BLM

Ely District Record of Decision and Approved Resource Management Plan

August 2008

COOPERATING AGENCIES:

Great Basin National Park
Humboldt-Toiyabe National Forest
Nellis Air Force Base
Nevada Department of Transportation
Nevada Division of Minerals
Nevada Department of Wildlife
Nevada State Historic Preservation Office

Lincoln County
Nye County
White Pine County
Duckwater Shoshone Tribe
Ely Shoshone Tribe
Moapa Band of Paiutes
Yomba Shoshone Tribe

BLM Mission Statement

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/NV/EL/PL-GI08/25+1793

Cover Photo: Cottonwood Canyon – Fortification Range Wilderness, Lincoln County, Nevada. Ely BLM photo. May, 2002.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely District Office
HC33 Box 33500 (702 N. Industrial Way)
Ely, Nevada 89301-9408
http://www.blm.gov/nv/st/en/fo/ely_field_office.html

TAKE PRIDE IN AMERICA

In reply refer to:
1617 (040)

AUG 20 2008

Dear Interested Party:

The Ely Approved Resource Management Plan (RMP) integrates all resource management activities for the Ely District Office into a single, unified land use plan that will replace three existing land use plans and related amendments addressing the management of approximately 11.5 million acres of public lands and minerals in White Pine, Lincoln, and portions of Nye counties, in eastern Nevada. In accordance with the Federal Land Policy and Management Act and the National Environmental Policy Act (NEPA), the Bureau of Land Management (BLM) has prepared the attached Record of Decision (ROD) for the Ely RMP and for the Ely District Proposed RMP/Final Environmental Impact Statement (EIS).

The ROD was prepared in accordance with Council on Environmental Quality Regulations as published in the Code of Federal Regulations (40 CFR 1505.2), which requires a concise document linking the final decision to the analysis presented in the Proposed RMP/Final EIS. Based upon comments received during the protest period, some minor editorial modification have been made in preparing the Approved RMP, These modifications provide further clarification of some of the decisions/maps.

A 30-day protest period was provided on the land use plan decisions contained in the Proposed RMP/Final EIS in accordance with 43 CFR Part 1610.5-2. Six protest letters were received from five protesting parties; two of the protesting parties were determined to have standing as defined in the BLM Land Use Planning Handbook. After careful consideration of all points raised in those protests, the BLM Director concluded that the responsible planning team and decision-makers followed all applicable laws, regulations, policies, and pertinent resource considerations in developing the plan. All protesting parties received a response addressing their concerns from the BLM Director.

Three letters received were determined to not have standing under the regulations at 43 CFR 1610.5-1. One letter received identified a mapping error and potentially unnecessary management direction for the Hendry's Creek/Rock Animal Corral Area of Critical Environmental Concern (ACEC) that caused the BLM to reconsider its proposed management. Based upon that review, BLM has determined that the area does not require special management as an ACEC to protect its relevant and important values. Protection can be achieved by maintaining the current designation as the Rock Animal Corral archaeological site with restrictions on fluid and solid mineral leasing, locatable minerals, and mineral materials sales on the 160-acre site.

The BLM provided the Governor of Nevada with a 60-day Governor's Consistency Review as provided by the regulations. No specific inconsistencies with state or local plans, policies, or programs were noted from the review.

In accordance with Section 7 of the Endangered Species Act, the U.S. Fish and Wildlife Service (USFWS) issued a programmatic Biological Opinion. The USFWS Biological Opinion has been included as an appendix to the ROD/Approved RMP.

The attached ROD serves as the final decision for the land use management decisions described in the attached Approved RMP, and these planning decisions become effective on the date the ROD is signed by the State Director. No further administrative remedies are available at this time for these land use plan decisions. Please note that some of these planning decisions will require the preparation of detailed, project-level NEPA analysis prior to on-the-ground implementation. Future public involvement opportunities (appeal opportunities) will be provided at that time.

One decision has been addressed to a sufficient level of detail in the Proposed RMP/Final EIS process to be implemented, over time, without further NEPA analysis. This is considered to be a new "implementation decision" (see page 3 of the ROD), and will be implemented as funding and staff are available. A separate appeal opportunity for this selected decision is being provided at this time. The appeal period will close 30 days from the date the Notice of Availability of the ROD/Approved RMP appears in the *Federal Register*. This date also will be announced via local news release, and/or individual mailings. Please review the ROD carefully for a more detailed discussion of the appeal process.

Additional hard copies of related planning documents, including the ROD/Approved RMP may be obtained at the address above. Electronic copies of the documents also may be obtained via the internet at *http://www.blm.gov/nv/st/en/fo/ely_field_office.html*.

We appreciate your help in this planning effort and look forward to your continued participation as the Approved RMP is implemented. For additional information or clarification regarding the attached document or the planning process, please contact Jeff Weeks at (775) 289-1800 or email at *Jeff_Weeks@nv.blm.gov*.

Sincerely,

John Ruhs
District Manager
Ely District Office

ELY DISTRICT RECORD OF DECISION

AUGUST 2008

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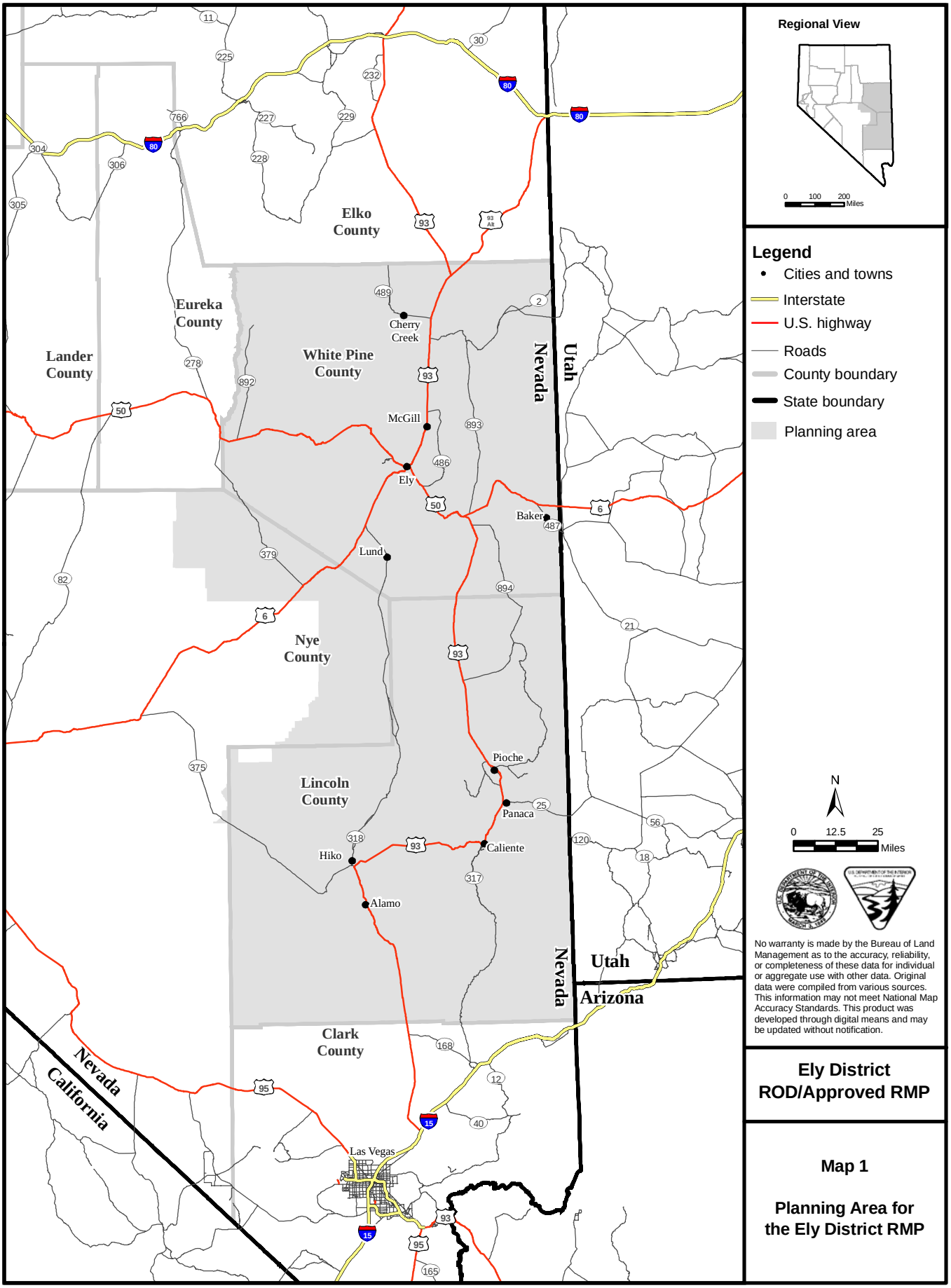
INTRODUCTION

This Record of Decision (ROD) approves the attached Resource Management Plan (RMP) to manage the public lands administered by the Bureau of Land Management's (BLM's) Ely District Office. The Ely District Approved RMP is based on that described as the Proposed RMP in the November 2007 Ely Proposed RMP/Final Environmental Impact Statement (EIS) (U.S. Department of the Interior [USDI]-BLM 2007) with exceptions as noted in this ROD. The background and rationale for approving the proposed decisions contained in the Proposed RMP, as well as clarifications and modifications made to address protests to the Proposed RMP are described in this ROD. The attached Approved RMP constitutes the final decisions.

The planning area for the Ely RMP consists of the geographic area within which the decisions contained in the Approved RMP would apply (**Map 1**). The planning area includes all lands regardless of jurisdiction; however, the approved RMP decisions only apply to public lands administered by the Ely District Office in Lincoln, White Pine, and a portion of Nye counties in east-central Nevada. The decision area also includes those private lands on which there is "split estate," and BLM continues to manage surface or subsurface interests. The planning area measures approximately 230 miles (north-south) by 115 miles (east-west). The decision area is managed as a single administrative unit. **Table 1** summarizes the land administration/ownership in the planning area.

Table 1
Planning Area Land Administration/Ownership Status

Administration/Ownership	Acres
U.S. Department of the Interior	
Bureau of Land Management	11,463,419
National Park Service	77,128
Bureau of Indian Affairs	73,555
Fish and Wildlife Service	282,995
U.S. Department of Agriculture	
Forest Service	825,136
U.S. Department of Defense	778,010
State of Nevada	34,131
Private	392,978
Total	13,927,352



Ely District ROD/Approved RMP

Map 1

Planning Area for the Ely District RMP

DECISION

The decision is hereby made to approve the attached RMP for the Ely District BLM. This plan was prepared under the regulations implementing the Federal Land Policy and Management Act of 1976 (43 Code of Federal Regulations Part 1600). An EIS was prepared for this RMP in compliance with the National Environmental Policy Act (NEPA) of 1969. The Approved RMP is based upon that described in the Ely District Proposed RMP/Final EIS published in November 2007. Specific management decisions for public lands and minerals under the jurisdiction of the Ely District are presented in the section titled "Resource Management Plan." This ROD serves as the final decision for the land use plan decisions described in the Approved Plan and becomes effective on the date this ROD is signed. No further administrative remedies are available at this time for these land use plan decisions.

Appeal Procedures for Implementation Decisions

The decision identifying designated routes of travel for motorized vehicles in Duck Creek Basin (Management Action TM-3) is an implementation decision and appealable to the Interior Board of Land Appeals under 43 Code of Federal Regulations Part 4, upon approval of this ROD. This decision is contained in the Travel Management section of the Approved RMP. Any party adversely affected by the BLM's decision(s) to identify, evaluate, define, delineate, and/or select specific routes as available for motorized use within designated areas of travel as set forth in the Ely RMP may appeal within 30 days of publication of the Notice of Availability, in accordance with the U.S. Department of the Interior's appeal regulations (43 Code of Federal Regulations Part 4). The appeal should state the specific route(s) by section, township, and range on which the decision is being appealed, and be submitted to the Ely District Manager at the following address:

Bureau of Land Management
Ely District Office
HC 33 Box 35500
Ely, Nevada 89301-9408

The appeal may include a statement of reasons at the time the notice of appeal is filed, or the statement of reasons may be filed within 30 days of filing the appeal. A copy of the notice of appeal, statement of reasons, and all supporting documentation also must be sent to the following address:

Regional Solicitor, Pacific Southwest Region
U.S. Department of the Interior
2800 Cottage Way
Room E-2753
Sacramento, CA 95825-1890

If a statement of reasons is filed separately from the notice of appeal, it also must be sent to the following location within 30 days after the notice of appeal was filed:

Board of Land Appeals
Office of Hearings and Appeals
4015 Wilson Boulevard
Arlington, VA 22203

PROPOSED PLAN AND ALTERNATIVES

Five alternatives, including a no action alternative, were analyzed in detail in the Proposed RMP/Final EIS. Alternatives were developed to include different combinations of management direction to address issues and resolve conflicts among resources and resource uses. In addition to addressing issues, alternatives must meet the purpose and need stated for the RMP, must not be remote or speculative, and must be technically and economically practical or feasible. Each alternative was a complete land use plan that provided a framework for multiple use management of the full spectrum of resources, resource uses, and resource programs within the planning area. Under all alternatives except Alternative D, the Ely District Office would manage the public lands in accordance with all applicable laws, regulations, and BLM policy and guidance, and to meet the Resource Advisory Council standards for rangeland health. As noted in the discussion below, Alternative D was not consistent with all existing laws, regulations, and policies.

Alternatives Analyzed in Detail

The **Proposed RMP** was initially presented as Alternative E (the Preferred Alternative) in the Draft RMP/EIS (July 2005) (BLM 2005). The Proposed RMP provides a framework for vegetation management on the basis of currently available scientific knowledge to modify vegetation communities in a manner to enhance ecological health and resilience. The Proposed RMP balances the need to restore, enhance, and protect resources, with the public's desire to provide for the production of food, fiber, minerals, and services on public lands. This would be accomplished within the limits of an ecological system's ability to sustainably provide these products and services within the constraints of various laws and regulations.

Alternative A is the continuation of existing management in the decision area and comprises the "No Action Alternative." This alternative continues present management based on existing land use plans and other decision documents. Direction contained in existing laws, regulation, and policy also continued to be implemented. Under Alternative A, resources, resource uses, and sensitive habitats receive management emphasis (methods and mix of multiple use management of public land) at present levels. In general, most activities would be analyzed on a case-by-case basis, and few uses would be limited or excluded as long as land health standards could be met.

Alternative B emphasizes the maintenance of functioning and healthy ecological systems and the restoration of ecological systems and their historic mosaic patterns that have been degraded or altered. Commodity production is constrained to protect resources and systems displaying healthy ecological processes or to accelerate improvement in those areas that did not. Production of food, fiber, minerals, and

services are more constrained than in the other alternatives, and in some cases and some areas, uses are excluded to protect sensitive resources.

Alternative C emphasizes commodity production and production of food, fiber, minerals, and services, including provisions for several types of recreation. Under this alternative, constraints on commodity production for the protection of sensitive resources are the least restrictive possible within the limits defined by law, regulation, and BLM policy, including the Endangered Species Act, cultural resource protection laws, and wetland preservation. In this alternative, constraints to protect sensitive resources would be implemented in specified geographic areas rather than across the entire Ely RMP planning area.

Alternative D excludes all permitted, discretionary uses of the public lands including livestock grazing, mineral sale or leasing, lands and realty actions (such as disposals, leases, and rights-of-way), recreation uses requiring permits, etc. Some components of Alternative D could be implemented through the discretionary authority of the Ely District Manager or the Nevada State Director, while others would require action by the Secretary of the Interior or new legislation by Congress. This alternative was included in the Proposed RMP/Final EIS in response to scoping comments for the RMP, which requested the elimination of certain uses of the public lands in the RMP planning area. It set a baseline for the comparison of impacts from management actions included in other alternatives and allowed for the analysis of a range of management actions in the EIS. This alternative allows no commodity production and includes management actions necessary to maintain or enhance resources and protect life and property.

Environmentally Preferable Alternative

The Proposed RMP, as the agency Preferred Alternative and Proposed Action, is considered the environmentally preferable alternative based on a balance between the human (social and economic) environment as well as addressing the need to restore, enhance, and protect the natural environment.

MANAGEMENT CONSIDERATIONS

Rationale for the Decision

The decision to approve the Proposed Plan takes in account statutory, regulatory, and national policy considerations. The decision also was based on review and comment of public, industry, federal, tribal, state and local governments and agencies, as well as the 14 cooperating agencies that participated in the planning process. BLM has determined that the Proposed Plan (as modified in consideration of public and agency comments and public protest) is the most consistent with its legal mandates while incorporating the best management practices identified through agency and public consultation. Through the review process, all practicable methods to reduce environmental harm were incorporated into the Approved Plan. The Approved Plan best addresses the diverse needs within the Planning Area within a comprehensive framework for the management of public lands.

MITIGATION MEASURES

The Approved RMP includes all practical measures to avoid or minimize environmental impacts. Management actions identified in the Approved RMP were developed based on best management practices (Appendix A of the Approved RMP) and agency input, including the Biological Opinion (U.S. Fish and Wildlife Service 2008) (Appendix D of the Approved RMP), to ensure compliance with applicable laws and standards. The Ely Proposed RMP/Final EIS identified five potential mitigation measures in addition to the standard operating procedures and best management practices included in the RMP (Section 4.29 of the Proposed RMP/Final EIS). Three of the five proposed mitigation measures were selected for adoption and included in the Approved Plan and two proposed mitigation measures were not carried forward as they were already addressed more broadly under other management actions included in the Approved Plan. The mitigation measures adopted into the Approved RMP are Proposed Mitigation Measure 1, modified and included under Management Action FM-7; Proposed Mitigation Measure 2, included in Management Action REC-4; and Proposed Mitigation Measure 5, Option 1, included under Management Action LR-24. These approved mitigation measures are consistent with BLM authority. Additional measures to avoid or mitigate environmental impacts associated with future actions may be developed during NEPA analysis for those actions at the planning and project stages.

PLAN MONITORING

The BLM planning regulations (43 Code of Federal Regulations 1610.4-9) require the monitoring of RMPs on a continual basis with a formal evaluation done at periodic intervals. All BLM Nevada land use plans are monitored and formally evaluated at 5-year intervals after the plan is approved. In some cases, formal evaluations may occur more frequently than every 5 years, if appropriate. Monitoring plan decision implementation is an essential component of natural resources management because it provides information on the relative success of RMPs and specific management strategies. Implementation monitoring will be completed annually and will be documented in a tracking log or report, which will be available to the public. Effectiveness monitoring strategies will be developed as allowable uses and management actions are implemented

Monitoring for each resource program is outlined in the “Management Decisions” section of the Approved Plan. Monitoring also is an integral part of adaptive management and is a key component to achieving the management goals and objectives of the RMP. Tracking the progress of management actions and measuring changes resulting from these activities is important in either determining success or the need for a different management approach. Monitoring results will provide information to determine whether objectives have been met, and whether to continue or modify the management actions. Findings obtained through monitoring, together with research and other new information will provide a basis for adaptive management changes. Within this framework, if monitoring shows land use plan actions or best management practices are not effective, the BLM may modify or adjust management without amending or revising the plan if we are in conformance with the Approved Plan. In those cases where the BLM considers implementing actions that will alter or not conform to the overall direction of the Approved Plan, the BLM will prepare a plan amendment or revision and environmental analysis of appropriate scope.

PUBLIC INVOLVEMENT

Public participation for this planning effort began with the publication of the Federal Register Notice of Intent (Federal Register Vol. 68 No. 27, pages 6770-6771, Monday, February 10, 2003) to prepare a RMP. With this Notice of Intent, individuals and organizations were invited to submit comments in writing to the BLM and cooperating agencies were invited to participate in the planning process.

Several governmental agencies and tribes agreed to serve as cooperating agencies and had varying levels of involvement in the development of the Draft RMP/EIS. These agencies and tribes continued to be involved through preparation of the Proposed RMP/Final EIS. Cooperating agencies that participated in the development of the Ely RMP/EIS are:

- Great Basin National Park
- Humboldt-Toiyabe National Forest
- Nellis Air Force Base
- Nevada Department of Transportation
- Nevada Department of Wildlife
- Nevada Division of Minerals
- Nevada State Historic Preservation Office
- Lincoln County
- Nye County
- White Pine County
- Duckwater Shoshone Tribe
- Ely Shoshone Tribe
- Moapa Band of Paiutes
- Yomba Shoshone Tribe

Six public scoping meetings were held in March and April 2003. Ninety-three (93) letters were received via mail, fax, e-mail, an on-line web comment form, or handed in during the scoping meetings. These letters from individuals and organizations contained 798 unique comments for consideration in the planning process. As documented in the Scoping Report, issues identified were evaluated for their applicability to be addressed through alternatives.

A Notice of Availability was published in the Federal Register (Vol. 70, No. 145, pages 43902-43903, Friday, July 29, 2005) announcing the availability of the Ely Draft RMP/EIS for public review and comment for a 120-day formal comment period that ended on November 28, 2005. Six public meetings on the Draft RMP/EIS were held in October, 2005. Six hundred and fifty comment letters on the Draft RMP/EIS were received via U.S. mail and email. These included 81 unique letters and 569 form letters. From these letters, 1,667 comments were identified in the set of comment letters received on the Draft RMP/EIS. All public comments were responded to in the Proposed RMP/Final EIS.

A Notice of Availability was published in the Federal Register (Vol. 72 No. 230, pages 67748-67750, Friday, November 30, 2007,) announcing the availability of the Ely Proposed RMP/Final EIS. This began a 30-day protest period that ended December 30, 2007, and a 60-day governor's consistency review in accordance with planning regulations at 43 Code of Federal Regulations Part 1610.3-2(e), which ended on January 29, 2008. Copies of the Proposed Plan were mailed to over 1,200 agencies, organizations, and individuals. The Governor's Office did not identify any inconsistencies between the Proposed RMP/Final EIS and state or local plans, policies, or programs during the 60-day Governor's Consistency Review.

Six protest letters were received by BLM during the 30-day protest period provided of the management actions contained in the Ely Proposed RMP/Final EIS. Protesting parties consisted of:

- Clay Iverson
- Center for Biological Diversity
- Cindy MacDonald
- Western Watersheds Project (submitted two protest letters)
- Craig Downer

Based on previous involvement in the planning process, only two of the protesting parties were determined to have standing as defined in the BLM Land Use Planning Handbook (H 1601-1). Main protest points pertained to the following: management of grazing within the planning area; effects of management actions on threatened and endangered species and species of concern (including wild horses); inadequate analysis of impacts of management actions on global warming, cultural resources, and visual resources; area of critical environmental concern (ACEC) designation and management; management associated with vegetation resources and control of weeds; limited analysis of alternatives; effects of management actions on recreation and off-highway use vehicles; and concern that land disposals were not well defined and did not meet a no net loss criteria. The Director reviewed all valid protests, and letters responding to the protests were signed on June 20, 2008. No changes to the Proposed RMP were made as a result of the Director's review of the protests.

One letter provided by a protesting party determined to not have standing did include a comment determined to be germane to the planning process. This comment pertained to the location and designation of the Hendry's Creek/Rock Animal Corral ACEC. Due to this comment, the BLM State Director re-evaluated the location and need for the proposed ACEC to protect the resources at the Rock Animal Corral Archaeological Site. Based on this re-evaluation, the BLM State Director determined that the area proposed for designation of the Hendry's Creek/Rock Animal Corral ACEC is not necessary to protect the relevant and important values of the historic property, and the Approved RMP has been modified to reflect this determination.

Endangered Species Act

Formal consultation with the U.S. Fish and Wildlife Service was initiated by BLM for the Ely Proposed RMP/Final EIS under Section 7 of the Endangered Species Act of 1973 (as amended). Based on the list of federally listed, proposed, and candidate species and BLM sensitive species addressed in the Proposed RMP/Final EIS and the biological assessment, the U.S. Fish and Wildlife Service has issued a formal Biological Opinion (Appendix D) that includes terms and conditions to minimize impacts to federally listed, proposed, and candidate species, as well as BLM sensitive species.

Tribal Participation

As a federal agency, the BLM is mandated to consult with American Indian tribes concerning the identification of cultural values, religious beliefs, and traditional practices of American Indian people, as well as other possible environmental and social concerns that may be affected by actions on federal lands.

Consultation for the Ely RMP/EIS was initiated with Western Shoshone, Goshute, and Southern Paiute reservations, colonies, organizations, and individuals. The Western Shoshone included the Te-Moak Tribes, Battle Mountain Band, Elko Band, South Fork Band, Wells Band, Duckwater Shoshone Tribe, Ely Shoshone Tribe, Timbisha Shoshone Tribe, Yomba Shoshone Tribe, Duck Valley Sho-Pai Tribes, the Western Shoshone Historic Preservation Society, Nevada Indian Commission, Intertribal Council of Nevada, and Western Shoshone Defense Project. Included for the Goshute were the Goshute Tribe (Ibapah) and Skull Valley Band of Goshute. The Southern Paiute included the Paiute Tribe of Utah, Las Vegas Paiute Tribe, Moapa Paiute Tribe, the Colorado Indian Tribes, the Chemehuevi Tribe, and individuals residing in Eagle Valley and Caliente. Tribal concerns identified through this consultation process were addressed during preparation of the Ely District RMP and are reflected in the Approved RMP to the extent practicable.

References

Bureau of Land Management (BLM). 2007. Ely Proposed Resource Management Plan/Final Environmental Impact Statement for the Ely District. U.S. Department of the Interior, Bureau of Land Management, Ely Field Office, Ely, Nevada. November 2007.

U.S. Department of the Interior – BLM. 2005. Draft Resource Management Plan/Environmental Impact Statement for the Ely District. U.S. Department of the Interior, Bureau of Land Management, Ely Field Office, Ely, Nevada. July 2005.

U.S. Fish and Wildlife Service. 2008. Programmatic Biological Opinion (84320-2008-F-0078), Informal Consultation (84320-2008-I-0079), and Technical Assistance (84320-2008-TA-0080) for the Bureau of Land Management's Ely District Resource Management Plan. Nevada Fish and Wildlife Office, Las Vegas, Nevada. July 2008. 238 p.

Managers' Recommendations

Having considered a full range of alternatives, associated impacts, and public input, I recommend adoption and implementation of the attached Ely District Resource Management Plan.

John Ruhs
District Manager
Ely District

8/20/08
Date

State Director Approval

I approve the attached Ely District Resource Management Plan, as recommended. This document meets the requirements for a Record of Decision, as provided in 40 Code of Federal Regulations part 1505.2 and for a resource management plan, as described in 43 Code of Federal Regulations part 1610.0-5(k).

Ron Wenker
Nevada State Director

August 20, 2008
Date

ELY DISTRICT APPROVED RESOURCE MANAGEMENT PLAN

AUGUST 2008

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INTRODUCTION AND BACKGROUND

This section contains background information on the planning process and sets the stage for the information that is presented in the rest of the document. There are nine main discussions in this section. They are:

- Purpose of and Need for the Plan
- Planning Area and Maps
- Notice of Modifications
- Legislative Constraints
- Planning Process
- Related Plans
- Public Involvement
- Management Plan Implementation
- Plan Evaluation/Adaptive Management

Section 102 of the Federal Land Policy and Management Act directs the BLM to prepare land use plans that serve as the basis for all activities that occur on BLM-administered lands. “The national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process coordinated with other Federal and State planning efforts.” Section 202 of the Federal Land Policy and Management Act requires that “the Secretary shall, with public involvement … develop, maintain, and when appropriate, revise land use plans.”

Across the country, the first generation of BLM land use plans was prepared in the late 1970s and early 1980s. Within the Ely District Office, one RMP and one Management Framework Plan (MFP) were prepared in this timeframe. In 1996, management of the Caliente Resource Area was transferred from the Las Vegas District Office to the Ely District Office. The Caliente Resource Area also was covered by an MFP. Even with periodic amendments, these three 15- to 20 year-old plans no longer meet the management needs of the Ely District Office. This RMP is expected to serve the management direction needs of the Ely District Office for the foreseeable future. The Approved Ely RMP would remain in effect as long as the management direction contained in the Plan is valid in light of scientific understanding and current management needs. It is BLM policy to evaluate RMPs every 5 years to determine if a plan revision or amendment is needed in response to changing conditions over time. The Plan would be updated and amended periodically to maintain its effectiveness as long as practical. When the Plan reaches the end of its effective life, a new plan would be prepared. The life of an RMP is typically about 20 years.

Purpose of and Need for the Plan

The purpose of the Approved RMP is to provide direction for management of renewable and nonrenewable resources found on public lands within the Ely planning area and to guide decision-making for future site-specific actions. The Approved RMP will direct the Ely District Office in resource management activities including leasing minerals such as oil and gas; construction of electrical transmission lines, gas pipelines, and roads; grazing management; recreation and outfitting; preserving and restoring wildlife habitat; selling or

exchanging lands for the benefit of local communities; military use of the planning area; and conducting other activities that require land use planning decisions.

