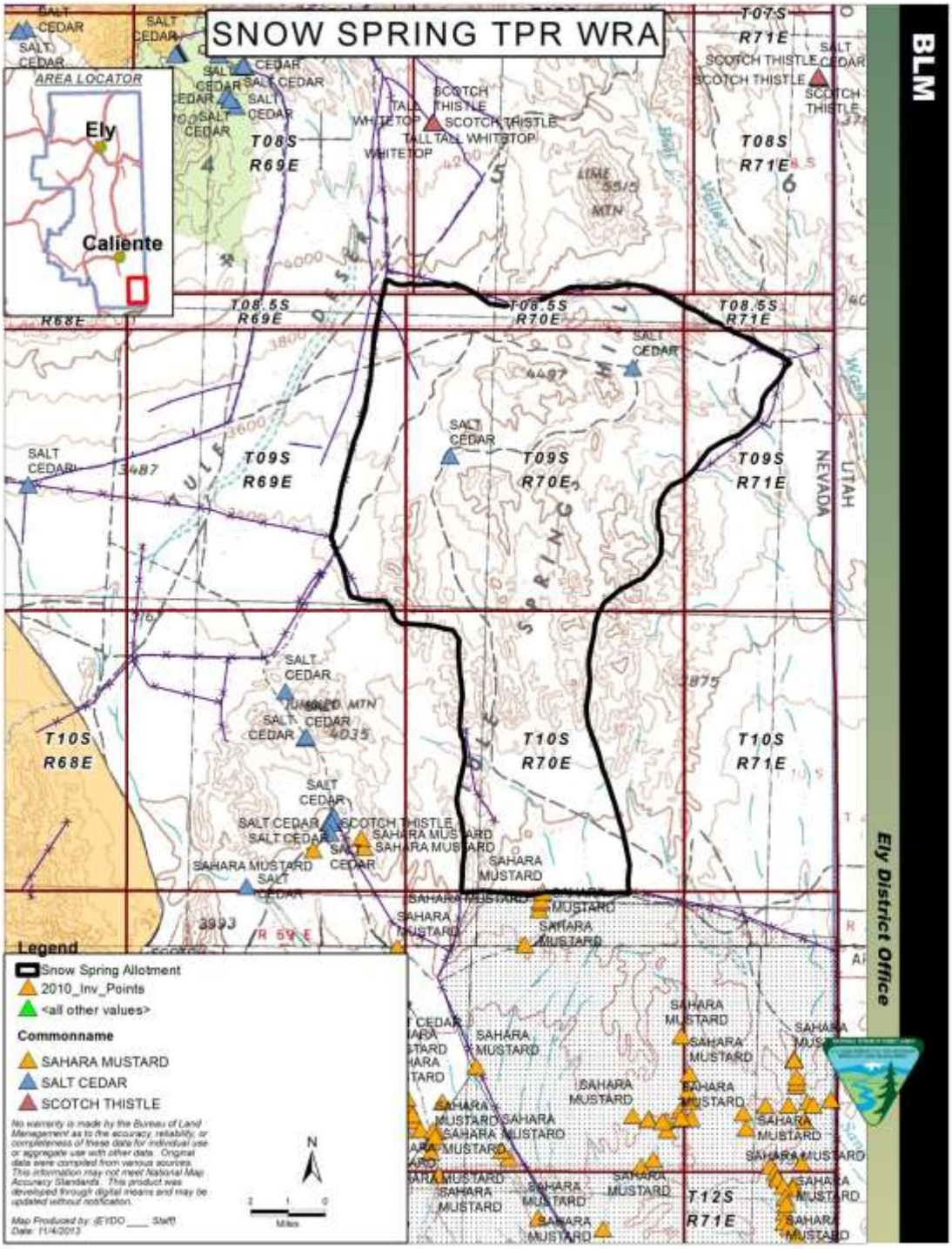
- Continue to use integrated weed management to treat weed infestations and use principles of integrated pest management to meet management objectives and to reestablish resistant and resilient native vegetation communities.
- Develop weed management plans that address weed vectors, minimize the movement of weeds within public lands, consider disturbance regimes, and address existing weed infestations.
- 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.
- When managing in areas of special status species, carefully consider the impacts of the treatment on such species. Wherever possible, hand spraying of herbicides is preferred over other methods.
- Control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.
- 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 entering public lands, the contractor, operator, or permit holder will provide information and training regarding noxious weed management and identification to all personnel who will be affiliated with the implementation of the project. The importance of preventing the spread of weeds to un-infested areas and importance of controlling existing populations of weeds will be explained.

Reviewed by: _____ _____

Cameron Boyce
Caliente Field Office Noxious & Invasive Weeds Coordinator

Date

Map


SNOW SPRING TPR WRA
AREA LOCATOR
Ely
Caliente
BLM
Ely District Office
T07S R71E
T08S R69E
T08S R71E
T08.5S R69E
T08.5S R70E
T08.5S R71E
T09S R69E
T09S R70E
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T10S R71E
T12S R71E
NEVADA
UTAH
SALT CEDAR
SCOTCH THISTLE
SAHARA MUSTARD
TALL WHITETOP
Legend
Snow Spring Allotment
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SAHARA MUSTARD
SALT CEDAR
SCOTCH THISTLE
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Map Produced by: (EYDO ____ Staff)
Date: 11/4/2013
N
Miles

APPENDIX V

(EA)

Wildlife and Plant Species

Wildlife & Plants for Snow Springs Allotment 7/8/14
Highlighted species are BLM Sensitive Species in Nevada. Data accessed from Ely RMP, NV Natural Heritage Data, and NDOW Diversity Data.

The allotment contains the Beaver Dam Slope critical habitat unit for desert tortoise as well as general habitat for desert tortoise. The allotment does not contain any ACECs. Desert tortoise triangular transects (surveyed in 1980s to 1990) estimated densities from very low to low.

Federal T&E Species
Agassiz's desert tortoise (*Gopherus agassizii*) federally threatened

BLM SSL
desert bighorn sheep (*Ovis canadensis nelsoni*) occupied habitat
pallid bat (*Antrozous pallidus*)
California myotis (*Myotis californicus*)
Fringed myotis (*Myotis thysanodes*)
Brazilian free-tailed bat (*Tadarida brasiliensis*)
Western pipistrelle (*Pipistrellus hesperus*)

General wildlife
Mule deer (*Odocoileus hemionus*) general habitat

Migratory birds
The following data reflect survey blocks and/or incidental sightings of bird species within the project area boundaries from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within the project area boundaries. These data are not comprehensive, and additional species not listed here may be present within the project area boundary. A survey block was located within the project area.

Western burrowing owl (*Athene cunicularia*)
Red-tailed hawk (*Buteo jamaicensis*)
Turkey vulture (*Cathartes aura*)
Common raven (*Corvus corax*)
Say's phoebe (*Sayornis saya*)
Ash-throated flycatcher (*Myiarchus cinerascens*)
Brewer's sparrow (*Spizella breweri*)
Black-throated sparrow (*Amphispiza bilineata*)
Cactus wren (*Campylorhynchus brunneicapillus*)
Costa's hummingbird (*Calypte costae*)
Loggerhead shrike (*Lanius ludovicianus*)
Northern rough-winged swallow (*Stelgidopteryx serripennis*)
Mourning dove (*Zenaida macroura*)
Phainopepla (*Phainlopepla nitens*)
Verdin (*Auriparus flaviceps*)
Wilson's warbler (*Wilsonia pusilla*)
House finch (*Carpodacus mexicanus*)

Black-tailed gnatcatcher (*Polioptila melanura*)

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