The need for the action is to consolidate, update, and establish appropriate goals, objectives, management actions, priorities, and procedures, within a multiple-use management context, for all BLM public land resource programs administered by the Ely District Office. The RMP is needed to provide a land use plan consistent with current laws, regulations, and policies, and to update resource management direction to allow Ely District Office managers to meet nationwide BLM goals and objectives and to ensure their actions are consistent with current BLM policy. The Approved RMP also is needed to facilitate implementation of the Great Basin Restoration Initiative, a regional initiative to implement actions to maintain or improve ecological health at the landscape scale.

This Approved Resource Management Plan provides direction and guidance for the management of approximately 11.5 million acres of public land and minerals located in Lincoln, White Pine, and a portion of Nye counties in eastern Nevada that are administered by the BLM Ely District Office. The Ely Approved RMP consolidates the Schell and Caliente Management Framework Plans approved in 1983 and 1981, respectively, the Egan Resource Management Plan approved in 1987, the Egan Resource Management Plan Oil and Gas Leasing Amendment and Record of Decision, May 1994, and the Approved Caliente Management Framework Plan Amendment and Record of Decision for the Management of Desert Tortoise Habitat, September 2000, and focuses on the principles of multiple use and sustained yield as prescribed by Section 202 of the Federal Land Policy and Management Act of 1976.

Issues addressed during the formulation of the Approved RMP include maintenance and restoration of resiliency to disturbed ecological systems within the portion of the Great Basin administered by the Ely District Office, protection and management of habitats for special status species, upland and riparian habitat management, noxious weeds, commercial uses (including livestock grazing, mineral development, oil and gas leasing, rights-of-way, and communication use areas), Areas of Critical Environmental Concern, travel management, land disposal, and wild horses.

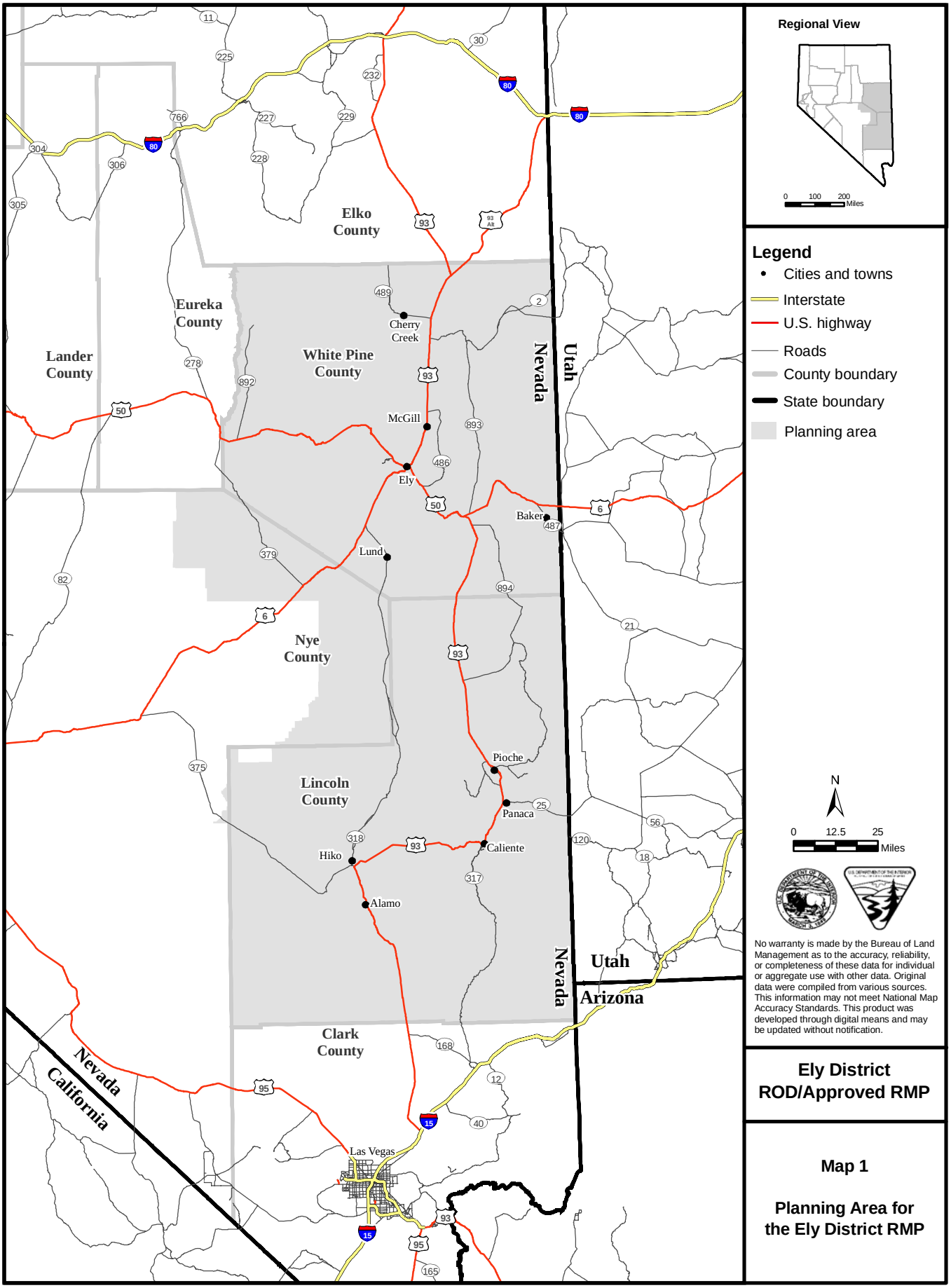
The Approved RMP primarily is based on the Proposed RMP alternative presented in the Proposed RMP/Final EIS (November 2007), and is a compilation of those individual management actions from the other four alternatives, plus unique management actions, that the Ely District Office believes will best meet its obligations for multiple use management of the resources found within the planning area. Management actions in the Proposed RMP were developed through consideration of the planning criteria, public protests, BLM policy especially as presented in the Land Use Planning Handbook, the professional judgment of the staff in the Ely District Office, and comments from a wide array of users of the planning area. The management actions that are presented in the Approved RMP are based on those in the Proposed RMP; changes made in response to protest letters received, governor's consistency review, and the Biological Opinion are discussed within this document.

Planning Area and Maps

The planning area for the Ely RMP/EIS consists of the geographic area within which the BLM Ely District Office would make land management decisions (see **Map 1**). The planning area includes all lands regardless of jurisdiction; however, the BLM would only make decisions on lands that fall under BLM's jurisdiction. **Map 2** shows the land status within the planning area. The “decision area” consists of public lands administered by the Ely District Office in White Pine, Lincoln, and a portion of Nye counties in east-central Nevada. The “decision area” also includes those private lands on which there is “split estate,” and the BLM continues to manage subsurface mineral commodities. The planning area measures approximately 230 miles (north-south) by 115 miles (east-west). **Table 1** summarizes the land administration/ownership in the planning area.

Table 1
Planning Area Land Administration/Ownership Status

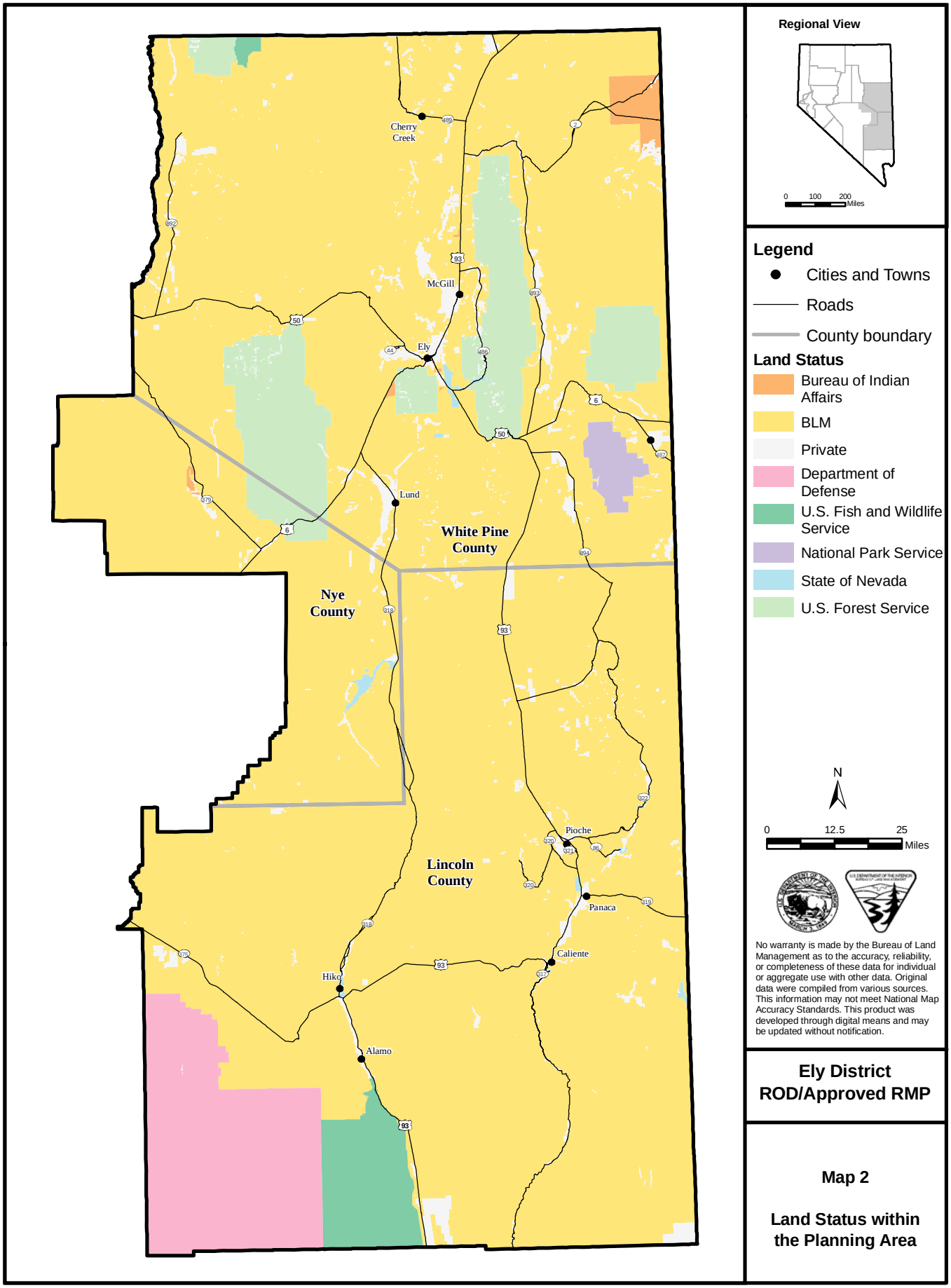
Administration/Ownership	Acres
U.S. Department of the Interior	
Bureau of Land Management	11,463,419
National Park Service	77,128
Bureau of Indian Affairs	73,555
Fish and Wildlife Service	282,995
U.S. Department of Agriculture	
Forest Service	825,136
U.S. Department of Defense	778,010
State of Nevada	34,131
Private	392,978
Total	13,927,352



Ely District ROD/Approved RMP

Map 1

Planning Area for the Ely District RMP



Ely District ROD/Approved RMP

Map 2

Land Status within the Planning Area

Notice of Modifications

As a result of protests on the Proposed RMP/Final EIS and continuing internal review, BLM made two substantive modifications to the Proposed Plan. Discussions associated with the Management Decisions in the Approved RMP have been adjusted to reflect these modifications.

Hendry's Creek/Rock Animal Corral ACEC

To resolve an issue identified within a protest letter, BLM modified management actions in the Approved RMP to reflect not designating the Hendry's Creek/Rock Animal Corral ACEC, but maintaining the Rock Animal Corral Archaeological Site under previous management. The Proposed RMP/Final EIS proposed the designation of 3,650 acres as the Hendry's Creek/Rock Animal Corral ACEC for the protection of prehistoric values. After review, BLM found that this location did not require special management as an ACEC to protect its relevant and important values. Protection of those values could be achieved by maintaining the designation as an archaeological site with restrictions on fluid and solid minerals, locatable minerals and mineral material sales on the 160 acres contained in the current special designation. This adjustment is not considered a significant change since the area will still be managed to protect the relevant and important values of the site, and the effects of managing these lands to protect these values were adequately projected in the Proposed RMP/Final EIS released in November, 2007.

Pony Express Trail

The Visual Resource Management classification in the Proposed RMP/Final EIS was mapped in error for the Pony Express Trail. As noted in decision CR-6, the area of direct effect around national historic trails is 1 mile from the centerline. Acreages of Visual Resource Management classifications (Class 1 through Class 4) have been adjusted in the Approved RMP based on these revisions. This adjustment is not considered a significant change since the adjustments to the Visual Resource Management associated with the Pony Express trail would be consistent with previously defined areas of direct effect.

The following clarifications and minor corrections made to the information included in the Proposed RMP/Final EIS are reflected in the Approved RMP.

- BLM review determined six of the seven implementation decisions indicated in the Proposed RMP were not implementation-level decisions but planning-level decisions. The Approved RMP has been modified to reflect this determination; however, no associated changes were made to management action wording.

- Management actions associated with species listed in the Biological Opinion (U.S. Fish and Wildlife Service 2008) were adjusted based on U.S. Fish and Wildlife Service Section 7 consultation. These management actions are now consistent with the Biological Opinion, included as Appendix D of the Approved RMP.

- Clarifications and editorial changes associated with adjusting titles and language from the Proposed RMP/Final EIS to conform with the desired Approved RMP format.

- Updated information associated with lands conveyed to White Pine County in accordance with the White Pine County Conservation, Recreation and Development Act of 2006.

- The mitigation measures adopted into the Approved RMP are Proposed Mitigation Measure 1, modified and included under Management Action FM-7; Proposed Mitigation Measure 2, included in Management Action REC-4; and Proposed Mitigation Measure 5, Option 1, included under Management Action LR-24. These approved mitigation measures are consistent with BLM authority.

Legislative Constraints

The BLM administers public lands within a framework of numerous laws. The most comprehensive of these is the Federal Land Policy and Management Act of 1976. All BLM policies, procedures, and management actions must be consistent with the Federal Land Policy and Management Act and the other laws that govern use of the public lands. In the Federal Land Policy and Management Act, Congress established the principle of "multiple use" management, defined as "management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people." In addition to the legislative and procedural agency guidance for the preparation of the Approved RMP, other initiatives and legislation have contributed to the scope and management direction for this document.

Lincoln County Conservation, Recreation, and Development Act of 2004

On November 30, 2004, the Lincoln County Conservation, Recreation, and Development Act of 2004 was signed into law. This legislation implements a comprehensive plan that balances the needs for infrastructure development, recreation opportunities, and conservation of natural resources and public lands in Lincoln County, Nevada.

White Pine County Conservation, Recreation, and Development Act of 2006

On December 20, 2006, the White Pine County Conservation, Recreation, and Development Act of 2006 was signed into law. This legislation implements a comprehensive plan that balances the needs for infrastructure development, recreation opportunities, and conservation of natural resources and public lands in White Pine County, Nevada. The White Pine Act is modeled after the Southern Nevada Public Land Management Act, the Clark County Lands Act, and the Lincoln County Conservation, Recreation, and Development Act.

Resource Advisory Councils

The Ely District Office receives input from two of the three Resource Advisory Councils in Nevada. The Northeastern Great Basin Resource Advisory Council helps advise the Ely District Office on public lands issues in White Pine County, while the Mojave/Southern Great Basin Resource Advisory Council provides input for Lincoln and Nye counties. The Secretary of the Interior has approved standards and guidelines for rangeland health, off-highway vehicle use, and wild horses that were developed with the involvement of these two Resource Advisory Councils. The standards and guidelines are written to accomplish four fundamentals of rangeland health. The fundamentals are that:

- Watersheds are functioning properly;
- Ecological processes are functioning properly to support healthy biotic populations and communities;
- Water quality complies with state water quality requirements; and
- Habitats of protected species are functioning properly.

The terms and conditions of grazing permits and leases must result in meeting or making progress toward meeting these Resource Advisory Council standards. Thus, these Resource Advisory Council standards and guidelines constitute existing policy that has been incorporated into the Approved RMP without modification. While the standards and guidelines developed by the Northeastern Great Basin and Mojave/Southern Great Basin Resource Advisory Councils are not identical in terms of the resources addressed or their specific wording, the goals presented in the Approved RMP were developed to be consistent with both sets of standards.

Planning Process

Relationship to Federal, State, Local and Tribal plans, Other Stakeholder Relationships

A multitude of laws, regulations, and policies, as well as land use planning documents, direct how the Ely District Office manages resources. Further, there are cooperative relationships that have been established with other federal, state, local, and tribal governments that manage lands and resources within the overall boundaries of the planning area. This entire body of relationships is too extensive to treat even in a summary manner in this document; however, certain relationships are key to understanding the management actions in the Approved RMP, and these are presented below. Fourteen federal, state, local, and tribal entities agreed to be formal Cooperating Agencies assisting in the preparation of the Ely Approved RMP.

Federal Agencies

Parts of the Humboldt-Toiyabe National Forest and the entire Great Basin National Park are within the planning area. The Ely District Office, U.S. Forest Service, and National Park Service strive to achieve similar resource management goals on adjoining lands.

The Ely District Office also coordinates with the U.S. Fish and Wildlife Service on decisions that may affect the National Wildlife Refuge System. All or portions of Ruby Lake National Wildlife Refuge, Pahranagat National Wildlife Refuge, and Desert National Wildlife Range occur within the planning area.

The U.S. Fish and Wildlife Service administers the Endangered Species Act of 1973 (as amended). The BLM consults with the U.S. Fish and Wildlife Service whenever a federal project or action that the BLM funds, authorizes, or carries out may affect a listed species, or may adversely modify its designated critical habitat. The BLM and the U.S. Fish and Wildlife Service have entered into an agreement to conduct programmatic consultations on RMPs. Programmatic consultations can provide the benefit of streamlining the consultation process while leading to a more landscape-based approach to consultations that can minimize the potential "piecemeal" effects that can occur when evaluating individual projects out of the context of the complete agency program. As part of this agreement, the BLM and U.S. Fish and Wildlife Service developed a list of federally listed, proposed, and candidate species and BLM sensitive species that are addressed in the Proposed RMP/Final EIS and in the Biological Assessment. Based on information contained in the Biological Assessment and discussions held during consultation, the U.S. Fish and Wildlife Service has issued a formal Biological Opinion that includes terms and conditions to minimize impacts to federally listed, proposed, and candidate species (Appendix D). The Biological Opinion also includes conservation recommendations for BLM sensitive species.

Under the programmatic consultation process, once a specific project is developed that may adversely affect listed species, the Ely District Office will provide project-specific information that describes: 1) the proposed action and a map of the specific areas to be affected; 2) the species and designated critical habitat that may be affected; 3) the anticipated effects to listed species and their designated critical habitat that may result for the proposed actions; and 4) proposed measures to minimize potential effects of the action. Subsequently, the U.S. Fish and Wildlife Service reviews the information and effects analysis provided for each proposed project and determines the anticipated incidental take for each action, at the project level, which may be a subset of the incidental take anticipated in the programmatic biological opinion.

The U.S. Fish and Wildlife Service completes a response and this documentation is then physically attached (appended) to the programmatic biological opinion. The programmatic biological opinion, together with the appended documentation, fulfills the consultation requirements for implementation of both program-level and project-level actions.

Monitoring will be conducted, at least annually, by the Ely District Office and the U.S. Fish and Wildlife Service to ensure that the effects analysis in the programmatic biological opinion is accurate. Monitoring would include a comprehensive review of how the program-level biological opinion is working and whether its implementing procedures are in compliance. During this review, the environmental baseline would be reviewed and updated as needed to account for unanticipated effects or the lack of anticipated effects. During this process it may be determined that the program-level biological opinion is functioning as anticipated and, therefore, activities should continue, or that adjustments should be made.

The Ely District Office and U.S. Department of Agriculture, Animal and Plant Health Inspection Service work jointly under a national memorandum of understanding on animal damage control, including predator and insect control.

The Ely District Office and U.S. Army Corps of Engineers work together on issues related to wetlands and stream crossings that require Section 404 permits.

The Ely District Office works with the Natural Resources Conservation Service on soil and water management issues, as well as other resource concerns.

The Ely District Office consults with the U.S. Geological Survey on mineral and water resources and research.

The Department of Defense utilizes much of the airspace above and has numerous surface activities in the planning area. The Ely District Office works with the Department of Defense through Nellis and Hill Air Force Bases and Fallon Naval Air Station on military overflights and surface uses.

State Agencies

The Ely District Office and Nevada Department of Wildlife work closely on site-specific activities including wildlife habitat and population management, introduction or reintroduction of wildlife species, species recovery activities, vegetation monitoring and evaluation, and the installation of range, fish, and wildlife improvements. Coordination also occurs on the management of State Wildlife Management Areas that are adjacent to BLM-administered lands, and on review of mine plans of operation and NEPA compliance documents.

The Department of Conservation and Natural Resources, Nevada Natural Heritage Program works with the Ely District Office to maintain status and location information for BLM sensitive plant and animal species.

The Ely District Office and Nevada Division of State Parks consult on management of public land adjacent to state parks. Public lands also can be transferred to the state for park purposes under authority of the Recreation and Public Purposes Act.

The Ely District Office consults with the Nevada State Historic Preservation Officer prior to any activities that might adversely affect cultural resources. This consultation involves assessing the potential effects of proposed projects on cultural resources and developing appropriate mitigation measures when adverse impacts cannot be avoided.

The Nevada Division of Minerals manages oil and gas and geothermal development at the state level. The Nevada Division of Environmental Protection participates with the Ely District Office in joint bonding, review, and authorization of mine plans of operation. The Ely District Office works closely with these two agencies to avoid duplication in regulations, inspections, and approval of reclamation plans and attempts to minimize costs for mine operators, public, and government.

The Nevada BLM and Nevada Division of Environmental Protection work together to meet implementation requirements of the Clean Air Act and Clean Water Act. A Memorandum of Understanding was executed between the agencies in September 2004 to coordinate water quality management efforts.

The Ely District Office, Nevada Department of Agriculture, and county governments cooperate on inventory, study, and management of noxious weeds, and on insect control.

The Ely District Office and Nevada Department of Transportation cooperate and coordinate land use activities and/or authorizations such as road rights-of-way, mineral material sources, communications sites, and other issues related to public highway safety.

The Nevada Commission for the Preservation of Wild Horses works with the Ely District Office to maintain and ensure the proper management of wild horses.

Local Government

The Ely District Office coordinates with a number of county agencies and organizations on mutual goals for resource management and land disposals for public purposes. Coordination includes county commissions, planning departments, soil and water conservation districts, weed control agencies, coordinated resource management steering committees, road/highway departments, and the Tri-County Group.

Tribal Governments

The Ely District Office coordinate**s** with affected or interested American Indian groups as required or recommended in the National Historic Preservation Act (1966), National Environmental Policy Act (1969), Archaeological Resources Protection Act (1979), Native American Graves Protection and Repatriation Act (1990), executive orders on sacred sites (Executive Order 13007) and government-to-government consultation (Executive Order 13175), and Nevada BLM Instruction Memorandum on the consultation process (2005-008). The Ely District Office also would coordinate with appropriate tribal representatives in the early stages of activity planning or projects that may affect tribal interests, treaty rights, or traditional use areas.

Non-governmental Organizations

To maximize restoration capability and success while achieving mutual goals, including implementation of the Great Basin Restoration Initiative, the Ely District Office has formed an external partnership with the Eastern Nevada Landscape Coalition. This non-profit community-based partnership has approximately 90 members from businesses, organizations, government agencies, and individuals that represent agricultural, conservation, cultural, environmental, scientific, private enterprise, and other interests. The Nevada BLM and other federal agencies work with the Eastern Nevada Landscape Coalition through a cooperative agreement to implement a variety of resource management activities on public land in eastern Nevada. In addition, the Ely District Office works cooperatively with the Great Basin Cooperative Ecological

Systems Study Unit to facilitate the implementation of research to assist in providing both baseline and other studies regarding potential alternative actions to maintain or restore the ecological health and resiliency of Great Basin landscapes within eastern Nevada.

Related Plans

BLM planning regulations (43 Code of Federal Regulations 1610.3.2[a]) require that BLM resource management plans be consistent with officially approved or adopted resource-related plans of other federal, state, local, and tribal governments to the extent those plans are consistent with federal laws and regulations applicable to public lands. Plans formulated by federal, state, local, and tribal governments that relate to management of lands and resources have been reviewed and considered as the Ely Approved RMP has been developed.

State and Local Plans

State of Nevada

- Natural Heritage Program, Lincoln County Rare Species List, 2002
- Natural Heritage Program, Nye County Rare Species List
- Natural Heritage Program, White Pine County Rare Species List, 2002
- Nevada State Parks, Beaver Dam State Park Development Plan, 1992
- Nevada State Parks, Cathedral Gorge State Park Development Plan, No Date
- Nevada State Parks, Cave Lake State Park Development Plan, 1990
- Nevada State Parks, Echo Canyon State Park Development Plan, 1990
- Nevada State Parks, Kershaw-Ryan State Park Development Plan, No Date
- Nevada State Parks, Spring Valley State Park Development Plan, 1992
- Nevada State Parks, Ward Charcoal Ovens State Historic Site Development Plan, 1991
- Nevada State Parks, 2002 SCORP Issues P-1 (Draft)
- State of Nevada, Department of Conservation and Natural Resources, Division of Wildlife, Wayne E. Kirch Wildlife Management Area Conceptual Management Plan, July 2000
- State of Nevada, Department of Conservation and Natural Resources, Division of Wildlife, Steptoe Valley Wildlife Management Area Conceptual Management Plan, January 2002
- State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection, Memorandum of Understanding for Water Quality Management Activities within the State of Nevada, September 2004
- State of Nevada, Department of Conservation and Natural Resources, Natural Heritage Program Scorecard, 2000
- State of Nevada, Department of Conservation and Natural Resources, Natural Resource Status Report, August 2002
- State of Nevada, Department of Conservation and Natural Resources, Division of Water Resources, Southern Nevada Surface Water Data Network, 2002
- State of Nevada, Department of Natural Resources, Division of Water Planning, State Water Plan, 1999

- State of Nevada, Department of Transportation, Transportation System Projects 2003-2012 – Lincoln County, 2002
- State of Nevada, Department of Transportation, Transportation System Projects 2003-2012 – Nye County, 2002
- State of Nevada, Department of Transportation, Transportation System Projects 2003-2012, White Pine County, 2002
- State of Nevada, Department of Wildlife, Bighorn Sheep Management Plan, 2001
- State of Nevada, Department of Wildlife, Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats, 2004
- State of Nevada, Department of Wildlife, Greater Sage-grouse Conservation Plan for Nevada and Eastern California, 2004
- State of Nevada, Department of Wildlife, Lincoln County Elk Management Plan, July 1999
- State of Nevada, Department of Wildlife, Nevada Sage-grouse Conservation Strategy, 2004
- State of Nevada, Department of Wildlife, Pahranagat Valley Native Fishes Management Plan, 1999
- State of Nevada, Department of Wildlife, White Pine County Elk Management Plan, March 1999
- State of Nevada, Division of Environmental Protection, Nevada's 2002 303(d.) Impaired Waters List, October 2002
- State of Nevada, Division of Environmental Protection, Nevada Smoke Management Program, July 1999
- State of Nevada, Division of Environmental Protection, Solid Waste Management Program
- State of Nevada, Revised Nevada Bat Conservation Plan, 2006
- State of Nevada, Conservation Agreement and Conservation Strategy for Bonneville Cutthroat Trout, 2006

Mohave County, Arizona

- Mohave County, Arizona, General Plan, March 1995, Revised January 2002

Clark County, Nevada

- Clark County Master Plan, Clark County Federal Lands Element, Adopted July 1, 1997
- Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement, September 2000

Eureka County, Nevada

- Eureka County Master Plan, June 2000
- Eureka County Natural Resource Management Ordinance, November 1996

Lincoln County, Nevada

- Alamo Area Land Use Planning Project,1990
- Lincoln County/City of Caliente, Rachel Area Conceptual Development Plan, 1989
- Lincoln County Master Plan, Revision, 2006
- Lincoln County Economic Development Strategy 2005
- Lincoln County Strategic Marketing Plan, 2005
- Lincoln County Capital Improvements Plan and Program, 2001

- Lincoln County Planned Unit Development Ordinance, 2002
- Lincoln County Public Land and Natural Resource Management Plan, 1997
- Lincoln County Hazardous Materials Emergency Response Plan, 2006
- Lincoln County Solid Waste Management Plan, 2000
- Needs Assessment for Lincoln County, 2005
- Water Plan for Lincoln County, 2001

Nye County, Nevada

- Nye County, Policy Plan for Public Lands, 1985

White Pine County, Nevada

- Public Lands Identified for Transfer from the BLM to Local Government for Community Expansion, 1998, Appendix 2, White Pine County Land Use Plan
- White Pine County Annual Comprehensive Economic Development Strategy, August 2005
- White Pine County, Emergency Operations Plan, 1994
- White Pine County, Land Use Plan, 1998
- White Pine County, Marketing Manual, August 1997
- White Pine County, McGill Highway Area Master Plan, August 2000
- White Pine County, Nevada Water Resources Plan, 1999
- White Pine County Open Space Plan, September 2005
- White Pine County, Public Land Use Plan, 1998
- White Pine County, Tourism Master Plan, August 2001
- White Pine County, Water Resources Plan, August 2006

Iron County, Utah

- Iron County Master Plan, Utah – General Plan, Land Use Element, Digital Copy, 1981

Millard County, Utah

- Millard County, Utah – General Plan, Federal and State Lands, No Date

Tooele County, Utah

- Tooele County, Utah – General Plan, November 1995

Washington County, Utah

- New Harmony Valley General Plan, Washington County, Utah, July 1997
- Washington County, Utah – General Plan, October 2002
- Washington County, Utah, Wilderness Recommendation – Cougar Canyon Wilderness Area, October 1991

City of Caliente, Nevada

- City of Caliente Master Plan, 1992
- City of Caliente, Wellhead Protection Plan, October 2002
- Fiscal and Capital Improvement Program, Caliente Public Utilities, 1990

City of Ely, Nevada

- City of Ely Master Plan – Business Plan Element, May 1999
- City of Ely, Wellhead Protection Plan, April 2002
- Ely Master Plan, 1999

Federal Plans

Department of Energy

- U.S. Department of Energy, Yucca Mountain Final EIS

National Park Service

- Great Basin National Park Final General Management Plan, Development Concept Plans, EIS, Natural Resources Management
- Great Basin National Park RMP, Updated 2000

U.S. Fish and Wildlife Service

- Big Spring Spinedace Recovery Implementation Plan, 1999 (Draft)
- Big Spring Spinedace Recovery Plan, 1993
- Desert Tortoise Recovery Plan, 1994
- Pacific States Bald Eagle Recovery Plan, 1986
- Pahranagat National Wildlife Refuge Wildland Fire Management Plan, 2001
- Railroad Valley Springfish Recovery Plan, 1997
- Recovery Plan for the Aquatic and Riparian Species of Pahranagat Valley, 1998
- Ruby Lake Management Plan, September 1986
- Ruby Lake National Wildlife Refuge Fire Management Plan, 2001
- Ruby Lake National Wildlife Refuge Water Management Plan, May 1988
- Southwestern Willow Flycatcher Recovery Plan, 2002
- White River Spinedace Recovery Plan, 1994

U.S. Forest Service, Humboldt National Forest

- Humboldt National Forest Land and RMP, 1986
- Amendment #1 – Humboldt National Forest Land and RMP, December 1989
- Amendment #2 – Humboldt National Forest Land and RMP, July 1990
- Amendment #3 – Humboldt National Forest Land and RMP
- Amendment #4 – Humboldt National Forest Land and RMP

- Amendment #5 – Humboldt National Forest Land and RMP
- Amendment #6 – Humboldt National Forest Land and RMP, August 1996
- Amendment #7 – Humboldt National Forest Land and RMP, November 1998

Tribal Plans

The Ely District Office communicated on a government-to-government basis with five tribal groups (Duckwater Shoshone Tribe, Ely Shoshone Tribe, Moapa Band of Paiutes, Yomba Shoshone Tribe, and Confederated Tribes of the Goshute Reservation), the first four of which were formal cooperating agencies on the RMP/EIS, regarding any plans or policies that should be reviewed for consistency. No planning documents were provided for this review.

Consistency with Other Programs, Plans, and Policies

During the development of the Ely RMP/EIS, the planning documents cited above were consulted and considered as alternatives were developed. Parallel RMP-level decisions currently in place on adjoining state and federal lands, including some in Utah and Arizona, and local agency policies were reviewed for consistency. Management actions identified in the Approved RMP are substantially consistent with these federal, state, and local planning documents. Where the Approved RMP does not contain a management action that corresponds with one contained in another agency's planning document (or vice versa), the Approved RMP was judged to be consistent with the other document. While there is not uniformity in land management practices or goals across the region (i.e., they are not identical), management actions are compatible with adjoining jurisdictions, and there is no apparent conflict. Key areas of consistency are highlighted in the following sections, and minor inconsistencies also have been noted.

Federal Plans and Policies

Wildland fire management by the Ely District Office is directed by the Ely Fire Management Plan. It was found that fire management for adjoining BLM District Offices may be inconsistent in certain locations. For example, an area in the planning area may be identified as having "few constraints" (requirements) for fire suppression, while the adjoining area in another BLM planning area may be identified as "full suppression." However, the Ely Fire Management Plan has been in effect for several years and has proven to be compatible with fire management on adjoining units overall; therefore, no conflicts are foreseeable.

State Plans and Policies

The Nevada Division of State Lands currently is preparing an update to the Statewide Public Lands Policy Plan. The Ely District Office has reviewed the preliminary public land management goals identified for the state plan and has found them to be consistent with the Approved RMP. The state goals would be revisited once they are finalized.

The Nevada State Water Plan states: "Since most water supply sources originate on watersheds managed by federal agencies, their participation in watershed planning and management is essential" (Nevada

Division of Water Planning 1999). The Ely District Office intends to involve the Nevada Division of Water Planning in the development of watershed restoration strategies, and thus, the ROD and Approved RMP is consistent with the state water plan. The Approved RMP also includes a decision to manage designated wellhead protection areas.

The Nevada Smoke Management Program includes the following goal: "Acknowledge the role of fire in Nevada and allow the use of fire under controlled conditions to maintain healthy ecological systems while meeting the requirements of the Clean Air Act" (Nevada Division of Environmental Protection 1999). Wildland fire use requires an annual permit (including an initial or revised burn plan and map), as well as daily evaluation of the fire to: "determine if the conditions meet the prescription of the permitted burn, and that ambient air quality standards are not being violated." Thus, prescribed and wildland fire use as tools in the restoration of watersheds would require coordination with the state in those areas where the Ely Fire Management Plan allows management options other than full suppression.

County Plans and Policies

Overall, the management actions contained in the ROD and Approved RMP are consistent with the planning documents of the three directly affected counties, seven neighboring counties, and two major communities (Ely and Caliente). These jurisdictions have developed a wide range of planning goals addressing topics from recreation to livestock grazing to mineral development. However, the topic that was of greatest interest to the three cooperating counties (White Pine, Lincoln, and Nye) and the City of Caliente during preparation of the RMP/EIS was the future availability of BLM-administered land for economic development and community expansion. These goal statements are presented below.

- White Pine County – "Support the sale or exchange of public land which increases private land holdings in the County available for agriculture, industrial and community development." "Encourage BLM to amend its Resource Management Plan to reflect County goals and implementation strategies for public land and specific parcels identified for transfer to accommodate community expansion needs" (White Pine County 1998).

- Lincoln County – "Lincoln County should help facilitate the exchange of federal (BLM) lands into private ownership for both residential and industrial uses." "The predominance of public lands restricts community expansion and economic development. The county is identifying public lands desired for economic development and/or community expansion" (Lincoln County 2001).

- Nye County – "Increase opportunities for local economic development by selectively increasing the amount of privately owned and locally managed land within the county except for lands with high recreational, wildlife, mineral, and other public values." "Disposal of public lands in a timely fashion to allow the expansion of existing communities, the possible creation of new ones and the construction of needed residential and commercial facilities" (Nye County 1985).

- City of Caliente – "Those lands which could provide needed area for growth adjacent to the city should be identified and pursued for acquisition from the Bureau of Land Management" (City of Caliente 1992).

Two areas where county planning documents are inconsistent with the Approved RMP also were identified. These are presented below.

- Lincoln County – "No additional wetlands shall be designated in Lincoln County. Any wetlands in existence shall not be used by public agencies managing them to harm or impede agriculture or other economic activities in Lincoln County whatsoever" (Lincoln County 1997). Wetland identification and management planning would be a component of the watershed analysis process. It is anticipated that wetlands will be managed for resource values other than agriculture or economic development.

- Lincoln County – On June 20, 1994, the Lincoln County Commission passed a resolution stating that it is "adamantly opposed … to land exchanges or transfers that take land either off of county tax rolls or place land into a tax exempt status" (Lincoln County Commission Resolution #1994-10). The Approved RMP will allow the acquisition of land, which could result in a decrease in the number of acres of land on the county tax rolls.

Public Involvement

The BLM will continue to actively seek the views of the public using techniques such as news releases, mass mailing, and website postings to ask for participation and to inform the public of news and ongoing project proposals, site-specific planning, and opportunities and timeframes for comment. The public is encouraged to actively participate in implementing these decisions by doing the following:

- Requesting that their name be added to project or NEPA mailing lists by sending or calling in a request (via mail or phone) to the following address/phone number:

  Ely District Office
  HC 33 Box 33500
  702 North Industrial Way
  Ely, Nevada 89301
  775 289-1800

- Talking with a manager or staff member by calling or emailing;
- Monitoring BLM's website (www.nv.blm.gov) for project proposals or information; and/or
- Attending public meetings and provide written comments on site-specific project proposals.

The BLM will continue to coordinate and consult, both formally and informally, with various Federal and state agencies, Indian Tribes, local agencies and officials, and communities and groups interested and involved in the management of public lands in the Ely District.

Management Plan Implementation

Priorities

Land use plan decisions are generally implemented or become effective upon approval of the RMP and signing of the Record of Decision. These decisions include the goals, objectives, land use allocation decisions and all special designations.

Management actions in this Approved RMP that require additional site-specific project planning as funding becomes available, will require further environmental analysis, completion of Section 106 compliance for cultural resources, and Section 7 consultation. Decisions to implement site-specific projects will be subject to administrative review at the time such decisions are made.

The BLM will continue to involve and collaborate with the public during implementation of this Approved RMP. Opportunities to become involved in plan implementation will include development of partnerships and community-based citizen groups. The BLM invites citizens and user groups interested in the management of the Ely District to become actively involved in the implementation of plan decisions. The BLM and citizens can collaboratively develop site-specific goals and objectives that mutually benefit public land resources, local communities, and the people who live, work, or recreate on public lands.

Costs

The costs associated with the implementation of this plan will be developed in association with future site-specific plans.

Plan Evaluation and Adaptive Management

Plan Monitoring

Monitoring is an essential component of natural resources management, because it provides information on the relative success of resource management plans and specific management strategies. This importance is recognized in the BLM's Land Use Planning Handbook (H-1601-1), which provides direction for monitoring. "Land use plan monitoring is the process of (1) tracking the implementation of land use planning decisions (implementation monitoring) and (2) collecting data/information necessary to evaluate the effectiveness of land use planning decisions (effectiveness monitoring)." Implementation monitoring will be completed annually and will be documented in a tracking log or report, which will be available to the public. Effectiveness monitoring strategies will be developed as allowable uses and management actions are implemented. "The monitoring process should collect information in the most cost-effective manner and may involve sampling and remote sensing. Monitoring could be so costly as to be prohibitive if it is not carefully and reasonably designed."

Monitoring for each resource program is outlined in the "Management Decisions" section of the Approved Plan. If monitoring shows land use plan actions or best management practices are not effective, the BLM

may modify or adjust management without amending or revising the plan as long as assumptions and impacts disclosed in the EIS analysis remain valid, and broad-scale goals and objectives are not changed. Where the BLM considers taking or approving actions that will alter or not conform to the overall direction of the Approved Plan, the BLM will prepare a plan amendment or revision and environmental analysis of appropriate scope.

Land Use Plan Evaluations

Plan evaluation is a crucial part of the implementation process. Evaluation will determine:

1. If decisions are relevant to current issues;
2. If decisions are effective in achieving desired outcomes;
3. If decisions need to be revised;
4. If any decisions need to be removed from further consideration; and
5. If any new areas/issues need decisions.

Evaluations may identify resource needs and means for correcting deficiencies and addressing issues through plan maintenance, amendments, or new starts.

Adaptive Management

The Interior Departmental Manual 516 DM 4.16 defines adaptive management as “a system of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes and, if not, facilitating management changes that would best ensure that outcomes are met or re-evaluate the outcomes.” The Ely District Office recognizes that specific knowledge regarding natural resource systems is sometimes uncertain and in those situations, adaptive management is the preferred management method.

Adaptive management is a formal, systematic, and rigorous approach to learning from the results of management actions, accommodating change, and improving management. It involves synthesizing existing knowledge, exploring alternative actions, and making explicit forecasts about their results. Management actions and monitoring programs are carefully designed to generate reliable feedback and clarify the reasons underlying results. Actions and objectives are then adjusted based on this feedback and improved understanding. In addition, decisions, actions, and results are carefully documented and communicated to others, so that knowledge gained through experience is passed on rather than lost when individuals move or leave the organization.

Goals, objectives, special designations, and allocations could not be changed through adaptive management. Plan amendments would be required to change these decisions. Implementation or activity level decisions could be adapted. Future activity level plans would follow NEPA procedures and involve the public.

MANAGEMENT DECISIONS

Acreages displayed in this document should be considered approximations even when displayed to the nearest acre. Most acreages were calculated from Geographic Information System coverage and rounded to the nearest 1,000 acres. As a result, the acreages presented may not match acres provided in prior published documents containing calculations from master title plats or other base data. The data used throughout this document are for land use planning purposes and not necessarily for on-the-ground implementation. The precision afforded by Geographic Information System calculation does not reflect project-level accuracy. Acreage figures that are provided in this document for land use plan analysis purposes would be refined as subsequent site-specific analysis is conducted.

In accordance with Section 7 of the Endangered Species Act, the U.S. Fish and Wildlife Service issued a programmatic Biological Opinion. Where appropriate, decisions in the Proposed RMP/Final EIS have been modified to incorporate the new conditions from the Biological Opinion into the Approved RMP. The Biological Opinion is included as Appendix D.

Air Resources

The Clean Air Act requires the BLM to minimize emissions of air quality pollutants from activities on public lands to protect human health and the environment. The Clean Air Act also requires each state to develop a state implementation plan for regions within the state that have nonattainment status, to ensure that the national ambient air quality standards are attained and maintained for the criteria pollutants. Federal agencies are required to ensure that their actions conform to state implementation plans. The Nevada Division of Environmental Protection is responsible for producing the state implementation plan. The Nevada Smoke Management Program coordinates and facilitates the statewide management of prescribed outdoor burning in the State of Nevada. This program is designed to meet the requirements of Nevada Revised Statutes 445B.100 through 445B.845, inclusive, which deal with air pollution, and the requirements of the U.S. Environmental Protection Agency Interim Air Quality Policy on Wildland and Prescribed Fires (April 1998). The planning area is considered in attainment. The Clean Air Act places additional restrictions on impacts to air quality and visibility within Class I and II areas. Class I areas consist of many national wildlife refuges and most national parks and designated wilderness that existed when legislation was enacted in 1977. Class II areas include most other western public lands. Little degradation of air quality is allowed in Class I areas; less stringent requirements apply to Class II areas. There are no Class I areas in the planning area; the nearest Class I areas are the Jarbidge Wilderness in northeast Nevada and Zion National Park in southwest Utah.

Goals – Air Resources

Meet all applicable local, state, and tribal constraints, and National Ambient Air Quality Standards under the Clean Air Act (as amended), and prevent significant deterioration of air quality (defined as violation of air quality regulations) within the Ely planning area from all direct and authorized actions.

Objectives – Air Resources

To ensure air quality in the Ely planning area meets all National Ambient Air Quality Standards.

Management Actions – Air Resources

AR-1: Develop burn plans that include incident and cumulative air quality considerations prior to implementing all prescribed burn treatments.

AR-2: Coordinate with the Nevada Division of Environmental Protection prior to the planning of prescribed fires and other air quality related actions.

AR-3: Authorize activities likely to adversely affect the Class II classification of public lands within the planning area, or the designation of the nearest Class I areas, such as Jarbidge Wilderness, on a case-by-case basis after compliance with appropriate laws.

Monitoring– Air Resources

On a project-specific basis, monitoring may be required to comply with state air quality permit requirements.

Water Resources

Suitable water quality is important for proper ecological function as well as for supporting designated beneficial uses, including domestic supply (drinking water). The maintenance or improvement of water quality in streams and aquifers is, therefore, a major BLM management goal. The Federal Water Pollution Control Act of 1977, as amended, (commonly known as the “Clean Water Act”) requires the restoration and maintenance of the chemical, physical, and biological integrity of the Nation’s waters. The State of Nevada has regulatory primacy in administering the Act within its boundaries. A Memorandum of Understanding identifies responsibilities and activities to be performed by each agency in carrying out water quality programs on agency-administered lands in Nevada. In addition to the Clean Water Act, numerous laws, regulations, policies, and Executive Orders direct the BLM to manage water quality for the benefit of the Nation and its economy, and to sustain multiple uses of the land. The BLM is required to maintain water quality where it presently meets approved state water quality requirements, guidelines, and objectives, and to improve water quality on public lands where it does not meet those requirements, guidelines, and objectives.

It is BLM policy to conform with applicable state laws and administrative claims procedures for water rights when managing and administering all BLM programs and projects, except as otherwise specifically mandated by Congress. The State Engineer Office, in the Division of Water Resources of the Nevada Department of Conservation and Natural Resources, administers water rights programs in Nevada based on beneficial use and the Doctrine of Prior Appropriation. The State of Nevada regulates its water rights programs using guidance in chapters 533 and 534 of the Nevada Revised Statutes. The BLM will acquire and perfect water rights necessary for public land management purposes according to these state laws and

procedures. The BLM also will protect existing water rights of the U.S. by protesting or providing comment during the state permitting process on applications for new water rights or for changes to existing water rights that may interfere with BLM's ability to utilize such water for public land management purposes.

Goals – Water Resources

The quality of water resource on public lands administered by the Ely District Office will be suitable for the appropriate beneficial uses and will meet approved federal, state, tribal, and local requirements, guidelines, and objectives. The quantity of water on public lands administered by the Ely District Office will be suitable to meet public land management purposes.

Northeastern Great Basin Resource Advisory Council Standard. Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

Objectives – Water Resources

To protect the chemical, physical, and biological integrity of waters as needed to maintain healthy ecological systems and provide values that support multiple uses. Acquire and perfect sufficient water rights to meet public land management needs.

Management Actions – Water Resources

WR-1: Ensure authorized activities on public lands do not degrade water quality by complying with the Clean Water Act and Nevada Water Pollution Control Regulations (Nevada Revised Statute 445A). Cooperate with the Nevada Division of Environmental Protection to reduce non-point source water pollution as per the Memorandum of Understanding between the BLM and Nevada Division of Environmental Protection dated September 2004.

WR-2: Integrate land health standards, best management practices, and appropriate mitigation measures into authorized activities to ensure water quality meets state requirements and BLM resource management objectives (BLM Manual 7240 Nevada Supplement).

WR-3: Recognize community wellhead protection areas approved by the State of Nevada and only authorize activities within such areas that do not have potential for degrading groundwater quality.

WR-4: Maintain or improve watershed conditions by controlling or restricting land uses and utilizing tools, where appropriate, to promote desired vegetation conditions.

Monitoring – Water Resources

Cooperation with state agencies, municipalities, industry, agriculture, universities, and other federal agencies in the planning area will occur to collect and interpret water resources data, and to participate in local, state, and regional water resources management. Aquifer recharge will be monitored at selected

representative wells and springs throughout the planning area and on nearby lands as access agreements allow. Water levels and spring flows and durations will be monitored periodically either by the Ely District Office individually or cooperatively with other agencies. Existing historical data will be retrieved as available and archived with new data. Stream channel geometry and flow data also will be collected periodically at selected perennial, intermittent, and ephemeral locations of interest. Meteorological data (e.g., precipitation, temperature, wind speed and direction, solar radiation, and relative humidity) also will be collected at selected locations. Site selection, data collection procedures, and the frequency of data collection will depend on the data type, prior knowledge of suitable and significant monitoring locations, budget and personnel considerations, and anticipated resource activities within specific locales. Water resources trends within the planning area will be reviewed periodically.

Water quality monitoring will be conducted at selected sites (wells, springs, and streams) for various parameters to compare applicable water quality requirements and objectives to current conditions. Data collection and interpretations will be performed either by the Ely District Office individually or cooperatively with other agencies. Water quality data collection will be conducted in coordination with the water quantity monitoring described above. Water quality constituents to be analyzed will be determined with due consideration of planning needs and the Memorandum of Understanding between the BLM and the State of Nevada. Sampling and analysis will follow standard field and laboratory protocols approved by the U.S. Environmental Protection Agency. Drinking water sources will be protected by developing and implementing wellhead protection plans and assessing the presence and effects of fertilizers, pesticides, herbicides, and other contaminants released to water resources by agriculture, municipalities, industry, and the BLM itself. Water quality trends will be reviewed periodically within the planning area for management purposes.

Soil Resources

Soils are the growth medium for vegetation and the source of sediment in streams. Management goals for vegetation, watershed, wildlife, and livestock cannot be achieved without productive and stable soils.

Goals – Soil Resources

Maintain or improve long-term soil quality.

Northeastern Great Basin Resource Advisory Council Standard. Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, and landform.

Mojave/Southern Great Basin Resource Advisory Council Standard. Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.

Objectives – Soil Resources

To ensure that soils throughout the planning area exhibit infiltration and permeability appropriate to the soil type, with erosion and compaction having minimal effect on soil quality.

Management Actions – Soil Resources

SR-1: Restore and maintain desired range of conditions to increase infiltration, conserve soil moisture, promote groundwater recharge, and ground cover composition (including litter and biotic crusts) to increase or maintain surface soil stability and nutrient cycling.

SR-2: For soil disturbing actions which will require reclamation, salvage and stockpile all available growth medium prior to surface disturbances. Seed stock piles if they are to be left for more than one growing season. Re-contour all disturbance areas to blend as nearly as possible with the natural topography prior to re-vegetation. Rip all compacted portions of the disturbance to an appropriate depth based on site characteristics. Establish an adequate seed bed to provide good seed-to-soil contact.

SR-3: Protect soils from high compaction during surface disturbing activities through soil moisture and/or seasonal use restrictions commensurate with soil surface texture or other properties on a case-by-case basis.

Monitoring – Soil Resources

Soil health and condition will be monitored by conducting reviews of ground-disturbing projects for implementation and effectiveness of best management practices, and by periodically assessing selected undisturbed sites for various parameters including erosion and sedimentation, topsoil characteristics, and groundcover. Monitoring the effects of other resource management actions such as livestock grazing and watershed projects will consider soil condition and health. Baseline soil condition data will be provided through the ecological site inventories and watershed analyses. Site selection, data collection procedures, and the frequency of data collection will depend on the data type, prior knowledge of suitable and significant monitoring locations, budget and personnel considerations, and anticipated resource activities within specific locales. Soil quality trends within the planning area will be reviewed periodically for management purposes.

Vegetation Resources

The Federal Land Policy and Management Act, the Public Rangeland Improvement Act, and the Healthy Forests Restoration Act, provide objectives and priorities for management of public land vegetation resources. Guidance contained in Title 43, Subpart 4180 of the Code of Federal Regulations directs public land management toward the maintenance or restoration of the physical function and biological health of vegetation systems. Land Health Standards for lands administered by the BLM in Nevada were approved by the Secretary of the Interior in 1997.

Ecological site descriptions will be used as the initial basis to guide integrated management/treatments to meet the desired goals and objectives for vegetation.

Specific management actions and decisions will be implemented by vegetation community to achieve the desired range of conditions and objectives, and to meet the overall goal of vegetation in the Approved RMP. A variation of 5 percent above or below the values listed in the desired range of conditions for all vegetation communities is considered acceptable.

Goals – Vegetation Resources

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

Northeastern Great Basin Resource Advisory Council Standard. Habitats – Exhibit a healthy, productive and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover, and living space for animal species and maintain ecological processes; habitat conditions meet the life cycle requirements of threatened and endangered species.

Mojave/Southern Great Basin Resource Advisory Council Standard. 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.

Objectives – Vegetation Resources

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

Management Actions – Vegetation Resources

General Vegetation Management

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

VEG-2: Develop specific management objectives through the watershed analysis process, incorporating direction from activity plans (see Management Actions WL-8 and WL-15).

VEG-3: Adhere to the Healthy Forests Restoration Act of 2003 (Section 102 [e]) to protect old-growth characteristics or their equivalent.

VEG-4: Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid scale (watershed level).

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

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

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

Parameter – Pinyon-Juniper Woodlands

VEG-8: Implement actions to attain the desired vegetation states shown in **Table 2**.

Table 2
Desired Range of Conditions of Pinyon-Juniper (Distribution of Woodland Phases and States)

State and Phase	Herbaceous State	Herbaceous State (Immature Woodland Phase)	Tree State (Mature Woodland Phase)	Tree State (Overmature Woodland Phase)[1]	Altered State
Canopy Description[2]	0 to 10% canopy cover-includes herbaceous, herbaceous-shrub, and sapling phase	11 to 20% canopy cover	21 to 35% canopy cover	>36 to 50% canopy cover	Site dominated by invasive species or weeds
LANDFIRE classes	A and B	C	D and E	E	Uncharacteristic
Approved RMP[3]	10% (359,300 acres)	20% (718,700 acres)	65% (2,335,700 acres)	5% (179,700 acres)	0% (0 acres)

[1] Overmature woodland refers to woodlands exhibiting greater than 35 percent canopy cover. This classification is not the same as "old growth" although the two classifications may coincide in some situations.
[2] Canopy descriptions derived from Natural Resource Conservation Service Ecological Site Descriptions.
[3] The Approved RMP approximates and incorporates the LANDFIRE Biophysical Settings models for Great Basin pinyon-juniper woodland. Altered state is an uncharacteristic condition not recognized by LANDFIRE Biophysical Settings models but is part of current conditions.

VEG-9: Integrate treatment priorities to include:

1. Public safety and protection from catastrophic wildland fire above other considerations.

2. Limit the transition of immature and mature phases to the overmature phase and from becoming infested with invasive species.

3. Direct overmature woodlands toward earlier phases (i.e., herbaceous state and phase) on a watershed basis, and only if existing immature and mature woodlands are considered resilient and do not need treatments to maintain resiliency.

4. Manage for pinyon-juniper old-growth characteristics to include broad asymmetric tops, deeply furrowed bark, twisted trunks or branches, dead branches and spike tops, large lower limbs, hollow trunks (mostly in juniper), large trunk diameters relative to tree height, and branches covered with a bright yellow-green lichen on true woodland sites as defined by ecological site description.

Parameter – Aspen

VEG-10: Implement actions to attain the desired vegetation states shown in **Table 3**.

Table 3
Desired Range of Conditions of Aspen (Distribution of Phases and States)

State and Phase	Herbaceous State (Herbaceous, and Herbaceous-Shrub and Sapling Phase)	Herbaceous State (Immature Woodland Phase)	Tree State (Mature Woodland Phase)	Tree State (Overmature Woodland Phase)
Canopy Cover[1]	0 to 15% tree canopy cover	16 to 29% tree canopy cover.	30 to 45% tree canopy cover	45% or greater tree canopy cover (includes conifer dominated)
LANDFIRE classes	A	B	C and D	D and E
Approved RMP[2]	14% (980 acres)	40% (2,800 acres)	45% (3,150 acres)	<1% (<70 acres)

[1] Canopy cover determined from Natural Resource Conservation Service Ecological Site Descriptions.
[2] The Approved RMP approximates and incorporates the LANDFIRE Biophysical Setting Models for Rocky Mountain aspen forest and Inter-mountain Basin aspen-mixed conifer forest and woodland. Description of LANDFIRE CLASSES can be found at www.landfire.gov.

VEG-11: Integrate treatment priorities that include:

1. Areas where select species of conifers dominate the tree overstory and where canopy cover exceeds the percentages listed in the desired range of conditions in **Table 3** (Overmature Phase).

2. Areas where understory species are declining and aspen are not regenerating.

3. Managing aspen communities (using disturbance) to remain in or move toward those phases that are more resilient and resistant to disturbance.

4. Allowing regeneration to occur where potential allows, and to protect that regeneration through use restrictions or other protection methods.

5. Selecting and applying protection measures on a site-specific basis during implementation of the RMP.

6. Managing aspen stands to maintain or improve stand characteristics and promote regeneration.

Parameter – High Elevation Conifer Species

VEG-12: Implement actions to attain the desired vegetation states shown in **Tables 4** and **5**.

Table 4
Desired Range of Conditions of High Elevation Conifer (Distribution of States and Phases)

State and Phase	Herbaceous State, (Herbaceous, and Herbaceous/Sapling Phase)	Herbaceous State (Immature Phase)	Tree State (Mature Phase)	Tree State (Overmature Phase)[1]
Canopy Cover[2]	0 to 15% canopy Cover	16 to 31% canopy cover	31 to 40% canopy cover	41 to 60% canopy cover
LANDFIRE classes	A	B	C	C
Approved RMP[3]	20% (9,400 acres)	20% (9,400 acres)	50% (23,500 acres)	10% (4,700 acres)

[1] Overmature high elevation conifer refers to stands with canopy cover exceeding 40 percent. This classification is not the same as "old growth," although the two classifications may coincide in some situations.
[2] Canopy cover derived from Natural Resource Conservation Service Ecological Site Descriptions.
[3] The Approved RMP approximates and incorporates the LANDFIRE Biophysical Setting Models for Inter-Mountain white fir limber-bristlecone pine woodland (47,000 acres).

Table 5
Desired Range of Conditions of Ponderosa Pine (Distribution of States and Phases)

State and Phase	Herbaceous State, (Herbaceous, and Herbaceous/Sapling Phase)	Tree State (Saplings and survivors)	Tree State (Mature Phase)	Tree State (Overmature Phase)
Canopy Cover	0 to 5% canopy cover	5-10% canopy cover	10-20% canopy cover	Greater than 20% canopy cover
LANDFIRE Classes	A	C	D	B and E
Approved RMP[1]	10% (900 acres)	20% (1,800 acres)	60% (5,400 acres)	10% (900 acres)

[1] LANDFIRE Biophysical Setting Model for southern Rocky Mountain ponderosa pine and appropriate ecological site descriptions.

VEG-13: Integrate treatment priorities that include:

1. Areas where tree overstory canopy is approaching threshold levels (i.e., self-thinning and understory is diminishing).

2. Areas where overstory tree canopy cover and density have crossed a threshold, and are restricting understory growth.

3. Protect conifer trees, as appropriate, that meet the old growth criteria. General characteristics are: white fir, 24 inches diameter breast height and 75 feet in height; limber pine, 20 inches diameter breast height and 75 feet in height; ponderosa pine, 30 inches diameter breast height and 75 feet in height.

Parameter – Salt Desert Shrub

VEG-14: Implement actions to attain the desired vegetation states shown in **Table 6**.

Table 6
Desired Range of Conditions of Salt Desert Shrub (Distribution of Phases and States)

Habitat Type	Herbaceous State	Shrub State	Altered State Annual Invasive/Exotic State	Altered State Perennial Nonnative Seeded
LANDFIRE classes	A	B and C	Uncharacteristic	Uncharacteristic
Approved RMP[1]	5% (61,050 acres)	77% (940,170 acres)	0% (0 acres)	18% (219,800 acres)

[1] The Approved RMP approximates and incorporates the LANDFIRE Biophysical Setting Models for Inter-Mountain Basins mixed salt desert shrub and Inter-Mountain Basin greasewood flat. Altered state (invasive species/weeds) is an uncharacteristic condition not recognized by LANDFIRE Biophysical Setting Models but is part of current conditions.

VEG-15: Intensively manage areas currently in the herbaceous state to facilitate conversion to the shrub state.

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

VEG-16: Implement actions to attain the desired vegetation states shown in **Table 7**.

Table 7
Desired Range of Conditions of Sagebrush (Distribution of Phases and States)

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

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

VEG-17: Integrate treatments to:

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

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

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

Parameter – Mountain Mahogany

VEG-19: Implement actions to attain the desired vegetation states shown in **Table 8**.

Table 8
Desired Range of Conditions of Mountain Mahogany (Distribution of Phases and States)

State and Phase	Herbaceous State (Herbaceous Phase)	Shrub State (Shrub/ Herbaceous Phase)	Shrub State (Shrub Phase)	Shrub/Tree-like State (No Understory Phase)[1]
Canopy Cover[2]	0-15% mahogany canopy cover	15-25% mahogany canopy cover (desired mix of herbaceous and shrub species in understory)	30-45% mahogany canopy cover (approaching threshold with no understory)	45-60% mahogany cover (shrub/tree-like and tree dominant)
LANDFIRE classes	A and C	B	D	E
Approved RMP[3]	20% (9,200 acres)	20% (9,200 acres)	15% (6,900 acres)	45% (20,700 acres)

[1] Refers to savanna sites.
[2] Canopy cover determined from Natural Resource Conservation Service Ecological Site Descriptions.
[3] The Approved RMP approximates and incorporates the LANDFIRE Biophysical Setting Models for Inter-Mountain Basin mountain mahogany woodland and shrubland.

VEG-20: Integrate treatments in areas where:

1. Wildlife habitat requirements will receive the highest priority consideration when determining site-specific objectives in mountain mahogany sites.

2. Desirable understory is still present and where canopy cover is near threshold level or exceeds percentages listed for the desired range of conditions above (i.e., shrub/tree-like dominant state).

Parameter – Mojave Desert Vegetation

VEG-21: Implement actions to attain the desired vegetation states shown in **Tables 9** and **10**.

Table 9
Desired Range of Conditions of Creosotebush and Bursage (Distribution of Phases and States)

Habitat Type	Herbaceous State	Shrub State	Altered State (Annual Invasive and Exotics)	Perennial Nonnative Seeded State
LANDFIRE Classes	A	B	Uncharacteristic	Uncharacteristic
Approved RMP[1]	15% (54,825 acres)	70% (255,850 acres)	0% (0 acres)	15% (54,825 acres)

[1] In creosotebush/bursage communities, the herbaceous state and shrub state will correspond respectively to Class A and Class B as given in the LANDFIRE Biophysical Setting Model for Sonora-Mojave creosotebush-white bursage description. Altered states are an uncharacteristic condition not recognized by LANDFIRE Biophysical Settings models but are part of current conditions.

Table 10
Desired Range of Conditions of Blackbrush (Distribution of Phases and States)

Habitat Type	Herbaceous State	Shrub State	Altered State (Annual Invasive and Exotics)	Perennial Nonnative Seeded State
LANDFIRE Classes	A	B	Uncharacteristic	Uncharacteristic
Approved RMP[1]	15% (57,375 acres)	75% (286,875 acres)	0% (0 acres)	10% (38,250 acres)

[1] The herbaceous state and shrub state will correspond respectively to Class A and Class B as given in the LANDFIRE Biophysical Setting Model for Mojave mid-elevation desert scrub. Altered states are an uncharacteristic condition not recognized by LANDFIRE Biophysical Settings models but are part of current conditions.

VEG-22: Intensively manage areas currently in the herbaceous state to facilitate conversion to the shrub state.

Parameter – Riparian/Wetlands

Desired Range of Conditions. The Ely District Office is directed to follow the appropriate rangeland health standards. The Northeastern Great Basin Resource Advisory Council states “Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.” The Mojave/Southern Great Basin Resource Advisory Council specifies “Riparian and watershed 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).” In addition to achieving riparian proper functioning condition, composition, structure, and cover of riparian vegetation will occur within capabilities of the site. Ground cover and species composition will be appropriate to the site.

Riparian areas with free-flowing water (i.e., undeveloped springs) that are non-functional or functioning at risk will show improving trends toward proper functioning condition.

VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, in order to provide for stable water flow and bank stability.

VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat.

Parameter – Nonnative Seedings (Existing)

VEG-25: Implement actions to attain the desired vegetation states shown in **Table 11**.

Table 11
Desired Range of Conditions of Seedings (Distribution of Phases and States)

Habitat Type	Herbaceous State	Shrub State	Tree State	Altered State (Annual Invasive)
Approved RMP	65% (175,200 acres)	25% (67,400 acres)	10% (26,900 acres)	0% (0 acres)

VEG-26: Include the following integrated treatments:

1. Use of ecological site descriptions as references for identifying appropriate management of non-seeded species on the sites.

2. Management of seedings to allow sagebrush, perennial grasses, and forbs to become established on the site.

Monitoring – Vegetation Resources

Vegetation communities in both treated and untreated areas will be monitored to determine progress toward attaining desired range of conditions. Monitoring to determine success in meeting vegetation management objectives will shift to measuring cover, composition, and structure of the community (i.e., the parameters essential for identification of phases within the state and transition model concept). Periodic measurements of vigor and productivity will continue and will utilize standard methodologies (National Research Council 1994; Swanson 2006).

Fish and Wildlife

Section 102(8) of the Federal Land Policy and Management Act of 1976, as amended, states it is policy to manage public lands in a manner that will protect the quality of multiple resources and provide habitat for

fish, wildlife, domestic livestock, and wild horses. Standards and guidelines direct BLM to foster productive and diverse populations and communities of plants and animals. It also is BLM policy to cooperate with state agencies to accommodate species management population goals to the extent that they are consistent with the principles of multiple use management. The BLM acknowledges the role of the State of Nevada and the Nevada Department of Wildlife, under the direction of the State Board of Wildlife Commissioners, in managing, protecting, augmenting, and restoring fish and wildlife populations. The Ely District Office will work in close coordination with the State of Nevada and the Nevada Department of Wildlife and draw on and implement the goals, objectives, and actions outlined in Nevada's Wildlife Action Plan and various species management plans, as appropriate.

The ecological condition of the various vegetation communities greatly influences the quality of wildlife habitat. The Ely District Office fish and wildlife habitat management, as presented in this RMP, will emphasize restoration to achieve the desired range of conditions for the various vegetation communities.

Goals – Fish and Wildlife

Provide habitat for wildlife (i.e., forage, water, cover, and space) and fisheries that is of sufficient quality and quantity to support productive and diverse wildlife and fish populations, in a manner consistent with the principles of multi-use management, and to sustain the ecological, economic, and social values necessary for all species.

Northeastern Great Basin Resource Advisory Council Standard. Habitats exhibit a healthy, productive and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

Mojave/Southern Great Basin Resource Advisory Council Standard. 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.

Objectives – Fish and Wildlife

To manage suitable habitat for aquatic species, priority wildlife species, and migratory birds in a manner that will benefit wildlife species directly or indirectly and minimize conflicts among species and wildlife or habitat losses from permitted activities. Priority species for terrestrial wildlife habitat management are elk, mule deer, pronghorn antelope, Rocky Mountain bighorn sheep, desert bighorn sheep, and migratory birds; because these species cover the entire Ely RMP planning area. Priority habitats include calving/fawning/kidding/lambing grounds, crucial summer range, crucial winter range, and occupied desert bighorn sheep habitat.

To use wildlife water developments, both natural and artificial, to improve the condition of wildlife habitat, and to use artificial wildlife water developments to mitigate impacts to wildlife species from loss of natural water sources or loss of habitat.

Management Actions – Fish and Wildlife

General Wildlife Habitat Management (Aquatic and Terrestrial)

WL-1: Emphasize management of priority habitats for priority species. (See the discussion on Vegetation Resources for the desired range of conditions for the various vegetation communities.) See **Map 3**, **Map 4**, **Map 5**, and **Map 6**.

WL-2: Release wildlife on public lands within the planning area in conformance with Manual 1745, and the Memorandum of Understanding between the BLM and the Nevada Department of Wildlife.

WL-3: Consider objectives listed in the appropriate U.S. Fish and Wildlife Service National Wildlife Refuge Comprehensive Conservation Plan when managing wildlife habitat adjacent to a national wildlife refuge.

WL-4: Mitigate all discretionary permitted activities that result in the loss of aquatic and priority wildlife habitats by improving 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis (see **Map 3**, **Map 4**, **Map 5**, and **Map 6**).

Parameter – Elk, Mule Deer, Pronghorn Antelope, and Rocky Mountain Bighorn Sheep Habitats

WL-5: In coordination with Nevada Department of Wildlife, update priority habitats for elk, pronghorn antelope, mule deer, and Rocky Mountain bighorn sheep, as well as other seasonal habitats for these priority species (see **Map 3**, **Map 4**, **Map 5**, and **Map 6**).

WL-6: Where appropriate, restrict permitted activities in big game calving/fawning/kidding/lambing grounds and crucial summer range from April 15 through June 30 (see **Map 3**, **Map 4**, **Map 5**, and **Map 6**).

WL-7: Where appropriate, restrict permitted activities in crucial winter range from November 1 through March 31 (see **Map 3**, **Map 4**, **Map 5**, and **Map 6**).

WL-8: Focus restoration projects initially in priority habitats (i.e., calving/fawning/kidding/lambing grounds, crucial summer range, and crucial winter range), and then in other seasonal habitats within a watershed (see **Map 3**, **Map 4**, **Map 5**, and **Map 6**).

WL-9: Manage elk habitat by implementing the actions and strategies identified in the Central Nevada, Lincoln County, and White Pine County Elk Management Plans that the Ely District Office has the authority to implement, and that are consistent with watershed restoration strategies.

WL-10: Manage habitat for Rocky Mountain bighorn sheep in the Snake Range. Manage domestic sheep and goats in accordance with current BLM policy when changes to BLM grazing permits are being considered in the Snake Range.

WL-11: Consider managing habitat for Rocky Mountain bighorn sheep in unoccupied ranges if and when domestic sheep grazing no longer occurs in the area (see **Map 6**).

Parameter – Desert Bighorn Sheep Habitat

WL-12: Manage desert bighorn sheep habitat in all occupied ranges (see **Map 6**). Manage domestic sheep and goats in accordance with current BLM policy when changes to BLM grazing permits are being considered.

WL-13: Where appropriate, restrict permitted activities within occupied desert bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31 (see **Map 6**).

WL-14: Consider managing habitat for desert bighorn sheep in unoccupied ranges if and when domestic sheep grazing no longer occurs in the area (see **Map 6**).

Parameter – Migratory Bird Habitat

WL-15: Identify the spatial and temporal habitat needs for those migratory bird species of concern for the sagebrush biome to help achieve the desired range of conditions of the various vegetation communities (see the discussion on Vegetation Resources).

WL-16: When planning projects, consider migratory birds, as appropriate, to minimize take and limit impacts.

WL-17: Work with the U.S. Fish and Wildlife Service, Nevada Department of Wildlife and other partners (e.g., Great Basin Bird Observatory, Partners in Flight) to conduct breeding bird surveys to document the population status and trends of those migratory bird species of concern.

Parameter – Wildlife Water Developments

WL-18: Restore natural water sources (i.e., springs and seeps) to increase water availability through restoration of riparian habitats and proper livestock and wild horse management.

WL-19: Identify areas of suitable wildlife habitat that are water limited in coordination with the Nevada Department of Wildlife and interested public (i.e., elk management technical review teams, sportsmen groups, etc.).

WL-20: Use the criteria listed below to identify artificial wildlife water developments:

- To mitigate for loss of natural water sources;
- To mitigate for habitat loss or habitat fragmentation;
- To reduce inter-specific competition between wildlife, livestock, and wild horses;

- To reduce inter-specific competition between wildlife species; and
- In suitable wildlife habitat that is water limited.

Monitoring – Fish and Wildlife

Periodic inventories of fisheries are conducted by the Nevada Department of Wildlife on perennial streams and reservoirs. The Ely District Office will coordinate with the Nevada Department of Wildlife in review of information relating to management of fisheries habitat on public lands.

Baseline wildlife use patterns and estimated population levels will be calculated using information collected annually by the Nevada Department of Wildlife. These will be compared with post-treatment use patterns and population numbers to determine relative effectiveness of watershed restoration. Forage production will be monitored on an allotment basis during livestock allotment evaluations. Annual livestock and wild horse utilization records gathered by Ely District Office staff and wildlife observations reported by the Nevada Department of Wildlife and Ely District Office will be used to determine possible conflicts. Conflicts between livestock, wild horses, and wildlife will be resolved during the assessments and subsequent management actions including appropriate management level adjustments in herd management areas, cooperative habitat management actions with Nevada Department of Wildlife, and grazing permit renewals. Impacts to wildlife populations will take into account changes in herd management objectives as set by the Nevada Department of Wildlife.

Special Status Species

Section 102(8) of the Federal Land Policy and Management Act of 1976, as amended, requires that public land be managed to protect the quality of multiple resources and to provide habitat for fish, wildlife, domestic livestock, and wild horses. Special status species include federally listed, proposed, or candidate species; state listed species; and BLM sensitive species. The BLM must follow the requirements of the Endangered Species Act of 1973, as amended, and BLM policy to conserve federally listed threatened and endangered species and the ecological systems on which they depend. BLM policy also states, "…ensure that actions requiring authorization or approval by the Bureau of Land Management (BLM or Bureau) are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under provisions of the ESA or other provisions of this policy." The Ely District Office will manage special status species following the direction and guidance identified in BLM Manual 6840; recovery plans; biological opinions; conservation agreements, plans, and strategies; habitat conservation plans; and the recommendations from interagency recovery implementation teams.

Goals – Special Status Species

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

Northeastern Great Basin Resource Advisory Council Standard.

- Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover, and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

- Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

Mojave/Southern Great Basin Resource Advisory Council Standard.

- 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.

- 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 to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function).

Objectives – Special Status Species

To manage suitable habitat for special status species in a manner that will benefit these species directly or indirectly and minimize loss of individuals or habitat from permitted activities.

Management in Great Basin riparian habitat will benefit the following special status species:

- Pahrump poolfish (federally listed endangered species)
- White River spinedace (federally listed endangered species)
- Railroad Valley springfish (federally listed threatened species)
- Big Spring spinedace (federally listed threatened species)
- Ute ladies'-tresses (federally listed threatened species)

Management in Mojave Desert and Great Basin riparian habitat will benefit the following special status species:

- Southwestern willow flycatcher (federally listed endangered species)
- Western yellow-billed cuckoo (federal candidate species)
- Meadow Valley Wash desert sucker (BLM sensitive species)

- Meadow Valley Wash speckled dace (BLM sensitive species)
- Arizona southwestern toad (BLM sensitive species)

Management in Mojave Desert riparian habitat will benefit the following special status species:

- White River springfish (federally listed endangered species)
- Hiko White River springfish (federally listed endangered species)
- Pahranagat roundtail chub (federally listed endangered species)

Management in Mojave Desert scrub habitat will benefit the following special status species:

- Desert tortoise (federally listed threatened species)
- Banded Gila monster (BLM sensitive species)

To manage Mojave Desert and Great Basin desert scrub and salt desert shrub habitats for the benefit of the following special status species:

- Western burrowing owl (BLM sensitive species)
- Sunnyside green gentian (BLM sensitive species)

To manage Great Basin sagebrush habitats for the benefit of the following special status species:

- Greater sage-grouse (BLM sensitive species)
- Pygmy rabbit (BLM sensitive species)

Management Actions – Special Status Species

Parameter – Special Status Species Habitat

SS-1: Prioritize conservation, maintenance, and restoration actions for special status species based on the following order of importance: 1) federally listed endangered species, 2) federally listed threatened species, 3) federal proposed species, 4) federal candidate species, and 5) BLM sensitive species.

SS-2: Develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-3: Participate on interagency recovery implementation teams to identify and address implementation of management actions for the recovery of listed species in the Ely planning area.

SS-4: Where appropriate, restrict permitted activities from May 1 through July 15 within 0.5 mile of raptor nest sites unless the nest site has been determined to be inactive for at least the previous 5 years.

SS-5: Manage Bonneville cutthroat trout habitat by implementing those actions and strategies identified in the Conservation Agreement and Conservation Strategy for Bonneville Cutthroat Trout in the State of Nevada that the Ely District Office has the authority to implement.

SS-6: Use the Revised Nevada Bat Conservation Plan (Bradley et al. 2006) for guidance on implementation of bat management actions, such as:

- Bat-friendly techniques for abandoned mine closures;
- Proper bat surveys of abandoned mines identified for hard closure techniques;
- Improving livestock grazing of riparian and upland habitat;
- Limiting off-highway vehicle travel in or near riparian habitat;
- Stopping conversion of native sagebrush vegetation communities to annual grasslands, and restoration to native rangelands;
- Installing escape ramps in artificial water sources;
- Monitoring wind energy development projects; and
- Rehabilitating areas damaged by fires.

SS-7: Implement management actions identified in the Ely Cave Management Plan (BLM 1986) (i.e., closures, bat gates, etc.) to protect bats, on a case-by-case basis.

SS-8: In vegetation communities, especially riparian areas and pinyon-juniper woodlands, consider the habitat needs of obligate bat species in restoration treatments.

SS-9: Perform springsnail surveys prior to the development of any spring source.

SS-10: Mitigate all discretionary permitted activities that result in the loss of special status species habitats on a ratio of 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis. This will not apply to desert tortoise habitat as remuneration fees and other measures to minimize effects to the tortoise are required for disturbance in desert tortoise habitat.

Parameter – Great Basin Riparian Habitat

SS-11: Manage the refugium at Shoshone Ponds for Pahrump poolfish in accordance with the Recovery Plan for the Pahrump Killifish (now called the Pahrump poolfish) (also see Appendix D).

SS-12: Expand the fenced area at Shoshone Ponds (also see Appendix D).

SS-13: Manage the uplands around Shoshone Ponds to increase vegetation cover, reduce runoff, and prevent excessive siltation into the ponds (also see Appendix D).

SS-14: Develop additional ponds at Shoshone Ponds to increase the habitat for the Pahrump poolfish. This development would be consistent with the Biological Opinion (Appendix D).

SS-15: Manage public lands adjacent to designated critical habitat for the White River spinedace, located on private land, in accordance with the White River Spinedace Recovery Plan (also see Appendix D).

SS-16: Manage public lands adjacent to designated critical habitat for the Railroad Valley springfish, located on the Duckwater Indian Reservation, in accordance with the Railroad Valley Springfish Recovery Plan (also see Appendix D).

SS-17: Manage Big Spring spinedace habitat by implementing those actions and strategies identified in the Big Spring Spinedace Recovery Plan that the Ely District Office has the authority to implement, and in accordance with the Condor Canyon Habitat Management Plan (also see Appendix D).

SS-18: In cooperation with the U.S. Fish and Wildlife Service, survey appropriate habitats on public lands in Lincoln County for the Ute ladies'-tresses. Develop and implement conservation and recovery actions for any populations that may be discovered (also see Appendix D).

Parameter – Mojave Desert and Great Basin Riparian Habitats

SS-19: Manage southwestern willow flycatcher habitat by implementing those actions and strategies identified in the Southwestern Willow Flycatcher Recovery Plan and appropriate actions from future habitat conservation plans that the Ely District Office has the authority to implement (also see Appendix D).

SS-20: Limit livestock grazing in the Lower Meadow Valley Wash ACEC through terms and conditions and/or season-of-use restrictions on grazing permits in accordance with a site-specific ACEC plan (also see Appendix D).

Parameter – Mojave Desert Riparian Habitat

SS-21: Manage White River springfish habitat at Ash Spring by implementing those actions and strategies identified in the Recovery Plan for the Aquatic and Riparian Species of Pahranagat Valley and the Ash Springs Coordinated Management Plan that the Ely District Office has the authority to implement (also see Appendix D).

SS-22: Manage public lands adjacent to designated critical habitat for the Hiko White River springfish, located on private land, in accordance with the Recovery Plan for the Aquatic and Riparian Species of Pahranagat Valley (also see Appendix D).

SS-23: Manage public lands adjacent to the aquatic habitat for the Pahranagat roundtail chub, located on private and state land, in accordance with the Recovery Plan for the Aquatic and Riparian Species of Pahranagat Valley (also see Appendix D).

Parameter – Mojave Desert Scrub Habitat

SS-24: Manage desert tortoise habitat by implementing those actions and strategies identified in the Desert Tortoise Recovery Plan, and appropriate actions from future habitat conservation plans that the Ely District Office has the authority to implement (also see Appendix D).

SS-25: Coordinate with the U.S. Fish and Wildlife Service and the Nevada Department of Wildlife to inventory desert tortoise habitat and desert tortoise populations. Management would be consistent with the Biological Opinion (also see Appendix D).

SS-26: Implement an interagency monitoring program for desert tortoise habitat and desert tortoise populations, approved by the U.S. Fish and Wildlife Service and the Desert Tortoise Management Oversight Group (also see Appendix D).

SS-27: Cooperate with the U.S. Fish and Wildlife Service, Nevada Department of Wildlife, and the U.S. Department of Agriculture-Wildlife Services in a program to control desert tortoise predators (also see Appendix D).

SS-28: Coordinate with the U.S. Fish and Wildlife Service and Nevada Department of Wildlife to develop approved translocation research projects for desert tortoises (also see Appendix D).

SS-29: Coordinate with the U.S. Fish and Wildlife Service, Nevada Department of Wildlife, Federal Highway Administration, the Nevada Department of Transportation, and Lincoln County to install tortoise-proof fencing and crossing culverts along U.S. Highway 93 in the Kane Springs ACEC and along other roads, as needed, in all three desert tortoise ACECs (also see Appendix D).

SS-30: Manage leased public lands in the Coyote Springs area in accordance with Public Law 100-275 dated March 31, 1988, and the Land Lease Agreement signed July 14, 1988.

SS-31: Limit maintenance of existing roads to the existing disturbance and perform maintenance in accordance with specifications provided by the Ely District Office in consultation with the U.S. Fish and Wildlife Service (also see Appendix D).

SS-32: Where appropriate, restrict permitted activities from March 1 through October 31 within desert tortoise habitat (see **Map 7** and Appendix D).

SS-33: Implement the following management actions for desert tortoise habitat (see **Map 7**). Implement the additional conditions for desert tortoise and conditions for the Southwest willow flycatcher, White River springfish, Pahrump poolfish, and Big Springs spinedace habitat contained in the 2008 Biological Opinion (Appendix D) (also refer to discussions on Wild Horses, Lands and Realty, Recreation, Geology and Minerals, and Fire Management).

- Within desert tortoise ACECs: If fence construction occurs during the tortoise active season, a qualified tortoise biologist will be onsite during construction of the tortoise-proof fence to ensure that no tortoises are harmed. If the fence is constructed during the tortoise inactive season, a qualified tortoise biologist will thoroughly examine the proposed fence line and burrows for the presence of tortoises no more than three days before construction. Any desert tortoises or eggs found in the fence line will be relocated offsite by the biologist in accordance with approved protocol (Desert Tortoise Council 1994, 1999). Tortoise burrows that occur immediately outside of the fence alignment that can be avoided by fence construction activities will be clearly marked to prevent crushing.

- Within desert tortoise ACECs: Projects will require fencing, unless determined by the BLM authorized officer and U.S. Fish and Wildlife Service that the project should not be fenced. In accordance with current specifications, fencing will consist of 1-inch horizontal by 2-inch vertical mesh. The mesh will extend at least 18 inches aboveground and, where feasible, 6 to 12 inches belowground. In situations where it is not feasible to bury the fence, the lower 6 to 12 inches of the fence will be bent at a 90 degree angle towards potentially approaching tortoises and covered with cobble or other suitable material to ensure that tortoise or other animals cannot dig underneath.

- Within desert tortoise ACECs: Tortoise fencing will be inspected on a quarterly basis, and any repairs completed within 72 hours from March 1 through October 31, and within 7 days from November 1 through February 28/29. The operator will inspect the fencing at least on a quarterly basis and after major precipitation events to ensure zero ground clearance. Monitoring and maintenance will include regular removal of trash and sediment accumulation and restoration of zero ground clearance between the ground and the bottom of the fence, including re-covering the bent portion of the fence if not buried. The operator will perform maintenance when needed including removing trash, sediment accumulation, and other debris. Fencing will be removed upon termination and reclamation of the project, or when it is determined by the BLM authorized officer and U.S. Fish and Wildlife Service that the fence is no longer necessary.

- Within desert tortoise ACECs: During surface-disturbing activities, tortoise burrows will be avoided whenever possible. If a tortoise is found onsite during project activities, which may result in take of the tortoise (i.e., in harm's way), such activities will cease until the tortoise moves, or is moved, out of harm's way. The tortoise will be moved by a qualified tortoise biologist. All workers also will be instructed to check underneath all vehicles before moving such vehicles and within stockpiled materials. Tortoises often take cover under vehicles and construct burrows in stockpiled material.

- Within desert tortoise ACECs: The BLM authorized officer will approve the selected consulting firm/biologist to be used by the applicant to implement the terms and conditions of the permit issued by the BLM. Any biologist and/or firm not previously approved will submit a curriculum vitae and be approved by the BLM authorized officer. Other personnel may assist with implementing terms and conditions that involve tortoise handling, monitoring, or surveys, only under direct field supervision of the approved, qualified biologist.

- Within desert tortoise ACECs: Tortoises and nests that are found will be handled and relocated by a qualified tortoise biologist in accordance with U.S. Fish and Wildlife Service-approved protocol. Burrows containing tortoises or nests will be excavated by hand, with hand tools, to allow removal of the tortoise or eggs. Desert tortoises moved during the tortoise inactive season or those in hibernation, regardless of date, will be placed into an adequate burrow; if one is not available, one will be constructed in accordance with Desert Tortoise Council protocol. During mild temperature periods in the spring and early fall, tortoises removed from the site will not necessarily be placed in a burrow. Tortoises and burrows will only be relocated to federally managed lands. If the responsible federal agency is not the BLM, verbal permission, followed by written concurrence, will be obtained before relocating the tortoise or eggs to lands not managed by the BLM.

- Desert tortoises moved in the winter (i.e., November 1 through February 28/29), or those in hibernation regardless of date, will be placed into an adequate burrow; if one is not available, one will be constructed utilizing the protocol for burrows in Section B.5.f. of the U.S. Fish and Wildlife Service-approved guidelines (U.S. Fish and Wildlife Service 1994).

- All projects in desert tortoise habitat will be reviewed by the BLM's wildlife staff to ensure that appropriate measures have been incorporated into the BLM authorization (e.g., material site, land sale, or off-highway vehicle event) to minimize the potential take of desert tortoise and loss of habitat.

- A BLM representative(s) will be designated and will be responsible for overseeing compliance with terms and conditions of all permitted activities and reporting requirements. The designated representative will provide coordination among the permittee, project proponent, the BLM, and the U.S. Fish and Wildlife Service.

Parameter – Mojave and Great Basin Desert Scrub and Salt Desert Shrub Habitats

SS-34: Identify the spatial and temporal habitat needs for the western burrowing owl to help achieve the desired range of conditions of the various vegetation communities (see the discussion on Vegetation Resources).

SS-35: Work with the U.S. Fish and Wildlife Service, Nevada Department of Wildlife and other partners (e.g., Great Basin Bird Observatory, Partners in Flight) to conduct breeding bird surveys to document the population status and trends of western burrowing owls.

SS-36: Inventory and monitor populations of the Sunnyside green gentian in conjunction with the development of the White River Valley ACEC management plan.

Parameter – Great Basin Sagebrush Habitat

SS-37: Manage greater sage-grouse habitat by implementing those actions and strategies identified in the BLM National Sage-Grouse Habitat Conservation Strategy, Greater Sage-Grouse Conservation Plan for

Nevada and Eastern California, and local greater sage-grouse conservation plans that the Ely District Office has the authority to implement (also see Appendix D).

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

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

SS-40: Outside of designated corridors, above-ground facilities will not be constructed within 0.25 mile of greater sage-grouse leks. Underground facilities will not be installed within 0.25 mile of greater sage-grouse leks unless the vegetation can be established to pre-disturbance conditions within a reasonable period of time. No new roads will be constructed within 0.25 mile of greater sage-grouse leks. Exceptions may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the project can be designed so that it will not affect breeding activity nor degrade the integrity of the habitat associated with the lek, or if the lek has been inactive for at least 5 consecutive years or the habitat has changed such that there is no likelihood that the lek will become active.

SS-41: Where appropriate, restrict permitted activities from March 1 through May 15 within 2 miles of an active greater sage-grouse lek (see **Map 8**).

SS-42: Where appropriate, restrict permitted activities from November 1 through March 31 within greater sage-grouse winter range (see **Map 8**).

SS-43: Survey all proposed ground disturbing activities in suitable pygmy rabbit habitat utilizing the appropriate protocol. Surveys will be completed by a qualified biologist approved by the Ely District Office (also see Appendix D).

Monitoring – Special Status Species

In conjunction with other private, state, or federal agencies, monitoring of known populations of special status species that are considered to be important indicators or obligates to a particular habitat community type (such as greater sage-grouse for sagebrush communities) will continue. Monitoring could consist of

intensive research projects or passive population inventories designed to help identify the extent of the populations and habitats being used. Inventories for special status species will be completed within the planning area and information will be used to measure the effectiveness in meeting management objectives on a landscape level and watershed basis.

Wild Horses

The Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195) requires the BLM to protect and manage wild horses in areas where they were found at the time of the Act, in a manner designed to achieve and maintain a thriving natural ecological balance in keeping with the multiple use management concept of public lands. These requirements are further detailed in the Standards and Guidelines for Wild Horses and Burros developed by the Northeastern Great Basin Resource Advisory Council and the Mojave/Southern Great Basin Resource Advisory Council.

Goals – Wild Horses

Maintain and manage healthy, self-sustaining wild horse herds inside herd management areas within appropriate management levels to ensure a thriving natural ecological balance while preserving a multiple-use relationship with other uses and resources.

Northeastern Great Basin Resource Advisory Council Standard. Healthy wild horse and burro populations exhibit characteristics of healthy, productive, and diverse population. Age structure and sex ratios are appropriate to maintain the long-term viability of the population as a distinct group. Herd management areas are able to provide suitable feed, water, cover and living space for wild horses and burros and maintain historic patterns of habitat use.

Mojave-Southern Great Basin Resource Advisory Council Standard. Wild horses and burros within herd management areas should be managed for herd viability and sustainability. Herd management areas should be managed to maintain a healthy ecological balance among wild horse and/or burro populations, wildlife, livestock, and vegetation.

Objectives – Wild Horses

To maintain wild horse herds at appropriate management levels within herd management areas where sufficient habitat resources exist to sustain healthy populations at those levels.

Herds will consist of healthy animals that exhibit diverse age structure, good conformation, and any characteristics unique to the specific herd.

Management Actions – Wild Horses

General Wild Horse Management

WH-1: Do not authorize domestic horse grazing permits within wild horse herd management areas (see **Map 9**).

WH-2: Coordinate wild horse management with other federal and state jurisdictions and resource management agencies.

WH-3: Do not construct permanent fences that prohibit the free-roaming behavior of wild horses or prevent wild horses from moving within herd management areas. Remove existing fences within herd management areas that restrict the free-roaming behavior of wild horses.

Parameter – Herd Management Area Establishment

WH-4: Manage wild horses within six herd management areas designated from herd areas (see **Map 9**) based on wild horse use and habitat suitability listed in **Table 12** covering approximately 3.7 million acres.

Table 12
Herd Management Areas

Herd Management Areas	Size Acres	Initial Appropriate Management Level
Pancake	855,000	240-493
Triple B	1,225,000	250-518
Antelope	331,000	150-324
Silver King	606,000	60-128
Eagle	670,000	100-210
Diamond Hills South[1]	19,000	10-22
	3,705,000	**810-1,695**

[1] Managed as a complex with Elko and Battle Mountain BLM.

WH-5: Remove wild horses and drop herd management area status for those areas that do not provide sufficient habitat resources to sustain healthy populations as listed in **Table 13.**

Parameter – Population Management

WH-6: Initially manage the appropriate management level as a range between 810 and 1,695 animals on all herd management areas within the planning area. Manage populations within ranges of appropriate management levels in which the upper level is based on available habitat and the lower level is based on the projected recruitment rate between gather cycles as developed from herd monitoring data (see **Table 12**).

Table 13
Herd Management Areas Dropped

Herd Management Areas	Public Land Area (acres)[1]
Antelope (west of Highway 93)	62,900
Applewhite	30,300
Blue Nose Peak	84,600
Cherry Creek (eastern portion)	3,200
Clover Creek	33,100
Clover Mountains	168,000
Delamar Mountains	183,600
Highland Peak (southern 2/3)	65,500
Jakes Wash	153,700
Little Mountain	53,000
Meadow Valley Mountains	94,500
Miller Flat	89,400
Moriah	53,300
Rattlesnake (southern 1/2)	37,400
Seaman	358,800
White River	116,300
Totals	**1,587,600**

[1] Rounded to hundreds.

WH-7: Base adjustments to appropriate management levels on monitoring data and perform adjustments typically, but not exclusively, in conjunction with the watershed analysis process.

WH-8: Manage sex ratios, phenotypic traits, reproductive cycles, and other population dynamics on a herd management area basis.

WH-9: Implement the following management actions for desert tortoise habitat (also refer to the discussion on Special Status Species). The Ely District Office does not plan to manage for any wild horses in desert tortoise habitat and this management only will be used if emergency gathers are needed in the future should wild horses reenter the area.

- For gathers: Trap sites should be located at previous trap site locations or in previously disturbed areas, where possible. All trap and holding sites, and access routes will be cleared by a qualified tortoise biologist before the trap and holding facilities are set up. The parcel will be surveyed for desert tortoise using survey techniques that provide 100 percent coverage.

- For gathers: Holding facilities will not be located inside ACECs. If possible, they should be located outside of desert tortoise habitat. If they cannot be located outside of desert tortoise habitat, they should be placed in previously disturbed areas.

- For gathers: All vehicle use in desert tortoise habitat will be restricted to existing roads and trails and within surveyed areas. Vehicles will not exceed 25 mph.

- For gathers: Trash and garbage will be contained in a covered, raven-proof trash receptacle and disposed of off-site in a designated facility. No trash or garbage will be buried at the sites.

- For gathers: Use of hay or grains as enticements into the traps will not occur within desert tortoise habitat to avoid the introduction of nonnative plant species. The feeding of hay or grains to animals will not be allowed within ACECs. The feeding of hay or grains to animals at holding facilities on public land within desert tortoise habitat will be avoided when possible.

Monitoring – Wild Horses

Aerial and ground census information periodically will be gathered to determine the number of adults and foals, colors, special characteristics, and overall health of each wild horse herd. Aerial counts will occur at a minimum of once every 3 years. Other herd data, including the ratio of mares to studs, age classes, colors, special characteristics, and overall health will be collected during gathers and at the time wild horses are processed for adoption. Wild horse actual use of forage will be estimated by multiplying inventoried or estimated numbers of horses by the length of grazing period on their summer and winter ranges. Utilization and trend study methods are the same as presented in the monitoring section for Livestock Grazing Management. Data collected in other studies, such as watershed analyses, monitoring of vegetation treatments, special status plants and animals, microbiotic crusts, wildlife, water resources, weeds, riparian, and wetland sources may be used to determine the effects of wild horses on these resources.

Cultural Resources

Management of cultural resources is directed primarily by two laws: the National Historic Preservation Act of 1966, as amended, and the Archaeological Resources Protection Act of 1979. The National Historic Preservation Act requires management and enhancement of significant historic properties and the Archaeological Resources Protection Act requires protection of archaeological resources (sites and objects of 100 years or more in age). The Federal Land Policy and Management Act directs the BLM to manage public lands on the basis of multiple use and to “protect the quality of historical resources and archaeological values.” This act provides for the periodic inventory of public lands and resources.

Goals – Cultural Resources

Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations (Federal Land Policy and Management Act, Section 103(c), 201(a), and (c); National Historic Preservation Act, Section 110(a); Archaeological Resources Protection Act, Section 14 [a]).

Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses (Federal Land Policy and Management Act, Section 103(c),

National Historic Preservation Act, Section 106, 110[a][2]) by ensuring that all authorizations for land use and resource use will comply with the National Historic Preservation Act, Section 106.

Northeastern Great Basin Resource Advisory Council Standard. Land use plan will recognize cultural resources within the context of multiple use.

Objectives – Cultural Resources

To protect and maintain cultural resources on BLM-administered land in stable condition. Appropriate management actions will be determined after evaluation and allocation of cultural resource use categories through cultural resource project plans.

Management Actions – Cultural Resources

General Cultural Resources Management

CR-1: Prioritize inventories to identify sites eligible to the National Register.

CR-2: Allocate all cultural resources in the planning area, whether already recorded or projected to occur on the basis of existing data synthesis (including cultural landscapes), or not projected to occur but later identified through inventory, to the following six uses according to their nature and relative preservation value: Scientific Use, Conservation for Future Use, Traditional Use, Public Use, Experimental Use, and Discharged from Management. See the Cultural category in the glossary for definitions. These use allocations pertain to cultural resources, not to areas of land. Each resource will be assigned to a primary use category, but that assignment does not preclude management from other use categories. Allocate and manage all sites determined eligible to the National Register of Historic Places to Scientific, Public, and Conservation for Future Use.

Focus on three of the six cultural resource use allocations: Scientific Use, Public Use, and Conservation for Future Use. These allocations currently address the majority of issues within the planning area and, therefore, are of high importance.

Do not emphasize the remaining three cultural resource use allocations – Traditional Use, Experimental Use, and Discharged from Management – for the following reasons:

- Traditional Use. Several recent and extensive efforts have identified no Traditional Cultural Properties within the planning area. Appropriate measures for identification and evaluation of Traditional Cultural Properties, as well as assignment to use categories, will be taken during tribal consultation and public involvement in planning and project implementation. Although currently not identified as such, several historic cemeteries may qualify as Traditional Cultural Properties.

- Experimental Use. Because there are few activities in the planning area where the destructive nature of impacts on archaeological sites are uncertain or unknown, this allocation will not be emphasized.

- Discharged from Management. This cultural resource use allocation may occur. However, this will not be emphasized because conducting a program driven by this goal would defeat the long-term preservation of these resources.

CR-3: Allocate and manage all sites determined not eligible to the National Register of Historic Places and not containing archaeological resources as Discharged from Management Use.

CR-4: Pending completion of watershed, site type, or site-specific Cultural Resource Project Plans, direct inventory priorities to testing high-medium-low predictions found in archaeological predictive models, including the Gnomon forecast model (Gnomon 2004).

CR-5: Continue to educate the public on Cultural Heritage resources, their importance as a non-renewable resource, and the laws that provide for their preservation. Work with local groups and volunteers to enhance interpretive capabilities and provide educational opportunities.

CR-6: The following thirteen classes of site types found in the planning area have specific management needs based on each site type. Priorities for inventory and appropriate management actions have been identified for each site type.

Parameter – Cultural Resource Use Allocation: Historic Roads, Trails, Railways, Highways, and Associated Sidings and Stations

- Management:
  - Perform an intensive archaeological inventory of the corridor of each site to establish baseline information on a priority basis as identified in Cultural Resources Project Plans.
  - Write an historic context report for each resource on a priority basis as identified in Cultural Resource Project Plans.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Inventory road/trail/railway/highway related sites (e.g., stage stops, stage stations) and record the condition on a priority basis as identified in Cultural Resources Project Plans.
  - Allow excavation subject to management plan with appropriate research design (which conserves samples for future use).
- Conservation for Future Use:
  - Post informational signs at all major intersections along existing Public Use sites.
  - Allow excavation subject to management plan with appropriate research design (which conserves samples for future use).
  - Inventory road/trail/railway/highway related sites (e.g., stage stops, stage stations) and record the condition.

- Public Use:
  - Post informational signs at all major intersections along Public Use sites as appropriate.
  - Prepare activity level cultural resource project plans for public use sites to identify interpretive needs including signs, interpretive kiosks, driving guides, etc.
  - Complete National Register nominations for all Public Use sites on a priority basis as identified in Cultural Resource Project Plans.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated National Scenic and Historic Trails
  - Routes under national study

Manage the cultural historic landscape (setting) around the Pony Express Trail and California Trail (National Historic Trail) according to the National Historic Preservation Act and current policy regarding Historic Landscape Management along National Historic Trails and current policy regarding the Determination of the Direct Effects Analysis Area for National Historic Trails. The area of direct effect around national historic trails is established as 1 mile from centerline, although in some cases, the area of effect may be larger or smaller than 1 mile from centerline. Manage designated national historic trails according to the National Scenic and Historic Trail Act (16 United States Code sections 1241-1251) and the BLM's National Scenic and Historic Trails Strategy and Work Plan (BLM 2006).

Allocate and manage all National Register eligible historic roads, trails, railways, highways, and associated sidings and stations for Scientific, Conservation, and Public Use. No fee sites will be established.

Allocate national historic trails to Public Use and prepare Cultural Resource Project Plans to better balance Public, Scientific, and Conservation Use. Establish fee sites at Public Use sites as appropriate.

Parameter – Cultural Resource Use Allocation: Rock Art Sites

- Management:
  - Consider for allocation to Public Use, any rock art site with evidence of public use.
  - Allocate any rock art site with no evidence of public use to Conservation Use and/or Scientific Use and consider those sites for public use as appropriate.
  - Preserve in place all rock art sites eligible to the National Register of Historic Places under Criterion c. Do not discharge these sites from management.
  - Use the best and most accurate technologies available to photograph and gather locational information at all rock art panels (for example, digital photographs and global positioning system readings with position error no greater than 20 feet).
  - Take detailed measured drawings and sub-meter global positioning system locations of all panels.
  - Allow Scientific Use subject to management plans that minimize physical damage to rock art.
  - Conduct condition monitoring of rock art sites on at-risk/threatened rock art sites annually.
  - Limit livestock and human contact with rock art panels through physical barriers (fences or natural barriers such as plantings or boulder placement).

  - Allow emergency stabilization if natural or cultural threats are causing loss of integrity to rock art.
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Permit surface collection of artifacts on non-rock art portions of sites under the Archaeological Resources Protection Act of 1979 if there is threat of loss or destruction.
- Public Use:
  - Post informational signs on rock site etiquette and the Archaeological Resources Protection Act of 1979 at all Public Use sites.
  - Develop site-specific recreation management plans/interpretative plans for all Public Use rock art sites before implementing Cultural Resource Project Plan actions.
  - Consider installing at least one interpretative trail/footpath at each rock art site allocated to Public Use.
  - Install visitor registers at all Public Use sites.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Those areas containing rock art identified for prescribed or wildland fire use
  - Existing designated sites

Allocate and manage all National Register eligible rock art sites for Scientific, Conservation, and/or Public Use, and continue to develop interpretative sites with priority placed on maintaining and improving existing interpretative facilities.

Establish fee sites at Public Use rock art sites as appropriate. American Indians will be exempt from fees only when visiting rock art sites for religious practices.

Parameter – Cultural Resource Use Allocations: Historic Townsites, Historic Mining Camps, Historic Mining Districts and Related Historic Buildings and Standing Structures, and Historic Racetracks

- Management:
  - Stabilize or rehabilitate standing structures on a priority basis as identified in Cultural Resources Project Plans and consistent with the Memorandum of Agreement with the Nevada Division of Minerals for Mine Safety Closures (State Protocol Agreement, page 38, Appendix F, Part B: Hazard Abatement).
  - Write an historic context report and an historic structure report for each mining district based on priorities identified in Cultural Resource Project Plans.
  - Complete an intensive archaeological inventory of the resource (townsite, camp, or district) for baseline information based on priorities identified in Cultural Resource Project Plans.
  - Follow Appendix H of the State Protocol Agreement for recording all standing structures for baseline information based on priorities identified in Cultural Resource Project Plans.
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Encourage the use of site stewards for monitoring.

- Scientific Use:
  - Allow excavation subject to management plan with appropriate research design (which conserves samples for future use).
  - Post signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 as appropriate.
  - Permit surface collection of artifacts under the Archaeological Resources Protection Act of 1979 if there is threat of loss or destruction.
  - Permit data recovery in those instances where future protection is not feasible.
- Conservation for Future Use:
  - Allow excavation subject to management plan with appropriate research design (which conserves samples for future use).
  - Post signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 as appropriate.
  - Perform stabilization and/or rehabilitation of standing structures on a priority basis as identified in Cultural Resource Project Plans.
- Public Use:
  - Place at least one kiosk with interpretation panel for each resource.
  - Develop site-specific information brochures for all Public Use sites.
  - Complete National Register nominations for all Public Use sites based on priorities developed in Cultural Resource Project Plans.
  - Consider preservation and reuse of historic buildings as appropriate.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Those areas containing historic townsites, mining camps, mining districts, buildings, standing structures and historic racetracks identified for prescribed or wildland fire use
  - Existing designated sites

Allocate and manage all National Register eligible sites with evidence of unauthorized excavation for Conservation Use and/or Scientific Use in order to perform data recovery in those instances where future protection is not feasible. Allocate and manage the remaining National Register eligible sites for Scientific and/or Public Use.

Allocate and manage all of the National Register eligible sites with standing structures for Conservation and/or Public Use.

Establish fee sites at Public Use sites as appropriate.

Parameter – Cultural Resource Use Allocations: Historic Cemeteries and Isolated Historic Gravesites

- Management:
  - Allow preservation in place and emergency stabilization if natural or cultural threats are causing loss of integrity to cemetery (including wood treatment and stone repair).
  - Write historic context report and equivalent of historic structure report for all cemeteries based on priorities identified in Cultural Resource Project Plans.
  - Follow Appendix H of the State Protocol Agreement for recording all standing structures for baseline information based on priorities identified in Cultural Resource Project Plans.
  - Follow Appendix H of the State Protocol Agreement based on priorities identified in Cultural Resource Project Plans.
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Install visitor registers and create informational brochures.
  - Install fences or physical barriers.
  - Install physical protection of historic cemeteries and isolated gravesites in the Cultural Resource Project Plans.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979.
  - Encourage the use of site stewards for monitoring.
  - If established, allocate and manage for Traditional Use.
- Scientific Use:
  - No scientific excavation of cemeteries except in those instances where physical disturbance is unavoidable and scientific study of human remains and associated funerary objects, and/or burial patterns, may be appropriate to answer questions about demography, health, and/or status, as well as site significance.
- Public Use:
  - Prepare National Register nominations, with the expectation that historic cemeteries and isolated gravesites that are no longer in use and part of historic townsites, landscapes, or themes, will meet National Register criteria.
- Discharged from Management:
  - Discharge from Management under the Act of June 14, 1926, commonly known as the Recreation and Public Purposes Act, to a public (government) body requesting transfer with conditions/stipulations that maintain historic character.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Those areas containing historic cemeteries or isolated gravesites identified for prescribed or wildland fire use
  - Existing designated sites

Allocate and manage all sites for Conservation and/or Public Use.

Establish fee sites at Public Use sites as appropriate.

Parameter – Cultural Resource Use Allocations: Ethnic Arboreal Narratives and Graphics, and Bow Stave Trees

- Management:
  - Perform detailed recordation of all arboreal narratives, graphics, and bow stave trees on a priority basis as identified in Cultural Resource Project Plans. Recordation will include, for example, detailed measured drawings, digital photographs, and sub-meter global positioning system locational information.
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Develop management plans and National Register nomination addressing collection/curation policy for specimens.
  - Perform a reconnaissance inventory of all threatened aspen stands based on priorities identified in Cultural Resource Project Plans.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 as appropriate.
  - Encourage the use of site stewards for monitoring.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resources Project Plans
  - Those areas containing aspen stands identified for prescribed or wildland fire use
  - Oldest aspen groves with known carvings
  - Existing designated sites

Allocate and manage all National Register eligible sites for Scientific Use while promoting public access.

Parameter – Cultural Resource Use Allocations: Paleoindian Sites

The term Paleoindian is defined as follows: “Paleoindian or Pre-Archaic has been attributed to include both fluted and stemmed complexes as well as being reserved for complexes containing fluted points and extinct megafauna. The term Paleoindian is used here to denote archeological sites and artifact assemblages dating between 12,000 to 8,000 years Before Present, which include fluted or stemmed points, and possibly crescents. Under this broad Paleoindian umbrella there are several local traditions and possible variants that may represent different peoples using the land in different ways. This includes Clovis, Folsom, Western Pluvial Lakes Tradition, and Stemmed Complex” (Sherve 2001).

- Management:
  - Due to fragility of these sites to unauthorized collection, do not allocate these sites to public use, unless disclosure of site location does not harm but benefit the resource.
  - Complete National Register nominations for all sites on a priority basis as identified in Cultural Resource Project Plans.
  - Develop partnerships to encourage scientific research on Paleoindian sites in the planning area.

  - Address research and preservation potential in Cultural Resource Project Plans.
  - Perform site recordation to include, for example, collection of sub-meter global positioning system locational information of all diagnostic Paleoindian tools when located.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Allow excavation subject to management plan with appropriate research design to conserve samples for future use.
- Conservation Use:
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 where evidence of unauthorized collection is evident.
  - Conduct annual monitoring of all Paleoindian sites on a priority basis as identified in Cultural Resource Project Plans.
  - Allow activities that do not have direct impacts to the integrity of the sites.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Allocate and manage all National Register eligible sites for Scientific and/or Conservation Use.

Parameter – Cultural Resource Use Allocations: Formative Puebloan Sites

- Management:
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Allow preservation in place and emergency stabilization if natural or cultural threats are causing loss of integrity to sites.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979.
  - Develop partnerships to encourage scientific research on formative Puebloan sites.
  - Conduct annual monitoring of all formative Puebloan sites based on priorities developed in Cultural Resource Project Plans.
  - Allocate no more than one site per watershed to Public Use.
  - Address Scientific, Conservation, and Public Use, as well as public participation in research on formative Puebloan sites in Cultural Resource Project Plans.
  - Protect formative Puebloan sites from vehicular traffic in the event of fire on or near the sites.
- Scientific Use:
  - Allow excavation/scientific research subject to management plan with appropriate research design (which maximizes conservation of the site for future use and also maximizes public participation in the research).
- Conservation for Future Use:
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 only where public knowledge is inevitable.

- Public Use:
  - Install visitor registers and create informational brochures based on priorities established in Cultural Resource Project plans.
  - Develop specific recreation management plan/interpretative plans for all formative Puebloan sites developed for Public Use.
  - Perform surface collection of artifacts on all sites allocated to Public Use prior to Public Use designation.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Allocate and manage all National Register eligible sites for Scientific, Conservation Use, and Public Use.

Establish fee sites at Public Use sites as appropriate.

Parameter – Cultural Resource Use Allocations: Rockshelter and Cave Sites

- Management:
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Preserve in place and allow emergency stabilization if natural or cultural threats are causing loss of integrity to sites.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 where evidence of ongoing public use exists.
  - Conduct a Class II inventory of areas identified as high potential for aboriginal site occurrence on a priority basis as identified in Cultural Resource Project Plans.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Encourage partnerships that assist the Ely District Office in evaluating loss of scientific data due to vandalism and in estimating cost of restoration and repair.
  - Develop partnerships for excavation/scientific research to assist the Ely District Office to understand the paleo-environmental record.
- Conservation for Future Use:
  - Evaluate the cost of restoration and repair as soon as vandalism is detected.
- Public Use:
  - Install visitor registers and create informational brochures based on priorities established in Cultural Resource Project plans.
  - Develop specific recreation management plan/interpretative plan for all rockshelter cave sites developed for Public Use.
  - Perform surface collection of artifacts on all sites allocated to Public Use prior to Public Use designation.

- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Those areas containing rockshelters identified for prescribed or wildland fire use
  - Existing designated sites

Allocate and manage all National Register eligible sites for Scientific, Conservation Use, and Public Use.

Establish fee sites at Public Use sites as appropriate.

Parameter – Cultural Resource Use Allocations: Prehistoric Complex Sites, Campsites, or Specialized Activity Areas

- Management:
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979, where evidence of public use exists.
  - Develop Cultural Resource Project Plans that further define this class of sites and clarify acceptable management actions.
  - Allow excavation subject to management plan with appropriate research design (which conserves samples for future use).
  - Subject all sites initially allocated to Conservation, Scientific, Experimental, or Discharged from Management Use to site-specific activity plans that preserve portions of the sites for future use.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Complete National Register nominations for all sites allocated to Scientific Use on a priority basis as identified in Cultural Resource Project Plans.
- Public Use:
  - Continue to produce materials and programs on “Leave What You Find” principles and environmental ethics.
  - Develop and produce a brochure covering the topic “What Do You Do If You Find an Artifact?”.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Allocate and manage 90 percent of the National Register eligible sites for Conservation and/or Scientific Use and up to 10 percent of the sites per watershed for Experimental Use.

Parameter – Cultural Resource Use Allocations: Toolstone Sources or Quarries

- Management:
  - Evaluate fire potential and remove fuels where there is threat of loss.

  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979, where evidence of public use exists.
  - Develop Cultural Resource Project Plans that include addressing mineral collection of non-artifacts from quarry/source locations.
  - Implement photographic monitoring for all obsidian sources.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Compile National Register nominations for all sites allocated to Scientific Use on a priority basis as identified in Cultural Resource Project Plans.
- Public Use:
  - Develop and produce a brochure to enable the public to distinguish between artifacts and mineral specimens.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Allocate and manage all obsidian toolstone sources/quarries for Scientific and/or Conservation Use; 90 percent of all other National Register eligible material sources/quarries for Scientific and/or Conservation Use; and up to 10 percent of all other National Register eligible material sources/quarries for Experimental Use.

Parameter – Cultural Resource Use Allocations: Historic Ranching and Livestock-related Historic Sites, Buildings, Standing Structures, and Landscapes

- Management:
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 where evidence of public use exists.
  - Write historic context reports on a priority basis as identified in Cultural Resource Project Plans.
  - Write historic structure reports on a priority basis as identified in Cultural Resource Project Plans.
  - Complete Level I documentation (measured drawings, plans, elevations, photos, and narratives) on all standing structures on a priority basis as identified in Cultural Resource Project Plans.
  - Obtain photo documentation of historic features and landscapes.
  - Encourage the use of site stewards for monitoring.
- Scientific Use:
  - Allow excavation subject to management plan with appropriate research design (that conserves samples for future use).
- Conservation Use:
  - Emphasize conservation of the setting.
  - Perform stabilization and/or rehabilitation of standing structures on a priority basis as identified in Cultural Resource Project Plans.

- Discharged from Management:
  - Subsequent to scientific use, discharge sites when preservation in place is impractical.
- Public Use:
  - Complete National Register nominations for all Public Use sites on a priority basis as identified in Cultural Resource Project Plans.
  - Consider standing structures for adaptive uses.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Manage and allocate sites for Public Use on a watershed basis. Allocate and manage all of the National Register eligible sites for Scientific Use and/or Public Use.

Parameter – Cultural Resource Use Allocations: Ethnohistoric Sites, Sacred Sites, Traditional Use Areas, Traditional Cultural Properties

- Management:
  - When identified, describe locations and boundaries of Ethnohistoric Sites, Sacred Sites, Traditional Use Areas, and Traditional Cultural Properties with global positioning systems or other appropriate technology.
  - When identified, record Ethnohistoric Sites, Sacred Sites, Traditional Use Areas, and Traditional Cultural Properties.
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Complete National Register nominations on a priority basis as identified in Cultural Resource Project Plans.
  - Pending approval of Cultural Resource Project Plans, allocate all sites to Conservation use.
  - Encourage the use of site stewards for monitoring.
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Allocate and manage all National Register eligible Ethnohistoric Sites primarily for Conservation Use unless subject to Cultural Resource Project Plans.

Allocate and manage all identified Traditional Cultural Properties primarily for Traditional Use.

Allocate and manage all identified Sacred Sites or Traditional Use Areas for Conservation Use.

Parameter – Cultural Resource Use Allocations: “Other” Sites

“Other” is defined as those sites not included in any of the above 12 site types.

- Management:
  - Evaluate fire potential and remove fuels where there is threat of loss.
  - Post appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979, where evidence of public use exists.
  - Encourage the use of site stewards for monitoring.
- Public Use:
  - Due to sensitivity of some of these resources, monitor public use on these sites (excluding the agave roasting pits).
- Priorities for Inventory:
  - Potential threats identified in Cultural Resource Project Plans
  - Existing designated sites

Allocate and manage all National Register eligible sites for Scientific and/or Conservation Use with public use being monitored. Permit Scientific Use if it does not destroy features.

Allocate all of the agave roasting pits to Scientific, Conservation, and/or Public Use.

Monitoring – Cultural Resources

Monitoring of cultural resource sites within the planning area will continue, with assistance from the Nevada Heritage Site Stewardship Program and/or other volunteer groups. Identified sites will be monitored to determine condition, impacts, deterioration, and use of such sites. The condition of the sites and other data collected will be entered into the cultural resources database. If a site is listed on or is eligible to the National Register of Historic Places, consultation with the State Historic Preservation Office will be conducted, when necessary, to determine the appropriate action to stop the deterioration of the site or to assist with mitigation. The effectiveness of presentations to the public, educational brochures, interpretative materials, informational materials and displays, scientific research collections and materials, and the site steward program also will be monitored. In addition to monitoring specific sites, the effectiveness of archaeological predictive models developed to assist the Ely District Office in predicting site locations and densities will be monitored. The predictive models will be updated as information on cultural resource sites within the planning area is obtained prior to BLM management actions and issuing approvals for non-BLM actions.

Paleontological Resources

The BLM has authority to manage and protect paleontological resources under the Federal Land Policy and Management Act of 1976, the National Environmental Policy Act of 1969, and various sections of Part 43 of the Code of Federal Regulations.

Goals – Paleontological Resources

Identify and manage at-risk paleontological resources (scientific value); preserve and protect vertebrate fossils through best science methods; and promote public and scientific use of invertebrate and paleobotanical fossils.

Objectives – Paleontological Resources

To manage fossil sites with high scientific value in a stable condition, while allowing appropriate research and casual public collecting.

Management Actions – Paleontological Resources

General Paleontological Resource Management

PAL-1: Allocate and manage all vertebrate sites for Scientific Use.

PAL-2: Allocate and manage all invertebrate and paleobotanical sites for Public and/or Scientific Use.

PAL-3: Change the use allocation without a plan amendment if another use is evident or proposed.

Parameter – Trilobite Collecting

PAL-4: Establish a no-fee-based registration system.

PAL-5: Establish the following priorities for Inventory:

- Predicted threats identified in Cultural Resource Project Plans
- Existing designated sites
- Lands identified for disposal

Monitoring – Paleontological Resources

Paleontological resource sites will be monitored to determine if site conditions are stable and to assist in management actions to mitigate deteriorating conditions.

Visual Resources

Section 102(8) of the Federal Land Policy and Management Act declares that public land will be managed to protect the quality of scenic values and, where appropriate, to preserve and protect certain public land in its natural condition. NEPA, section 101(b), requires federal agencies to ". . . assure for all Americans . . . esthetically pleasing surroundings." Section 102 of NEPA requires agencies to ". . . utilize a systematic, interdisciplinary approach which will ensure the integrated use of . . . Environmental Design Acts in the planning and decision making . . ." process. Guidelines for the identification of visual resource management classes on public land are contained in BLM Manual Handbook 8410-1, Visual Resource Inventory. New technology in the form of geographic information systems, as well as changing public perceptions about visual resources led to the development of a new inventory for the planning area.

Goals – Visual Resources

Manage public land actions and activities in a manner consistent with Ely District Office visual resource management class objectives.

Objectives – Visual Resources

To implement multiple use activities within the planning area with mitigation measures consistent with the visual resource management classes.

Management Actions – Visual Resources

VR-1: Manage designated wilderness, wilderness study areas, and some special designation areas such as ACECs (see the discussion on Special Designations) for scenic qualities under Visual Resource Management Class I objectives.

VR-2: Manage wilderness study areas released by Congress at the baseline visual resource inventory class.

VR-3: Manage visual resources in accordance with the following visual resource management classes (approximate acreages – see **Map 10**).

Class I: 1,138,730 acres
Class II: 1,966,212 acres
Class III: 5,205,134 acres
Class IV: 3,146,526 acres

VR-4: Manage the Pony Express National Historic Trail corridor under Visual Resource Management Class II objectives.

Monitoring – Visual Resources

Monitoring will be conducted for all projects (including, but not limited to projects associated with any developments, land alterations, vegetation manipulation, etc.) that could potentially affect visual resources. These projects will be monitored to ensure compliance with established visual resource management classes. Monitoring will include the use of the visual contrast rating system, described in BLM Manual 8400 (BLM 1984).

Lands and Realty

Section 102(a)(1) of the Federal Land Policy and Management Act requires that public land be retained in federal ownership unless disposal of a particular parcel will serve the national interest. Acquisition of land to consolidate ownership patterns will provide for more efficient land management and administration for both

public and private landowners. Retention and acquisition of land containing significant resource values will provide for long-term protection and management of those values.

Rights-of-way and other land uses are recognized as major uses of the public lands and are authorized pursuant to sections 302 and 501 of the Federal Land Policy and Management Act. Section 503 of the Federal Land Policy and Management Act provides for the designation of utility corridors and encourages utilization of rights-of-way in-common to minimize environmental impacts and the proliferation of separate rights-of-way. It is BLM policy to encourage prospective applicants to locate their proposals within corridors. Only facilities and uses that are consistent with the special designation associated with that area will be permitted in avoidance areas. Designation of exclusion zones—those areas where no new rights-of-way will be allowed—will provide protection of lands and resources with values that are not compatible with rights-of-way or other land uses.

The acquisition of legal public and administrative access is required to ensure continued effective administration and public use of these lands. This need becomes more acute as public use of these lands increases and as landowners become more aware of the value of public and private land for recreation and other purposes. Land tenure adjustment actions (exchanges or fee purchases) can be a valuable tool for access acquisitions. However, without careful review, lands actions, particularly disposals, can result in lost access.

Section 204 of the Federal Land Policy and Management Act gives the Secretary of the Interior the authority to make, modify, extend, or revoke withdrawals and mandates periodic review of existing withdrawals.

Goals – Lands and Realty

Manage public lands in a manner that:

- Allows the retention of public land with high resource values;
- Consolidates public land patterns to ensure effective administration and improve resource management;
- Makes public lands that promote community development available for disposal;
- Meets public, local, state, and federal agency needs for use authorizations such as rights-of-way, permits, leases, and easements while avoiding or minimizing adverse impacts to other resource values; and
- Utilizes withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the desired purpose.

Objectives – Lands and Realty

To respond to public, local, state, and federal agency needs for land for community development, utility and other associated rights-of-way, communication sites, and other allowed uses of BLM-administered lands.

Management Actions – Lands and Realty

Parameter – Retention

LR-1: Retain lands or interest in lands within designated critical habitat for federally listed threatened and endangered species unless the disposal results in the acquisition of land with higher quality habitat.

LR-2: Retain lands within ACECs.

LR-3: Under authority of the Federal Land Policy Management Act, Section 203, retain portions of the National Trails System including the corridors of both the Pony Express National Historic Trail and the California National Historic Trail within the designated corridor. This limitation is without regard for eligibility to the National Register of Historic Places and is instead tied to the congressionally-designated corridor.

LR-4: Prior to disposal, review all lands for National Natural Landmark eligibility and retain lands containing resources qualifying as National Natural Landmarks.

LR-5: Retain all public lands with springs and creeks that contain fisheries in federal ownership unless the disposal of these lands will result in the acquisition of lands with higher quality habitat.

LR-6: Retain lands in areas with high recreation value, unless state and county entities show an over-riding need through an acceptable recreation management plan.

Parameter – Disposal (Sales, Exchanges, Recreation and Public Purposes Act, and Airport Conveyances)

LR-7: In accordance with Section 7 of the Taylor Grazing Act, 43 U.S.C. 315f, and Executive Order No. 6910, the described lands are hereby classified for disposal by sale, exchange, Recreation and Public Purposes Act, and airport conveyances.

LR-8: In accordance with the Lincoln County Conservation, Recreation, and Development Act of 2004, the Ely District Office will dispose of not more than 90,000 acres of public land in Lincoln County identified for disposal by the Ely District Office through the Ely Resource Management Plan or a subsequent amendment to the land use plan. The Ely District Office and the County jointly will select the parcels of land to offer for sale. The lands identified in the approved plan upon signature of the Record of Decision will be withdrawn from:

- All forms of entry and appropriation under the public land laws, including the mining laws;

- Location, entry, and patent under the mining laws; and
- Operation of the mineral leasing and geothermal leasing laws.

Once the lands are disposed of by a sale or an election by the County to obtain land under the Recreation and Public Purposes Act, the withdrawal will no longer apply.

LR-9: In accordance with the Lincoln County Conservation, Recreation, and Development Act of 2004, up to 15,000 acres of public land in Lincoln County could be conveyed to Lincoln County for open space and parks.

LR-10: In accordance with the Lincoln County Conservation, Recreation, and Development Act of 2004, approximately 4,780 acres of public land in Lincoln County could be conveyed to the State of Nevada for state park expansion.

LR-11: In accordance with the White Pine County Conservation, Recreation, and Development Act of 2006, the Ely District Office will dispose of not more than 45,000 acres of public land in White Pine County identified for disposal by the Ely District Office through the Ely Resource Management Plan or a subsequent amendment to the land use plan. The Ely District Office and the County will jointly select the parcels of land to offer for sale. The lands identified in the approved plan upon signature of the Record of Decision will be withdrawn from:

- All forms of entry and appropriation under the public land laws, including the mining laws;
- Location, entry, and patent under the mining laws; and
- Operation of the mineral leasing and geothermal leasing laws.

Once the lands are disposed of by a sale or an election by the County to obtain land under the Recreation and Public Purposes Act, the withdrawal will no longer apply.

LR-12: In accordance with the White Pine County Conservation, Recreation, and Development Act of 2006, the following lands will be conveyed to the State of Nevada, subject to valid existing rights, for no consideration, all right, title, and interest if the state and White Pine County enter into a written agreement supporting the conveyances.

- Approximately 6,265 acres identified as “Steptoe Valley Wildlife Management Area Expansion Proposal”; and

- Approximately 658 acres identified as “Ward Charcoal Ovens Expansion.”

LR-13: In accordance with the White Pine County Conservation, Recreation and Development Act of 2006, the following lands will be conveyed to White Pine County, subject to valid existing rights, for no consideration, all right, title, and interest:

- Approximately 1,550 acres identified as “Airport Expansion”; and
- Approximately 200 acres identified as “Industrial Park Expansion.”

LR-14: The U.S. mineral estate inside or outside the designated disposal areas may be conveyed to consolidate surface and sub-surface management ownership, if there is no known mineral value present, or if the reservation of mineral rights by the U.S. is interfering with or precluding appropriate non-mineral development that is considered to be a more beneficial use of the land. Conveyance of mineral interest shall be made only to the owner of record of the surface, upon payment of administrative costs and the fair market value of the interests being conveyed.

LR-15: Subject all Land Tenure adjustments to valid existing rights at the time of disposal.

LR-16: Dispose of lands outside of designated disposal areas to resolve unauthorized use of public land only when there are no other practical means of resolution.

LR-17: Maintain access to recreation areas.

LR-18: Exchanges. Consider land exchanges that serve the national interest and are beneficial to Ely District Office programs or that support the programs of other agencies, per Sections 102, 205, and 206 of Federal Land Policy Management Act.

LR-19: Recreation and Public Purposes Act. Convey or lease public lands only for an established or definitely proposed project for which there is a reasonable timetable of development and satisfactory development and management plans. Convey no more land than is reasonably necessary for the proposed use.

LR-20: A total of 75,758 acres are available for potential disposal: 57,039 acres in Lincoln County; 0 acres in Nye County; and 18,719 acres in White Pine County. See **Map 11**. (See Appendix B.) Federal Land Policy and Management Act of 1976, Sections 203 and 209, states that sales are the preferred method of disposal.

LR-21: If rights-of-way are approved for power plants, dispose of up to 4,500 acres in White Pine County by direct sale.

LR-22: Dispose of 40 acres located at Township 6 South, Range 57 East, Section 25, NW¼ NW¼ by direct sale to resolve a long standing agricultural lease that has several structures on it.

LR-23: If a right-of-way is approved for a power plant, dispose of up to 640 acres in Lincoln County by direct sale.

LR-24: Use the following criteria for disposal. These criteria may be modified as appropriate in the future.

- Allow land disposal of parcels containing National Register eligible sites when mitigation and/or data recovery has occurred prior to patent.

- Allow disposal of lands that are difficult to manage and are not suitable for management by another federal department or agency.

- Allow disposal of lands when disposal will serve important public objectives, including but not limited to community expansion or economic development; disposal could not be achieved prudently or feasibly on land other than public lands; and disposal outweighs other public objectives or values.

- Process existing Desert Land Entry, Carey Act, and Indian Allotment applications. If the application is cancelled, relinquished, or rejected, the lands could not be applied for again. Reject applications for Desert Land Entries, Carey Act, or Indian Allotments in designated disposal areas if they are located within a closed water basin unless existing water rights are held.

- Allow land disposals within herd management areas when the disposal 1) will not prohibit free roaming behavior within or between areas inside the herd management area, 2) will not eliminate so much habitat within the herd management area that a significant reduction of the appropriate management levels will result, and 3) will be subject to mitigation.

- Dispose of lands only in identified areas (see Appendix B). Exceptions will be Recreation and Public Purposes Act, Airport Conveyances, existing Desert Land Entries, Carey Act and Indian Allotments, and disposals to resolve trespasses.

- The Ely District Office will provide public notice prior to disposal of public land under military operations areas acknowledging the risks associated with the development of the land and the possible restrictions to uses that would be compatible with the military operations areas.

LR-25: The BLM will work cooperatively with tribes when specific expansion proposals are provided to BLM in the future. They will be reviewed and processed according to appropriate BLM policy related to the expansion of tribal lands.

Parameter – Acquisitions

LR-26: Limit acquisition of lands to situations where no other reasonable alternative exists. Coordinate on acquisitions with federal, state, and county agencies, and other interested parties prior to the acquisition. Consider private lands or rights for acquisition from willing sellers.

- Consider acquisition of lands or interest in lands with at-risk or high resource values or those characteristics that contribute to restoration, healthy watersheds, or other resource goals (e.g., ACECs, wilderness study areas, habitat for threatened and endangered species, cultural resources, and designated wilderness) in the planning area, or those lands that also provide for environmentally responsible commercial activities.

- Consider split-estate where appropriate to improve resource management while protecting resource values.

LR-27: Acquire legal public or administrative access from willing landowners, where a public demand or administrative need exists.

LR-28: Manage newly acquired lands in the same manner as comparable surrounding public lands or in conformance with established guidelines for the special management area.

LR-29: Prior to the acquisition of non-federal lands, conduct assessments (e.g., noxious weed) to enable the authorized officer to factor the cost of weed control into the acquisition decision.

Parameter – Withdrawals

LR-30: Implement proposed withdrawals, if appropriate, consisting of the BLM Caliente Administrative Site (2 acres), Murry Springs Watershed (the municipal water supply for the City of Ely) (1,260 acres), and the entrance area from Baker to Great Basin National Park (6,720 acres).

LR-31: Recommend withdrawal of lands with sensitive or high resource values (e.g., ACECs) from surface and mineral entry (see the discussion on Geology and Mineral Extraction).

LR-32: Consider requests by other federal agencies for new withdrawals, withdrawal relinquishments, and modifications on a case-by-case basis.

LR-33: Withdraw the 80-acre area around Ash Springs (Township 5 North, Range 61 East, Section 31, SW¼ SW¼, and Township 6 North, Range 61 East, Section 6, Lot 8, Mount Diablo Meridian) from settlement, sale, location, or entry (with the exception of a no surface occupancy stipulation for fluid mineral leasing).

Parameter – Corridors

LR-34: Manage corridors in the RMP planning area as follows (see **Map 12**):

A. Retain a 1,000-foot wide corridor centered on existing telephone fiber optic lines, from within Township 11 South, Range 71 East, Section 30 in an easterly direction to the Arizona state line.

B. Retain the 0.5 mile wide east-west Falcon to Gonder corridor interconnecting with the Ely-to-Utah State Line portion of the Southwest Intertie Project corridor.

C. Retain the Ely to Utah State Line portion of the Southwest Intertie Project corridor at 0.5 mile wide.

D. Designate the approved Southwest Intertie Project corridor at 0.75 mile wide from the Elko/White Pine County line to the point where it parallels Highway 93 and the Pahranagat Wildlife Refuge, and at 0.5 mile wide from that point to the Clark County line.

E. Maintain the Moapa corridor at 0.5 mile wide.

F. Maintain the corridors designated by the Lincoln County Conservation, Recreation and Development Act at 0.5 mile wide.

G. Designate a new, 0.5-mile-wide corridor, beginning near the Atlanta Mine where the Lincoln County Conservation, Recreation, and Development Act corridor ends; following a northerly direction along the west side of Spring Valley; and ending at the Southwest Intertie Project corridor.

Parameter – Communication Sites

LR-35: Authorize communication site locations that support community and economic development with an emphasis on co-location of sites.

LR-36: Establish wilderness study areas as avoidance areas.

LR-37: Establish designated wilderness as exclusion areas.

LR-38: Establish ACECs as avoidance or exclusion areas.

LR-39: Coordinate, as appropriate, with appropriate local, state, and federal agencies on siting and construction for all communication towers.

Parameter – Land Use Authorizations (Rights-of-Way, Permits, Leases, Easements, and Unauthorized Use)

LR-40: Establish wilderness study areas as avoidance areas.

LR-41: Establish designated wilderness as exclusion areas.

LR-42: Establish ACECs as avoidance or exclusion areas (see the discussion on Special Designations).

LR-43: Coordinate, as appropriate, with appropriate local, state, and federal agencies on siting and construction for rights-of-way proposals.

LR-44: Consider existing material site rights-of-way in ACECs (both developed and undeveloped) authorized under the provisions of the Federal Highway Aid Act as valid existing rights and consistent with the land use plan. Material site rights-of-way will be authorized within the 1-mile-wide corridor (0.5 mile on each side) on state and county roads and will be restricted to not less than 10-mile separations.

LR-45: Manage rights-of-way in desert tortoise habitat the same as that described for the Beaver Dam Slope, Kane Springs, and Mormon Mesa ACECs (also see Appendix D).

LR-46: Reclaim surface disturbances from unauthorized uses to pre-disturbance conditions, if possible.

LR-47: Where feasible, consolidate new land use authorizations within or adjacent to existing authorizations.

LR-48: Coordinate with the U.S. Fish and Wildlife Service on utility line development and Avian Protection Plan guidelines.

LR-49: Implement the following management actions for desert tortoise habitat (see **Map 7**). Implement the additional conditions for desert tortoise and conditions for the Southwest willow flycatcher, White River springfish, Pahrump poolfish, and Big Springs spinedace habitat contained in the 2008 Biological Opinion (Appendix D) (also refer to discussions on Special Status Species and Geology and Minerals).

- A speed limit of 25 miles per hour will be required for all vehicles on the project site and unposted dirt access roads.

- If possible, overnight parking and storage of equipment and materials, including stockpiling, will occur in previously disturbed areas or areas to be disturbed that have been cleared by a qualified tortoise biologist. If not possible, areas for overnight parking and storage of equipment will be designated by the BLM authorized officer based on recommendations of a qualified tortoise biologist.

- All vehicular traffic will be restricted to existing access roads, or those roads approved by the BLM authorized officer in consultation with the U.S. Fish and Wildlife Service.

- Project activity areas will be clearly marked or flagged at the outer boundaries before the onset of construction. All activities will be confined to designated areas. Blading of vegetation will occur only to the extent necessary and will be limited to areas designated for that purpose by the BLM authorized officer based on recommendations from a qualified tortoise biologist.

- Projects resulting in residual impacts will require the submission of a BLM and U.S. Fish and Wildlife Service-approved reclamation plan, unless determined by the BLM authorized officer and U.S. Fish and Wildlife Service that reclamation or rehabilitation is not necessary. The reclamation/rehabilitation plan will describe objectives and methods to be used, species of plants and/or seed mixture to be used, time of planting, success standards, and follow-up monitoring. Depending upon the size and location of the project, reclamation could range from recontouring, to rehabilitation and restriction of access points, to intensive reclamation over the entire area of surface disturbance. The plan will be prepared within 60 days following completion of the surface disturbance phase of the project. Reclamation will be addressed on a case-by case basis.

- If trenches or holes are to remain open overnight, they will be checked for tortoises at the end and beginning of each workday. The trenches or holes also will be checked immediately prior to backfilling.

- The project applicant will notify the BLM's authorized officer at least ten days before initiation of any project. Notification will be made to the BLM's wildlife staff in Caliente or Ely.

- BLM's wildlife staff in Caliente or Ely and the U.S. Fish and Wildlife Service's Southern Nevada District Office must be notified of any desert tortoise death or injury due to the project implementation by close of business on the following work day.

- All appropriate Nevada Department of Wildlife permits or letters of authorization will be acquired prior to handling desert tortoises and their parts, and prior to initiation of any activity that may require handling tortoises.

- The project proponent must submit a document to the BLM within 30 days of completion of the project, showing the number of acres disturbed; remuneration fees paid; and the number of tortoises taken, which includes capture and displacement, killed, injured, and harassed by other means, during project activities.

Monitoring – Lands and Realty

The need for monitoring of rights-of-way and other land use authorizations will be asessed as proposals are evaluated through the NEPA process. Individual projects will be monitored to ensure compliance with the terms and conditions of the authorizing document and through the BLM accomplishment tracking process.

Renewable Energy

The Ely District Office will follow established policy for the processing of right-of-way applications for potential renewable energy development projects on public lands administered by the BLM, and for evaluating the feasibility of installing energy systems on BLM administrative facilities and projects. Guidance also will be obtained from the BLM Wind Energy Development Programmatic EIS. (Note: Geothermal energy is discussed with Geology and Mineral Extraction.)

Goals – Renewable Energy

Provide opportunities for development of renewable energy sources such as wind, solar, biomass, and other alternative energy sources while minimizing adverse impacts to other resources.

Objectives – Renewable Energy

To be responsive to applications for renewable energy sites and associated rights-of-way, as encouraged by current BLM policy.

Management Actions – Renewable Energy

RE-1: Review proposed renewable energy developments on a project-specific basis, considering potential resource conflicts and mitigation measures. Areas of high potential for wind and solar energy development are identified but no specific areas are designated for such development (see **Maps 13** and **14**).

RE-2: Conform wind energy development to the direction presented in Appendix A, Section 3 – BLM Wind Energy Development Program Policies and Best Management Practices.

RE-3: Wind energy developers should conduct pre-application consultation with the Ely District Office, the appropriate Department of Defense representatives, and the Department of Homeland Security, to determine possible constraints posed by military testing and training operations.

RE-4: Establish wilderness study areas as avoidance areas.

RE-5: Establish designated wilderness as exclusion areas.

RE-6: Establish ACECs as avoidance or exclusion areas (see the discussion on Special Designations).

RE-7: Increase the utilization of biomass from BLM lands and utilize tools of the Healthy Forest initiative such as Stewardship Contracting. Review proposed biomass energy development on a project-specific basis in relation to specific areas of restoration needed to restore healthy vegetation communities.

Monitoring – Renewable Energy

Monitoring for renewable energy projects will depend on site characteristics and the type of project being proposed (e.g., wind, solar, biomass). For example, local differences in wildlife populations and movement patterns, habitats present, area topography, weather, and facility design result in each proposed renewable energy development project being unique and requiring a detailed individual evaluation plan. Data on wildlife use and mortality at one wind energy facility are not necessarily applicable to others. Monitoring protocols will be developed for the unique assemblage of resources that could be affected and in accordance with the BLM policies that are in place at the time each individual project is proposed.

Travel Management

Federal regulations (Title 43 Code of Federal Regulations Subpart 8340) and BLM planning guidance require the Ely District Office to designate all BLM-administered land as either open, limited, or closed in regard to off-road vehicle (now termed off-highway vehicle) use. These designations are designed to help meet public demand for off-highway vehicle activities, protect natural resources, ensure public safety, and minimize conflicts among users.

The BLM designates areas as “open” for cross country vehicle use where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.

The BLM designates areas as “limited” where it must restrict off-highway vehicle use to meet specific resource management objectives. These limitations may include: restricting the number or types of vehicles; limiting the time or season of use; allowing permitted or licensed use only; limiting use to existing roads and trails; and limiting use to designated roads and trails. The BLM may enact other limitations, as necessary to protect resources, particularly in areas of intense motorized off-highway vehicle use.

The BLM designates areas as “closed” if closure to all vehicular use is necessary to protect resources, ensure visitor safety, or reduce use conflicts.

Goals – Travel Management

Provide and maintain suitable access to public lands. Manage off-highway vehicle use to protect resource values, promote public safety, provide off-highway vehicle opportunities where appropriate, and minimize conflict.

Work closely with local, state, tribal, and other affected parties and other resource users to address off-highway vehicle management including land use and route designations, and monitoring and adaptive management strategies such as applying the Limits of Acceptable Change process.

Objectives – Travel Management

To manage motorized vehicle traffic to sustain this type of use while protecting sensitive resources and providing access.

Comprehensive travel and transportation planning is the BLM’s interdisciplinary approach to addressing multiple-use access concerns. Comprehensive travel management planning addresses all resource use aspects and accompanying modes and conditions of travel on public lands, and is not limited to recreational off-highway vehicle activities. Providing and maintaining access to the public lands is an important public service provided by the BLM. The National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands (BLM 2001) provides guidance in developing and implementing solutions to off-highway vehicle issues. Roads on BLM-administered lands are used by permitted users such as miners and livestock operators and by recreationists for dispersed recreation activities such as hunting, fishing, camping, rock-hounding, off-highway vehicle use, and sightseeing. Access is necessary for BLM personnel to administer the various resource management programs on public land including livestock grazing, mining, wildlife habitat management, watershed management, recreation management, and numerous other programs. Access also is an important factor in fire suppression and fire management.

Complexity, incomplete data, and insufficient resources have made it infeasible to complete road and trail network selection and data collection for this planning effort. Collection will follow a standardized process using appropriate technology to allow staff to record road and trail conditions and characteristics.

Travel Management in the planning area will be:

- **Comprehensive:** All motorized and non-motorized travel that occurs on public lands will be considered.
- **Multi-functional:** Participation will encompass all functions within the BLM.
- **Collaborative:** Travel plans will be accomplished in a collaborative and community-based process.
- **Outcome based:** Travel systems will be designed for transportation outcomes.
- **Holistic:** Travel management implementation will be accomplished in a holistic approach that provides clear direction for access and recreation opportunities while protecting sensitive areas. This includes signs, maps, education, maintenance, construction, reconstruction, planning, field presence, law enforcement, and monitoring.

Management Actions – Travel Management

Parameter – Transportation Plan

TM-1: Close designated wilderness to motorized and mechanized travel according to policy and enabling legislation.

TM-2: Close the Park Range, Blue Eagle, Antelope Range, and Riordan's Well wilderness study areas to motorized and mechanized travel.

TM-3: Incorporate the Duck Creek Basin designations into the transportation plan[1] (see **Map 15**).

TM-4: Update the Ely District Office Transportation Plan through subsequent implementation-level plans completed primarily along watershed boundaries. Transportation planning may move ahead of the watershed analysis process where the need for vehicle route designation is a greater priority than other watershed management needs. If this is the case, changes in route designations may be made once watershed analysis and additional site-specific NEPA is complete. Until site-specific implementation plans and route designations are complete, motorized travel will be limited to existing roads and trails except when cross-country travel is needed for safety, required for government (federal, state, and local) administrative needs, as authorized on a permit, for big game retrieval, or as otherwise officially approved.

The planning process is described as follows:

- Establish an interdisciplinary team to ensure broad participation from a variety of resources.
- Define the goals and objectives of the proposed Travel and Transportation Management Plan.

[1] Implementation level decision.

- From inventory data, complete a map of the proposed planning area, and identify the baseline of roads, primitive roads, and trails. As road and trail data collection is completed, the interdisciplinary review team will analyze each route and make recommendations for designations within the specific watershed based on the following criteria. (Other criteria will be added as new issues develop in different watersheds over time.) In addition to making recommendations on designations for existing routes, the review team may recommend the development of new roads or trails based on the same criteria.

  - Route redundancy
  - Wildlife habitat needs – integrate concepts of habitat connectivity into off-highway vehicle planning to minimize habitat fragmentation
  - Visual resource management class objectives
  - Recreation opportunities
  - Administrative needs
  - Public access needs
  - Special management areas
  - Cultural resources
  - Riparian and wetland resources

- Hold public scoping meetings. Notify the public of the meetings through local media, as appropriate, to reach the potentially affected public. Involve Resource Advisory Councils, local government, state and federal agencies, gateway communities, local motorized and non-motorized user group clubs as applicable to the planning area. Notify the meeting attendees of the objective of the proposed plan using maps and other appropriate materials to facilitate discussion regarding public issues, concerns, and access needs.

- Produce a map depicting the designated roads, primitive roads, and trails available for use (also see Appendix D).

- Implement decisions on the ground. Rehabilitate roads that have been identified through the process as closed to motorized traffic on a case-by-case basis to discourage continued motorized use. In addition, place signs and barriers and produce public maps and other appropriate forms of education and communication to inform the public of updated route designations (also see Appendix D).

TM-5: Limit motorized vehicle traffic to designated routes within desert tortoise habitat outside of designated wilderness. This action will be given a high priority for completion (also see Appendix D).

TM-6: Restrict the establishment of new permanent roads and trails in designated desert tortoise habitat. New access routes may be allowed on a temporary basis, or permanently if approved through the NEPA process (also see Appendix D).

TM-7: Reroute roads and trails, where feasible, to improve manageability of desert tortoise habitat (also see Appendix D).

TM-8: Coordinate with the U.S. Fish and Wildlife Service, Lincoln County Road Department, and the Nevada Department of Transportation when possible to identify roads and trails with high tortoise mortality due to impacts from vehicles. Fences and culverts may be installed along these roads and trails to allow for the safe passage of desert tortoises.

Parameter – Off-highway Vehicles

TM-9: Manage off-highway vehicles in accordance with the following designations (see **Map 16**).

- Off-highway vehicle use limited to designated roads and trails: 10,306,500 acres.
- Closed to off-highway vehicle use: 1,153,500 acres. This acreage reflects designated wilderness and wilderness study areas.

Monitoring – Travel Management

Roads within the planning area will be monitored, usually on an annual basis in coordination with other BLM resource programs and county highway departments, to determine maintenance needs. Monitoring of closed roads will be done in conjunction with monitoring associated with other resource uses such as watershed condition or off-highway vehicle use. The purpose of this monitoring is to ensure that closed roads are not being used and that resource damage, such as erosion, is not occurring.

Monitoring off-highway vehicle uses within the planning area will focus on compliance with specific designations, and will determine whether these uses are causing adverse effects on various resources (i.e., soils, water, air, vegetation, fish and wildlife, etc.). Roads and trails are common vectors for noxious and invasive species and monitoring will routinely occur. Methods of monitoring may include visitor contacts, permit review, visual surveillance (including aerial reconnaissance), traffic counters, and/or periodic patrols to check boundaries, signing, visitor use, and limits of acceptable change. Closures will be monitored to ensure public safety and protect affected roadbeds or areas. Baseline data will be established for sites where off-highway vehicle use is occurring, and sites will be rehabilitated or closed as necessary.

Recreation

The Federal Land Policy and Management Act provides for recreation use of public land as an integral part of multiple use management. Dispersed, unstructured activities typify the recreational uses occurring throughout the majority of the planning area. BLM Manual 8300 directs the BLM to designate special units known as special recreation management areas. Management within special recreation management areas focuses on providing recreation opportunities that will not otherwise be available to the public, reducing conflicts among users, minimizing damage to resources, and reducing visitor health and safety problems.

Goals – Recreation

Provide quality settings for developed and undeveloped recreation experiences and opportunities while protecting resources.

Conduct an assessment of current and future off-highway vehicle demand, and plan for and balance the demand for this use with other multiple uses/users.

Develop sustainable off-highway vehicle use areas to meet current and future demands, especially for urban interface areas.

Objectives – Recreation

To provide a wide variety of recreation opportunities to satisfy a growing demand by a public seeking the open, undeveloped spaces that are characteristic of the planning area.

To provide visitor information to familiarize people with recreational opportunities throughout the planning area and encourage minimum impact or “Leave No Trace” and “Tread Lightly” recreational skills and ethics for recreational activities.

Management Actions – Recreation

Parameter – Special Recreation Management Areas

REC-1: Manage for the protection of cave resources in the planning area according to the Ely District Office Cave Management Plan.

REC-2: Manage five special recreation management areas for a broad recreation opportunity spectrum ensuring a balance of recreation experiences (see **Map 17**).

- The **Loneliest Highway Special Recreation Management Area** (675,123 acres);
- The **Chief Mountain Special Recreation Management Area** (111,181 acres);
- The **Egan Crest Special Recreation Management Area** (53,455 acres);
- The **Pahranagat Special Recreation Management Area** (298,500 acres); and
- The **North Delamar Special Recreation Management Area** (202,890 acres).

REC-3: Develop recreation sites, as appropriate, to proactively manage for tourism and recreation experiences.

REC-4: Write recreation area management plans for each special recreation management area identified in REC-2 to provide further management guidance at a site-specific level. The process for development of recreation area management plans is described as follows:

- Establish an interdisciplinary team to ensure broad participation.

- Hold public scoping meetings, as appropriate, to identify the potentially affected publics. Involve Resource Advisory Councils, local government, state and federal agencies, gateway communities, local user groups as applicable to the recreation management area. Prepare appropriate maps to facilitate discussion in identifying issues, concerns and desired future needs.

- Using information from the interdisciplinary team and through public scoping, identify different recreation niches to be served in the special recreation management area. Write specific objectives for the recreation opportunities that would be provided and managed. Use the recreation opportunity spectrum to describe the existing setting character and the desired future setting character.

- Collect and analyze data identified through the scoping process to assist in the development of the best set of proposed actions to meet the recreation and other resource objectives of the area.

- All recreation area management plans will incorporate guidance from Appendix C of the BLM Land Use Planning Handbook. Plans would address the following:

  - Development of specific recreation management zones within each special recreation management area.

  - Public education and interpretation. This would include working with the local communities and other land management agencies in public outreach as well as in marketing an areas recreation opportunities.

  - Monitoring.

  - Necessary support actions for the administration of the areas including any business plans, fee programs, permit programs and potential concessionaires.

- Utilize Best Management Practices to mitigate localized disturbances to wildlife. These may include, but are not limited to: placement of signs and public education at key recreation access areas; identification of seasonal motorized route closures to protect wildlife during sensitive periods of their lifecycles; re-routes or existing roads and trials; permanent closures of existing routes; and the establishment of recreation use limitations.

REC-5: Manage areas not designated as Special Recreation Management Areas as extensive recreation management areas. A majority of the planning area is available for dispersed, backcountry, and undeveloped recreational uses.

REC-6: Manage for recreation facilities and services such as trails, trailheads, staging areas, and associated structures in extensive recreation management areas following activity-level plans and NEPA analysis for the management of designated wilderness, ACECs, the Silver State Off-highway Vehicle Trail,

backcountry byways, and where appropriate, for management of recreational impacts to natural and cultural resources.

REC-7: Develop or construct recreation trails and routes in extensive recreation management areas as future needs are identified in site-specific planning.

REC-8: Conduct a study of potential routes for the Silver State Off-highway Vehicle trail in White Pine County in accordance with Subtitle E of the White Pine County Conservation, Recreation, and Development Act of 2006.

REC-9: Continue to provide visitor orientation information, interpretive activities, signage, safety programs, and other visitor outreach activities. Familiarize the public with recreational opportunities throughout the planning area and encourage minimum impact or "Leave No Trace" behavior for recreational activities.

Parameter – Special Recreation Permits

REC-10: Monitor the use and number of outfitter and guide permits for geographic regions within the planning area for 3 years following plan implementation. Following the monitoring period, issue outfitter and guide permits with special stipulations and conditions to protect resources and reduce user conflicts.

REC-11: Manage four special recreation permit areas totaling approximately 1.3 million acres to provide opportunities for competitive motorcycle special recreation permit events (see **Map 18**).

REC-12: Manage competitive motorcycle events on designated routes within special recreation permit areas (see **Map 18**).

REC-13: Designate event routes and develop additional mitigation in subsequent activity level plans (also see Appendix D).

REC-14: Manage for a maximum of two competitive truck events each calendar year.

REC-15: Manage four routes for competitive truck events. Rotate use of routes to lessen impacts.

REC-16: Permit non-competitive off-highway vehicle events on a case-by-case basis.

REC-17: Close desert tortoise ACECs to all high-speed, competitive off-highway vehicle use (also see Appendix D).

REC-18: Close desert tortoise ACECs to all types of organized non-speed, off-highway vehicle events from March 1 to June 15, and September 1 to October 31 (also see Appendix D).

REC-19: Limit non-speed off-highway vehicle events in desert tortoise ACECs as identified in **Table 14** (also see Appendix D).

REC-20: Limit vehicle off-loading areas, if authorized within desert tortoise habitat, to areas of existing disturbance. Limit event size by the number of vehicles that can be involved without expanding the disturbed area. Terms and conditions and best management practices describe stipulations that will be attached to all special recreation permits for organized off-highway vehicle events in desert tortoise habitat.

Table 14
Summary of Limitations for Non-speed Off-highway Vehicle Events Within Desert Tortoise ACECs

Stipulations	Corridors		
	Carp-Elgin, Halfway Wash, and East Halfway Wash	**Littlefield**	**Kane Springs Road**
Dates allowed for events	June 16 – August 31 November 1 – February 28-29	November 1 – February 28-29	June 16 – August 31 November 1 – February 28-29
Maximum number of vehicles	100	300 4-wheeled vehicles or 400 motorcycles	300
Maximum number of laps	1	1	1
Maximum number of events allowed per tortoise ACEC	3	4	4

REC-21: Implement the following management actions for desert tortoise habitat (see **Map 7**). Implement the additional conditions for desert tortoise and conditions for the Southwest willow flycatcher, White River springfish, Pahrump poolfish, and Big Springs spinedace habitat contained in the 2008 Biological Opinion (Appendix D) (also refer to discussions on Special Status Species).

- For speed events: Event participants will be informed that they will not ride their ATVs or motorcycles in the desert after they finish an event. This includes the open desert as well as roads and trails. Failure to comply with this condition by anyone associated with a particular rider will result in the disqualification of that rider.

- For speed events including non-speed sections: If a vehicle breaks down, it will be moved to the side of the race course, avoiding damage to vegetation to the extent possible. Participants who stop to rest will pull over onto side roads or areas devoid of perennial vegetation, if possible. Riders who voluntarily retire from the event will either wait along the course for their crew to pick them up, or travel along the course to a pit area. Chase crews will be limited to retrieving vehicles that are broken down along the course. All chase vehicles must have a pit pass, retrieval pass, or other form of access permission from the Ely District Office.

- For speed events: No spectators or spectator areas will be allowed in ACECs. Spectator vehicles will be allowed in designated spectator areas only. Spectator areas will be confined to existing disturbed areas or new areas selected in coordination with the U.S. Fish and Wildlife Service. Spectator areas are established for viewing purposes only and vehicles will be prohibited. The promoter will be required to mark the boundaries of the spectator area so that spectators can readily tell where the boundary is

located. Rope or wire with warning triangles or other similar sturdy materials will be used. A monitor will be placed at each spectator area to ensure spectators remain within the designated boundary. Anyone found outside of the designated area will be subject to citation.

- For speed events: Pit crews will use only authorized pit areas. Pits shall be confined to existing disturbed areas, unless otherwise approved by the U.S. Fish and Wildlife Service. Pit areas will be marked with a sign stating that a pit pass is required. A maximum of ten pit passes will be issued to each entrant; however, in unusual cases, the Ely District Office may authorize issuance of additional passes to meet specific needs or conditions. Under no circumstances will the issuance of additional passes create or contribute to expansion of designated pit areas. Pit passes should be identified by color or unique number, the name and date of event, and distinguish the pit to which the pass applies (i.e., main pit or course pit), and will be affixed to the windshield of each vehicle. Vehicles in the pit area without pit passes will be towed at the owner's expense. Unauthorized duplication of pit passes will result in disqualification of the entrant and this will be stated on each pass.

- For speed events including non-speed sections: All event-related activities will be confined to authorized vehicle routes, pit areas, spectator areas, and the course itself, and will not stray into vegetated areas. All major access routes leading into restricted areas will be monitored or marked closed and bannered off. Personnel will be stationed at these areas, as appropriate, to enforce access restrictions. Directional signs to spectator and pit areas will be posted at all main access points. "Race-in-progress" signs will be posted at each location where the race crosses another road. Other disqualification or hazard zones will be monitored periodically during the event.

- For all events, Ely District Office staff will be present to check for compliance with stipulations of the race permit. The importance of staying on the race course will be stressed to all participants by the Ely District Office and promoter.

- For all events: A sufficient number of BLM rangers, monitors, and crowd control officials, as determined by the Ely District Office in coordination with the U.S. Fish and Wildlife Service, will be required to enforce compliance with stipulations of the event permit. Monitors may be Ely District Office or proponent personnel and will be stationed at all disqualification or hazard areas to record any violations. As a general guideline, the Ely District Office will provide one law enforcement officer per 50 participants to control unauthorized vehicular travel off existing roads, and ensure that habitat damage does not occur. The number of law enforcement officers present may be increased or decreased based on the event proponent's past history of event management and stipulation compliance, the estimated number of spectators, geographic setting of the event, or experience gained from previous similar events, at the discretion of the BLM's authorizing officer.

- For all events including non-speed sections: To reduce casual use of the race course, the race area may be legally closed to casual use on the day of the race. The promoter will be required to station monitors or post signs at road intersections, prohibiting public access, where the general public is likely to access the race course. A Federal Register notice providing authority to close race areas in the Ely and Las Vegas District Offices will be issued. This will allow BLM law enforcement officers to enforce

regulations. A legal notice will be published in the local newspaper, or other appropriate publication, before the permitted events take place.

- For speed events: Publicity runs will not occur within ACECs, and all event-related vehicular activity will be confined to authorized routes and the course itself and will not stray into vegetated areas.

- For all events: To the extent possible, the event course will be cleared of all unauthorized vehicles and personnel prior to each event.

- For all events: Participants in each event who violate any stipulation of that event will be disqualified from the event. Additionally, failure to comply with permit conditions by any member of the support team or spectators associated with a particular driver or rider will result in the disqualification of that driver or rider.

- For all events: Participants will be informed that passing will be limited to the disturbed areas of roads, trails, and washes and will not occur in vegetated areas adjacent to the course.

- For speed events: To help control spectators, the event promoter will station at least one person at the primary entrance to the spectator area for at least 2 hours before the start of the race and 1 hour after the start of the race. This individual will stop all cars coming into the area, give the occupants information on the limits of the spectator area, and advise them where they can and cannot park.

- For non-speed portions of speed events in ACECs: Participants will be escorted through the ACEC at a speed of no greater than 25 miles per hour.

- For organized non-off-highway vehicle events within ACECs (e.g., dog trials, model airplane events, etc.): The event area will be surveyed for desert tortoise immediately prior to the event. If desert tortoise or sign of desert tortoise is observed, the event will be moved to a different location or set up in such way as to avoid adverse effects to desert tortoise.

- Horse endurance rides will be limited to existing roads and trails. Horse endurance rides are considered speed events and will not be permitted in desert tortoise ACECs.

Monitoring – Recreation

Monitoring of recreational use will be designed to ensure visitor compliance with rules and regulations, establish baseline data and observation points for determining impacts from recreation use, and determine appropriate levels and patterns of recreational use. Monitoring will focus on visitation levels and dispersed uses; compliance with rules, regulations, and permit stipulations for specific sites (developed sites); and prescribed standards and guidelines as set in the respective recreation opportunity spectrum classes. Methods of monitoring may include the use of visitor contacts; traffic counters; surveillance at developed recreation sites; periodic patrols to check boundaries, signing, and visitor use; and studies to determine limits of acceptable change, including photo documentation of the changes in resource conditions over time.

Monitoring data will be used to manage visitor use, develop plans and projects to reduce visitor impacts, and meet visitor demand.

Livestock Grazing

The Taylor Grazing Act, as amended and supplemented, is the legislative authority providing for livestock grazing on, and protection of, public land. The Federal Land Policy Management Act of 1976 and the Public Rangeland Improvement Act of 1978 direct the management of public land for multiple use and sustained yield. Rangeland management strategies will provide for the maintenance or restoration of watershed function, nutrient cycling and energy flow, water quality, habitat for special status species, and habitat quality for populations and communities of native plants and animals. These management strategies have been supported by development of Standards for Rangeland Health and Guidelines for Livestock Grazing for the Mojave/Southern Great Basin and Northeastern Great Basin regions, which were adopted and approved by the Secretary of Interior in 1997.

Goals – Livestock Grazing

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.

Northeastern Great Basin Area Standards

- Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, and land form.

- Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

- Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

Mojave-Southern Great Basin Area Standards

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

- 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).

- 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.

Objectives – Livestock Grazing

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 Actions – Livestock Grazing

LG-1: Make approximately 11,246,900 acres and 545,267 animal unit months available for livestock grazing on a long-term basis (see **Map 19**).

LG-2: The following public lands are unavailable for livestock grazing (see **Map 19**):

- Mormon Mesa, Kane Springs, and Beaver Dam Slope ACECs (203,670 acres);
- Baker Archaeological Site ACEC (80 acres) and Snake Creek Indian Burial Cave ACEC (40 acres);
- Leased public lands associated with the Coyote Springs Development (6,200 acres);
- Public lands west of U.S. Highway 93 and west of the Desert National Wildlife Range (6,900 acres); and
- Private/Utah Allotment above Beaver Dam State Park (4,400 acres).

LG-3: Allow allotments or portions of allotments within desert tortoise habitat, but outside of ACECs to remain at current stocking levels as shown in **Table 15** unless a subsequent evaluation indicates a need to change the stocking level (also see Appendix D).

LG-4: Continue to monitor and evaluate allotments to determine if they are continuing to meet or are making significant progress toward meeting the standards for rangeland health. **Table E-1** in Appendix E shows the current grazing preference, season-of-use, and kind of livestock for those allotments that currently are evaluated for meeting standards, are making progress towards achieving the standards, or are in conformance with the policies as determined either through the allotment evaluation process or associated with fully processed term permit renewals. 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. Such changes will continue to meet the RMP goals and objectives, including the standards for rangeland health.

Table 15
Allotments Within Desert Tortoise Habitat but Outside ACECs

Allotment	Map Unit Number[1]	Season-of-use	Active Use Animal Unit Months
Boulder Spring	22	10/1 to 3/31	416
Breedlove	23	3/1 to 2/28	698
Buckhorn	26	3/1 to 3/28	3,370
Delmar	57	3/1 to 2/28	5,558
Garden Spring	76	10/1 to 5/31	2,809
Gourd Springs	85	10/1 to 5/31	3,458
Grapevine	86	3/1 to 2/28	349
Henrie Complex	91	3/1 to 2/28	1,380
Lime Mountain	102	10/1 to 5/15	6,754
Lower Lake East	106	3/1 to 2/28	640
Lower Lake West	107	3/1 to 2/28	1,247
Lower Riggs	108	5/1 to 3/24	1,408
Mormon Peak	126	3/1 to 2/28	600
Pahranagat East	143	8/1 to 5/31	511
Pahranagat West	144	10/1 to 5/31	2,144
Snow Spring	191	10/1 to 5/31	3,567
Summit Spring	202	10/1 to 5/15	715
Terry	207	11/1 to 5/31	1,511
White Rock	222	10/1 to 5/31	2,880

[1] Map unit number refers to livestock grazing allotments shown on Appendix E.

LG-5: 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 (see **Table E-2** in Appendix E). 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.

LG-6: When changes to BLM grazing permits are being considered in Rocky Mountain and desert bighorn sheep occupied habitat, manage domestic sheep and goats in accordance with current BLM policy.

LG-7: Manage allotments that become vacant, for any reason including relinquishment by the permittee, to best meet site-specific and land use planning objectives. Authorized uses may include new grazing permits, forage reserve allotments, dedication to purposes that preclude livestock grazing, and others such as offsetting allotments for permittees who are displaced for any reason.

LG-8: Implement management actions for desert tortoise habitat (see **Map 7**) contained in the 2008 Biological Opinion (Appendix D). Implement conditions in the Biological Opinion for the Southwest willow

flycatcher, White River springfish, Pahrump poolfish, and Big Springs spinedace habitat (also refer to discussions on Special Status Species).

Monitoring – Livestock Grazing

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. Monitoring will determine when grazing will be authorized in burned areas, and will contribute to the selection of prescribed burn treatments or other types of treatments based on attainment of resource objectives.

Forest/Woodland Products

The Federal Land Policy and Management Act of 1976 directs BLM to ". . . manage public lands according to the principles of multiple-use and sustained yield . . ." One of the multiple uses of resources within the planning area includes the use of forest/woodland areas for fuelwood collection, pinyon nut harvesting, Christmas tree harvesting, posts and poles, seed collection, cactus and yucca collection, and other vegetation product collection. Vegetation management tools (e.g., prescribed fires, thinning) will allow for the regeneration of forest/woodland vegetation types and the selective thinning of these communities to improve their overall health within the planning area and achievement of applicable Resource Advisory Council standards and the desired ranges of conditions for various types of woodlands. Commercial collection of cacti, yucca, and evergreen trees within the state also is regulated under Nevada Revised Statutes (N.R.S. 527.060.120) and the Nevada Administrative Code Chapter 527.

Goals – Forest/Woodland Products

Provide opportunities for traditional and non-traditional uses of vegetation products on a sustainable, multiple-use basis.

Objectives – Forest/Woodland Products

To make healthy forest/woodlands and populations of other plants available for the responsible harvesting of forest/woodland and plant products by the public, commercial interests, and American Indians and allow access for traditional and non-traditional uses.

Management Actions – Forest/Woodland Products

General Forest/Woodland and Other Plant Product Management

FP-1: Do not allow bristlecone pine, limber pine, or swamp cedar to be harvested except for education, scientific, research purposes; for salvage; or for the purpose of preventing or limiting insect or disease problems. Do not permit the cutting of rare or unique trees and shrubs including bearing trees.

FP-2: Allow the sale and salvage of desert vegetation (primarily cactus and yucca) based on NEPA analysis and, if necessary, Section 7 consultation with the U.S. Fish and Wildlife Service.

FP-3: Allow the harvest of desert vegetation for educational or scientific research purposes.

FP-4: Limit vehicle traffic associated with woodland and vegetation product harvesting to existing roads and trails except in areas where completed site-specific analysis or activity plans (e.g., watershed analysis, forestry management plans, etc.) allow. Specific areas would be identified as a condition of the permits/contracts for large quantity sales of vegetation products. These areas generally would be in locations where such activity would assist in meeting watershed objectives.

Parameter – Fuelwood Collection

FP-5: Allow collection of fuelwood from both live and dead trees for personal use (pinyon, juniper, and mountain mahogany) and commercial use (pinyon and juniper) throughout the planning area, except in closed areas (e.g., wilderness study areas, designated wilderness).

FP-6: Allow harvest/collection of other tree species (e.g., aspen, ponderosa pine, and white fir) on a case-by-case basis or through the watershed analysis process.

Parameter – Pinyon Pine Nut Harvesting

FP-7: Allow personal use collection of pine nuts throughout the planning area.

FP-8: Utilize commercial harvest sale areas that have been designated throughout the planning area after coordination with American Indian tribes to avoid traditional use areas. Sell these sites through a competitive bidding process. When the competitive bidding is complete and the sales are awarded, the specific sale area will be documented on the permittee's contract.

Parameter – Christmas Tree Harvesting

FP-9: Make pinyon, juniper, and white fir available for personal use throughout the planning area, except in closed areas (e.g., wilderness study areas, designated wilderness).

FP-10: Allow commercial use to only pinyon and juniper throughout the planning area.

FP-11: Make white fir available for commercial harvest if future site-specific planning activities (e.g., watershed analysis) determine that harvest will assist in achieving the desired range of conditions, health and resiliency of the stand, and site-specific objectives for the site.

Parameter – Post and Pole Harvesting

FP-12: Make pinyon and juniper available for personal and commercial use throughout the planning area, except in closed areas.

FP-13: Allow the use of aspen, fir, and spruce on a case-by-case basis, and if harvest will improve the health of the stand.

FP-14: If harvest will assist in achieving site-specific objectives, designate areas open to harvest with specified limitations until desired conditions are achieved.

Parameter – Seed Collection

FP-15: Allow commercial collection on a case-by-case basis.

FP-16: Do not allow harvesting of more than 50 percent of the annual seed crop available in any one area.

FP-17: Do not allow seed harvest of special status plants except for research, federally/state endorsed propagation for restoration, or case-specific small scale commercial/personal use regulated under permit process. All special status seed harvest will be monitored by the Ely District Office, in the form of permit requirements.

FP-18: Encourage hand collection methods, and allow mechanical collection on a limited basis.

Parameter – Other Vegetation Products (i.e., wildings, boughs, etc.) Collection

FP-19: Allow personal and commercial collection on a case-by-case basis.

FP-20: Specify areas for collection on the vegetation sales contract.

FP-21: Limit collection methods to those with the least surface disturbing activities.

Parameter – Biomass Products

FP-22: Allow biomass harvest in areas where vegetation projects require vegetation removal and meet project objectives.

Monitoring – Forest/Woodland Products

Periodic monitoring will ensure that commercial use of forest/woodland products within designated areas is in accordance with specifications provided in the contract, and that public use throughout the planning area occurs in accordance with the Approved RMP. If monitoring shows that harvest in a specific area is causing nonattainment of vegetation objectives, the area will be closed until it is determined that objectives are being met and harvest could be allowed to resume. Outbreaks of disease and infestations of insects affecting woodland species will be monitored to ensure timely implementation of management actions to limit the spread and level of damage related to such problems.

Geology and Mineral Extraction

The general mining laws give the public the right to locate and develop mining claims on public land. The Mining and Minerals Policy Act of 1970 declares that it is the continuing policy of the federal government to foster and encourage private enterprise in the development of domestic mineral resources. Section 102 of the Federal Land Policy and Management Act of 1976 directs that the public land will be managed in a manner that recognizes the Nation's need for domestic sources of minerals and other commodities from the public lands, while protecting scientific, scenic, historic, archeological, ecological, environmental, air and atmospheric, and hydrologic values. The BLM's mineral and national energy policy states that public lands shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is justified in the national interest.
Federally owned minerals in the public domain are classified into three categories: leasable minerals, locatable minerals, and mineral materials as discussed below. The classifications are based on acts passed by the U.S. Congress. These acts provide the opportunity for the public to explore for, develop, and produce publicly owned minerals.

Leasable minerals are those minerals on public lands where the land is leased to individuals for their exploration and development. The leasable minerals have been subdivided into two classes, fluid and solid. Fluid minerals include oil and gas; geothermal resources and associated by-products; and oil shale, native asphalt, oil impregnated sands, and any other material in which oil is recoverable only by special treatment after the deposit is mined or quarried. Solid leasable minerals are those leased under the mineral leasing acts and those hardrock minerals leased under Reorganization Plan No. 3 of 1946 (acquired lands). Solid leasable minerals are specific minerals such as coal and phosphates. All minerals on acquired lands are considered to be leasable minerals. Leasable minerals are associated with the following laws: Mineral Leasing Act of 1920, as amended and supplemented, Mineral Leasing Act for Acquired Lands of 1947, as amended, and the Geothermal Steam Act of 1970, as amended.

Locatable minerals are those "minerals acquired through the General Mining Law of 1872, as amended" (National Research Council 1999). Locatable minerals can include gold, silver, platinum, lead, zinc, magnesium, nickel, tungsten, bentonite, barite, feldspar, uranium, and uncommon varieties of sand, gravel, and stone. Locatable minerals on public lands (if open to mineral entry) can be acquired by initially staking claims over the deposits. However, before mining can occur, permits from various state and federal agencies must be obtained.

Mineral materials are common varieties of minerals such as sand, gravel, rock, cinders, and common clay. Mineral materials are disposed of through sales contracts or free use permits and are regulated under the Mineral Material Act of July 23, 1947, as amended, and the Surface Use and Occupancy Act of July 23, 1955. Disturbance of public lands in association with mineral material sales is considered a discretionary activity. This means that the action may be denied if resource concerns cannot be protected or mitigated.

Goals – Geology and Mineral Extraction

Allow for meeting the Nation's energy needs while providing environmentally responsible production of fluid leasable minerals, and geophysical exploration for energy resources on public lands. Allow development of solid leasable and locatable minerals in a manner to prevent unnecessary or undue degradation. Allow development of mineral materials in a manner that will prevent unnecessary or undue degradation, meet public demand, and minimize adverse impacts to other resource values.

Objectives – Geology and Mineral Extraction

To provide for the responsible development of mineral resources to meet local, regional, and national needs, while providing for the protection of other resources and uses.

Fluid Mineral Leasing

Areas available for fluid mineral leasing are identified through management determinations during the planning process. These determinations designate the land as closed or open to leasing, and if open, what stipulations should be applied to the lease. All leases are subject to the terms and conditions of the standard lease form which allows for up to 60-day timing deferments and 200 meter (656 feet) displacements (Title 43 Code of Federal Regulations Section 3101.1-2). Stipulations modify the lease rights beyond the standard lease terms. Constraints are considered to be either major, such as no surface occupancy, or moderate. Moderate constraints consist of timing limitations (seasonal restrictions) and controlled surface use restrictions. Timing limitations indicate that a leased area generally is open to development activities except during a specified period of time to protect identified resource values such as wildlife. Controlled surface use stipulations may require operating constraints to protect resources year round; for example, staying on existing roads.

A lease notice may be attached to the lease to inform potential lessees of important resource issues under existing laws and regulations that may result in delays associated with subsequent permitting, and appropriate mitigation of those resource concerns.

Resources are further protected during operational activities through the application of best management practices, as contained in the Gold Book (U.S. Department of the Interior and U.S. Department of Agriculture 2006) and the development of site-specific conditions of approval.

Under certain conditions, waivers, exceptions, and modification to lease stipulations may be granted. The circumstances for granting an exception, waiver, or modification are attached to each stipulation.

Any lease stipulation may be waived or modified as per Title 43 Code of Federal Regulations Section 3101.1-4. A waiver or modification is allowable only if the authorized officer determines that the factors leading to its inclusion in the lease have changed sufficiently to make requirements of the stipulation(s) no longer justified, or mitigation contained in individual permits will preclude unacceptable impacts. If the waiver or modification is of major concern to the public, such modification will be subject to a 30-day public review. This review can be held concurrent with the required 30-day posting of applications for permit to drill. Plan amendments are not required to waive, modify, or provide exception to lease stipulations.

A waiver eliminates a stipulation from the lease. The stipulation waiver can be considered concurrent with application for permit to drill approvals and can be accomplished with any NEPA vehicle available such as an environmental assessment, documentation of NEPA adequacy, categorical exclusion, or any similar process available to the Ely District Office. Waivers can be found in Appendix A, Section 2, for various resource concerns.

A modification usually is considered a long-term change in the stipulation to fit the new conditions for which the stipulation was applied; however, it can be short term as well. Depending upon the site conditions, the stipulation may or may not apply to all actions or authorizations on the leasehold. An example of a modification could be a greater sage-grouse lek site that may no longer need a no surface occupancy stipulation on drilling and construction operations if BLM, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting the sage grouse lek. Public notice is required only if the authorized officer determines it is of major public concern.

An exception is a one-time exception to all or part of the stipulation for a particular action due to changed environmental conditions at the time and place of the action being considered. For example, a seasonal restriction on drilling in critical winter range could be excepted if the winter is mild and the target species have not moved onto the critical portions of the winter range (near the drilling location). In subsequent years, the conditions could change and preclude an exception being granted. Normally, exceptions are considered minor actions and, therefore, are not subject to a 30-day public review.

Solid Leasable, Locatable, and Mineral Materials

For lands that are open to the location of mining claims, the claimant has statutory authority under the mining laws to ingress, egress, and development of those claims. This authority means that those areas open to mineral entry for the purposes of exploration or development of locatable minerals cannot be unreasonably restricted.

Mineral Materials (Saleable Minerals)

The same areas are closed for mineral materials as for locatable minerals with the exception of Lower Meadow Valley Wash.

Management Actions – Geology and Mineral Extraction

General Geology and Mineral Management

MIN-1: Implement the following management actions for desert tortoise habitat (see **Map 7**). Implement the additional conditions for desert tortoise and conditions for the Southwest willow flycatcher, White River springfish, Pahrump poolfish, and Big Springs spinedace habitat contained in the 2008 Biological Opinion (Appendix D) (also refer to discussions on Special Status Species and Lands and Realty). This decision applies to fluid and solid leasable minerals, locatable minerals and mineral materials resources.

- Ensure, through the review of the proposed action and development of the mitigation measures, that the impacts from the proposed action will not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. The operator, U.S. Fish and Wildlife Service, and BLM will need to reach concurrence that proposed actions are below the jeopardy or adverse modification threshold. If it is determined that the proposed action will not be below the jeopardy or adverse modification threshold, the project will not go forward.

Parameter – Fluid Leasable Minerals

MIN-2: Open to Leasing – Allow leasing on approximately 6.0 million acres open to leasing subject to existing laws, regulations, and formal orders and the terms and conditions of the standard lease form. A lease notice will be attached, where applicable, to inform potential lessees of important resource issues under existing laws and regulations that may result in delays associated with subsequent permitting and appropriate mitigation of those resource concerns. Lease notices will consist of:

Cultural Site – Areas of known high potential for cultural sites. Properties known at the time of lease announcements that are listed on or eligible for the National Register of Historic Places will be avoided where possible using lease exclusions or limits on surface use. The preferred avoidance option is to exclude areas containing National Register of Historic Places-eligible sites from leasing and all forms of surface disturbance. The next preferred option is to establish no surface occupancy around these sites, including an adequate buffer. Similar constraints may be placed on proposed lease areas based on probability models and the likelihood of encountering properties eligible for the National Register of Historic Places. Cultural sites not avoided may require consultation with State Historic Preservation Officer and potential treatment plans.

Historic Sites – Areas include the Pony Express Trail, the Hastings Cutoff, the Lincoln Highway, and the Osceola Ditch. Any activity planned within 1 mile of these sites must undergo a visual assessment in conjunction with environmental review to determine if the activity will adversely affect the visual integrity.

Appropriate mitigation will take place as necessary to keep the management corridor in as natural a condition as possible. Nondiscretionary activity will be mitigated as needed to preserve the visual integrity.

Desert Tortoise Habitat – All proposed projects in desert tortoise habitat will require Section 7 consultation with the U.S. Fish and Wildlife Services.

See **Map 20** for Lease Notices.

Table 16 summarizes the acres open and closed to fluid mineral leasing under the Approved RMP.

Table 16
Summary of Fluid Mineral Leasing Acreages

	Acres[1]
Open to Fluid Mineral Leasing	
Standard Lease Terms and Conditions	6,532,500
Moderate Restrictions (Timing/Surface Use Limitations)	3,277,200
Major Restrictions (No Surface Occupancy)	230,100
Open – Total	**10,039,800**
Closed to Fluid Mineral Leasing	
Designated Wilderness/Wilderness Study Areas	1,153,500
Discretionary Closures	306,700
Closed – Total	**1,460,200**
Total	**11,500,000**

Note: There will be about 1,087,620 acres of lease notices that could apply to any of the above open categories.

[1] Rounded to hundreds.

MIN-3: Open to leasing, subject to moderate constraints – Protect resources beyond the standard lease terms and conditions by requiring timing and controlled surface use restrictions as indicated in **Table 16**. **Table 17** and **Map 20** contain a complete description of all the lease stipulations. There is considerable overlap of acreages associated with various types of timing restrictions. Including this overlap, the cumulative acreage of the separate timing and surface use stipulations totals approximately 3.7 million acres.

Timing stipulations apply to the following wildlife species:

- **Greater Sage-grouse** – The greater sage-grouse is a Nevada BLM sensitive species and was petitioned for listing under the Endangered Species Act as a threatened or endangered species. Timing limitations are required to protect greater sage-grouse breeding and nesting activities and habitat during the crucial winter period (also see Appendix D).

Table 17
Timing and Surface Use Stipulations

Resource	Potential Restriction	Acres[1]
Greater Sage-grouse Nesting Habitat Associated with Leks	Timing Limitation. No surface activity will be allowed within two miles of a greater sage-grouse lek from March 1 through May 15.	1,244,200
Greater Sage-grouse Winter Range	Timing Limitation. No surface activity will be allowed within winter range for greater sage-grouse from November 1 through March 31.	100,300
Big Game Calving/Fawning/ Kidding/Lambing Grounds	Timing Limitation. No surface activity will be allowed within big game calving/fawning/kidding/lambing grounds from April 15 through June 30.	794,200
Big Game Crucial Winter Range	Timing Limitation. No surface activity will be allowed within big game crucial winter range from November 1 through March 31.	756,800
Desert Tortoise Habitat	Timing Limitation. No surface activity will be allowed within desert tortoise habitat from March 1 to October 31 (also see Appendix D).	314,700
Desert Bighorn Sheep Habitat	Timing Limitation. No surface activity will be allowed within occupied desert bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31.	477,600
Raptor Nest Sites	Timing Limitations. No surface activity will be allowed from May 1 through July 15 within 0.5 mile of a raptor nest site that has been active within the past 5 years.	40,900
Totals of Individual Categories (including overlap)		3,728,700

[1] Rounded to hundreds.

- **Raptors** – Raptors (i.e., hawks, eagles, owls, etc.) are protected under numerous laws including the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act of 1973. Timing limitations are required to protect raptor nesting activities.

- **Big Game** – Elk, mule deer, pronghorn antelope, and Rocky Mountain bighorn sheep are priority species in the planning area. Timing limitations are required to protect elk, mule deer, pronghorn antelope, and Rocky Mountain bighorn sheep from disturbance during calving, fawning, kidding, and lambing and from disturbance during the crucial winter period.

- **Desert Bighorn Sheep Habitat** – The desert bighorn sheep is a Nevada BLM sensitive species and is a priority species in the planning area. Timing limitations are required to protect desert bighorn sheep from disturbance during lambing and the crucial hot summer months.

- **Desert Tortoise Habitat** – The desert tortoise is listed as a threatened species under the Endangered Species Act. Timing limitations are required to protect desert tortoise during the most active period (also see Appendix D).

MIN-4: Stipulation Maintenance – Regularly maintain wildlife databases of species subject to the above stipulations to reflect current inventory status. For example an updated greater sage-grouse lek inventory may show the location of a new lek for which the lease stipulation will be applied in subsequent lease sales.

MIN-5: Existing leases – Apply the constraints and requirements identified in this RMP (and ongoing stipulation maintenance) to new use authorizations on existing leases provided that they are within the authority reserved by the terms and conditions of the lease.

MIN-6: Open to leasing, subject to major constraints. Apply a no surface occupancy restriction as shown in **Table 18** and **Map 20**. The no surface occupancy for greater sage-grouse leks is a 0.25-mile buffer.

MIN-7: Closed to leasing – Close approximately 1.5 million acres to leasing including designated wilderness/wilderness study areas, Congressionally mandated closures, and additional discretionary closures. It is BLM policy to apply the least restrictive constraint to meet the resource protection objective. However, for ACECs (other than desert tortoise ACECs) that exceed 1 mile in length and width, the outer 0.5-mile perimeter is proposed as no surface occupancy and the remainder closed. Areas closed to leasing are shown in **Table 19**.

MIN-8: Evaluate geophysical exploration on a case-by-case basis. Geophysical exploration will not necessarily be subject to the same restrictions as shown for fluid leasing.

MIN-9: Apply the following special management actions for leasing within desert tortoise habitat (also see Appendix D):

a. Continue closure of the Kane Springs ACEC to leasing.

b. Manage the Mormon Mesa and Beaver Dam Slope ACECs as no surface occupancy with exceptions granted upon completion of Section 7 consultation with the U.S. Fish and Wildlife Service.

c. Attach a lease notice for all areas within desert tortoise habitat, to alert the lessee that a Section 7 consultation with U.S. Fish and Wildlife Service will be completed prior to any surface disturbance within desert tortoise habitat.

d. Impose a timing stipulation for all areas within desert tortoise habitat. The stipulation will involve no surface occupancy from March 1 to October 31.

e. Unless otherwise authorized, all vehicular traffic will be restricted to existing roads and trails.

Table 18
No Surface Occupancy for Fluid Mineral Leasing

Name	Acres
Andies Mine Trilobite Site	180
Ash Springs Proposed Withdrawal	80
Baker Archaeological Site ACEC	80
Baking Powder Flat ACEC	6,620
Beaver Dam Slope ACEC[1]	36,800
Blue Mass Scenic Area ACEC	950
Caliente Field Station	2
Cleve Creek Recreation Area	90
Condor Canyon ACEC	2,880
Egan Crest Trailhead	250
Garnet Hill	160
Rock Animal Corral	160
Highland Range ACEC	3,700
Honeymoon Hill/City of Rocks ACEC	3,900
Illipah Reservoir	290
Kirch Wildlife Management Area	5,000
Lower Meadow Valley Wash ACEC	25,000
Mormon Mesa ACEC[1]	66,430
Mount Irish ACEC	8,000
Pahroc Rock Art ACEC	2,400
Pony Springs Fire Station	10
Rose Guano Bat Cave ACEC	40
Sacramento Pass Recreation Site	440
Greater Sage-grouse Leks	31,520
Schlesser Pincushion ACEC	4,930
Shooting Gallery ACEC	5,800
Shoshone Ponds ACEC	1,240
Snake Creek Indian Burial Cave ACEC	40
Sunshine Locality National Register District[1]	6,460
Swamp Cedar ACEC	3,200
Ward Mountain Recreation Site	240
White Pine County Shooting Range	255
White River Archaeological District	230
White River Valley ACEC	13,100
Total[2]	**230,477**

[1] See Appendix A, Section 2 for exception.
[2] Total acres differ from summary table due to overlap among individual areas and categories.

Table 19
Areas Closed to Fluid Mineral Leasing

Name	Acres
Baker Proposed Withdrawal	6,720
Baking Powder Flat ACEC	7,020
Condor Canyon ACEC	1,625
Designated Wilderness/Wilderness Study Areas	1,153,500
Highland Range ACEC	3,200
Kane Spring ACEC	57,190
Coyote Springs leased public lands (Congressional)	6,200
Lincoln County Conservation, Recreation, and Development Act State Park	4,780
Lincoln County Conservation, Recreation, and Development Act Utility Corridors	119,460
Lincoln County Proposed Disposals	57,000
Mount Irish ACEC	7,100
Murry Spring Watershed	1,260
Shooting Gallery ACEC	9,800
Steptoe Valley Wildlife Management Area Expansion	6,265
Sunshine Locality National Register District	12,640
White Pine County Conservation, Recreation, and Development Act Airport Expansion	1,550
White Pine County Conservation, Recreation, and Development Act Industrial Park Expansion	200
White Pine County Conservation, Recreation, and Development Act Additional Withdrawals	98,125
White Pine County Conservation, Recreation, and Development Act Disposals	18,600
Total*	**1,572,235**

* Total acres differ from summary table due to overlap among individual areas and categories.

Parameter – Solid Leasable Minerals

MIN-10: Open to leasing – Allow solid mineral leasing on approximately 9.9 million acres of federal mineral estate, subject to best management practices. **Table 20** and **Map 21** show the areas that will be available to leasing

Table 20
Summary of Solid Mineral Leasing

	Acres[1]
Open to Solid Mineral Leasing	9,855,400
Closed – Designated Wilderness/Wilderness Study Areas	1,153,500
Closed – Discretionary	491,100
Total	**11,500,000**

[1] Rounded to hundreds.

MIN–11: Issue mineral use authorizations for prospecting permits, exploration licenses, preference right leases, competitive leases, lease modifications, and use permits.

MIN–12: Closed to leasing – Close approximately 1.6 million acres to solid mineral leasing. This includes designated wilderness and wilderness study areas. Closed areas include existing closed areas carried forward (i.e., Lincoln County Conservation, Recreation, and Development Act). **Table 21** and **Map 21** show the areas that will be closed to leasing.

MIN–13: Apply the following special management actions for solid mineral leasing within desert tortoise ACEC habitat:

a. Continue closure of the Kane Springs ACEC to solid mineral leasing.

b. Close the Mormon Mesa and Beaver Dam Slope ACECs to solid mineral leasing.

Parameter – Locatable Minerals

MIN-14: Open to locatable – Allow locatable mineral development on approximately 9.9 million acres of federal mineral estate, subject to the prevention of unnecessary or undue degradation of public lands (see **Table 22**).

MIN-15: Closed to locatable – Manage approximately 1.6 million acres of federal mineral estate from operation of the mining law as closed to locatable mineral entry. Review any lands with closures that expire to determine whether the withdrawals should be extended, revoked, or modified. **Table 21** describes the areas that are closed.

MIN-16: Apply the following special management actions for locatable minerals within desert tortoise habitat (also see Appendix D):

a. Close the Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs to locatable mineral entry. Existing mining claims that have valid existing rights and mining operations could occur in the ACEC. The BLM will be required to perform validity exams on the existing claims to determine if they are valid claims before any operation may proceed within the ACEC. The operation could proceed once the review of the plan of operation, NEPA review, and Section 7 consultation have occurred.

b. Inform operators submitting a notice for activities within desert tortoise habitat, but outside of ACECs, of their responsibilities to comply with specific provisions of the Endangered Species Act.

Table 21
Areas Closed to Solid Leasable, Locatable, and Mineral Materials

Name	Acres
Andies Mine Trilobite Site	180
Ash Springs Withdrawal	80
Baker Archaeological Site ACEC	80
Baker Withdrawal	6,720
Baking Powder Flat ACEC	13,640
Beaver Dam Slope ACEC[1]	36,800
Blue Mass Scenic Area ACEC	950
Caliente Field Station	2
Cleve Creek Recreation Site	90
Condor Canyon ACEC	4,500
Designated Wilderness/Wilderness Study Areas	1,153,500
Egan Crest Trailhead	250
Garnet Hill	160
Rock Animal Corral	160
Highland Range ACEC	6,900
Honeymoon Hill / City of Rocks ACEC	3,900
Illipah Reservoir	290
Kane Spring ACEC[1]	57,190
Kirch Wildlife Management Area	5,000
Coyote Springs leased public lands (congressional)	6,200
Lincoln County Conservation, Recreation, and Development Act Corridors	119,460
Lincoln County Conservation, Recreation and Development Act State Park	4,780
Lincoln County Proposed Disposals	57,000
Lower Meadow Valley Wash ACEC[2]	25,000
Mormon Mesa ACEC[1]	66,430
Mount Irish ACEC	15,100
Murry Spring Watershed	1,255
Pahroc Rock Art ACEC	2,400
Pony Springs Fire Station	10
Rose Guano Bat Cave ACEC	40
Sacramento Pass Recreation Site	440
Schlesser Pincushion ACEC	4,930
Shooting Gallery ACEC	15,600
Shoshone Ponds ACEC	1,240
Snake Creek Indian Burial Cave ACEC	40
Steptoe Valley Wildlife Management Area	6,265
Swamp Cedar ACEC	3,200
Ward Mountain Recreation Site	240
White Pine County Conservation, Recreation, and Development Act Additional Withdrawal	98,125
White Pine County Conservation, Recreation, and Development Act Airport Expansion	1,550
White Pine County Conservation, Recreation, and Development Act Industrial Park Expansion	200
White Pine County Conservation, Recreation, and Development Act Proposed Disposals	18,600
White Pine County Shooting Range	255
White River Archaeological District	230
White River Valley ACEC	13,100
Total*	**1,752,082**

* Total acres differ from summary table due to overlap among areas and categories.

[1] Subject to exception for existing valid claims.
[2] Closed for solid leasable and locatable minerals, but open with special stipulations for mineral materials. Mineral materials activities subject to controlled surface use, seasonal timing restrictions, restricted or no use in avoidance areas (e.g., riparian areas, live water, areas with special wildlife or plant features, and sensitive viewsheds), additional NEPA analysis, and Section 7 consultation.

Table 22
Summary of Locatable Minerals

	Acres
Open to Locatable Minerals	9,855,400
Closed – Designated Wilderness/Wilderness Study Areas	1,153,500
Closed – Discretionary	491,100
Total	**11,500,000**

[1] Rounded to hundreds.

Parameter – Mineral Materials (Salable Minerals)

MIN-17: Open to mineral materials – Allow disposal of mineral materials on approximately 9.9 million acres of federal mineral estate, subject to best management practices (see **Table 23** and **Map 21**).

Table 23
Summary of Mineral Materials

	Acres[1]
Open to Mineral Materials	9,865,600
Closed – Designated Wilderness/Wilderness Study Areas	1,153,500
Closed – Discretionary	480,900
Total	**11,500,000**

[1] Rounded to hundreds.

MIN-18: Space mineral material sites appropriately to accommodate public and private needs while preserving environmental qualities.

MIN-19: Maintain and locate community pits and common use areas to provide for the needs of local communities as they develop.

MIN-20: Closed to mineral materials – Close approximately 1.6 million acres to mineral materials disposal as shown in **Table 23** and **Map 21**.

MIN-21: Apply the following special management actions for mineral material disposal within desert tortoise habitat (also see Appendix D):

a. Close the Kane Springs, Mormon Mesa and Beaver Dam Slope ACECs to mineral material disposal except for a 1-mile-wide corridor, 0.5-mile each side of the road, on designated roads (U.S. Highway 93, Carp-Elgin, and Kane Springs roads). Space mineral material site developments to provide approximately 10 miles between adjacent sites. This corridor will be open only for free use permits and

federal highway material site rights-of-way. Within desert tortoise ACECs, allow mineral materials disposal within the three designated 1-mile-wide corridors only from November 1 through February 28/29.

b. Close and reclaim existing pits and designations identified as not needed to meet current and future demand.

Monitoring – Geology and Mineral Extraction

Monitoring of mineral action disturbances will ensure compliance with Title 43 Code of Federal Regulations Subparts 3100 (oil and gas leasing), 3200 (geothermal leasing), 3500 (solid mineral leasing), 3600 (mineral materials disposal), 3715 (mining occupancy), 3802 (mining, wilderness review), and 3809 (surface management) regulations. Monitoring activities will consist of periodic field inspections of mineral extraction disturbances.

Monitoring for leasable minerals will ensure compliance with applicable laws and regulations, term and conditions of leases, standard practices and procedures for geophysical exploration, and conditions of approval for drilling and production operations. On producing leases, monitoring is intended to ensure an accurate accounting of material produced and protect the environment and public health and safety. Monitoring will include field inspection of leasable mineral activities as authorized under Title 43 Code of Federal Regulations Subparts 3161 and 3590.

Monitoring for locatable minerals will include periodic field inspections of mining and exploration operations. BLM policy establishes minimum inspection frequencies for mining operations as follows: quarterly inspections are required for all operations using cyanide, and biannual inspections for all other active operations. Operations in sensitive areas or operations with a high potential for greater than usual impacts will be inspected more often. Reclamation would be in accordance with the Title 43 Code of Federal Regulations Subpart 3809, 3715, and BLM Handbook H3042-1. Any noncompliance items will be noted and resolved in accordance with Title 43 Code of Federal Regulations Subparts 3809 and 3715.

Monitoring for mineral materials will ensure compliance with applicable laws, regulations, BLM policy contained in BLM Manual Section 3600 and Handbook H-3600-1, the Title 43 Code of Federal Regulations Subpart 3600 regulations, and the requirements of approved contracts and operation plans. An accurate accounting of material removed; protection of the environment and public health and safety; identification and resolution of mineral material trespass issues; and reclamation will be ensured. Monitoring activities will include periodic field inspection of common use areas and other mineral material extraction operations. Operations in sensitive environmental areas or operations with a high potential for greater than usual impacts will be inspected more often and noncompliance items will be noted under procedures as directed by Title 43 Code of Federal Regulations Subpart 3600.

Watershed

The planning area has been divided into 61 watershed units (entire watersheds or manageable portions thereof). Watershed conditions are controlled by climate, geology, topography, vegetation, and soil characteristics. Vegetation and soil conditions change naturally over time in response to climate, fire, and other natural processes and management. The rate water is captured by the watershed, the amount of storage available, and the rate and location of water release depends on the amount and type of vegetation and type and condition of soil. Thus, healthy watersheds are dependent on achieving or maintaining land health standards.

Goals – Watershed

Manage watersheds to achieve and maintain resource functions and conditions required for healthy lands and sustainable uses.

Northeastern Great Basin Resource Advisory Council Standards

- Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, and land form.
- Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.
- Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics; to provide suitable feed, water, cover, and living space for animal species; and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.
- Land use plans will recognize cultural resources within the context of multiple use.

Mojave/Southern Great Basin Resource Advisory Council Standards

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

- 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.

Objectives – Watershed

To manage watersheds that display physical and biological conditions or functions required for necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses.

Management Actions – Watershed

WS-1: Perform watershed analysis initially on the following watersheds: North Spring Valley, Antelope Valley, Gleason Creek, Smith Valley, South Steptoe Valley, Clover Creek South, North Antelope Valley, Steptoe A, and Spring Valley. When these analyses are complete, analyze the high priority watersheds listed in **Table 24** followed by the low priority watersheds.

Table 24
Watershed Priority for Analysis and Treatment

Watershed Name	Priority	Watershed Name	Priority	Watershed Name	Priority
Antelope Valley	High	North Spring Valley	High	Big Sand Springs Valley	Low
Beaver Dam Wash	High	Panaca Valley	High	Butte	Low
Cave Valley	High	Patterson Wash	High	Central Little Smoky Valley	Low
Clover Creek North	High	Rose Valley	High	Coal Valley	Low
Clover Creek South	High	Smith Valley	High	Deep Creek	Low
Coyote Springs	High	Snake Valley South	High	Delamar Valley	Low
Dry Lake Valley	High	South Spring Valley	High	Duck Creek Basin	Low
Dry Valley	High	South Steptoe Valley	High	Egan Basin	Low
Duck Water	High	Spring Valley	High	Emmigrant	Low
Eagle Valley	High	Spring Valley South East	High	Fox-gap Mountain	Low
Escalante Desert	High	Spring Valley South West	High	Garden Valley	Low
Gleason Creek	High	Steptoe A	High	Jakes Valley	Low
Hamblin Valley	High	Steptoe B	High	North Little Smoky Valley	Low
Huntington	High	Steptoe C	High	Park Range	Low
Kane Spring Wash	High	Tikaboo Valley	High	Railroad Valley	Low
Lake Valley	High	Toquop Wash	High	Ruby Valley	Low
Long Valley	High	Tule Desert	High	Sand Hollow Wash	Low
Meadow Valley Wash N	High	White River Central	High	Sand Spring Valley	Low
Meadow Valley Wash S	High	White River North	High	Snake Valley North	Low
Newark	High	White River South	High	South Little Smoky Valley	Low
North Antelope Valley	High				

WS-2: Additional forage resulting from implementation of vegetation restoration projects identified through the watershed analysis process will be allocated to livestock and wild horses and/or reserved for watershed maintenance and wildlife, depending on the degree of watershed function required to maintain rangeland health standards.

Monitoring – Watershed

Most parameters essential for evaluating watershed health (e.g., vegetation cover, species composition and community structure, erosion features, resistance to disturbance, etc.) will be monitored in conjunction with other resource programs such as vegetation and soils.

Fire

The BLM is charged with clearly defining fire management goals, objectives, and actions in comprehensive fire management plans. Strategic watershed-scale fuel management and fire use planning that integrates a variety of treatment methods, will cost-effectively reduce fuel hazards to acceptable levels and benefit ecological system health. Fire management programs and activities should be based upon safety to fire fighters and the public, protecting resources, minimizing costs, and achieving land management objectives.

Goals – Fire

Provide an appropriate management response to all wildland fires, with emphasis on firefighter and public safety, consistent with overall management objectives. Return fire to its natural role in the ecological system and implement fuels treatments, where applicable, to aid in returning fire to the ecological system. Establish a community education program that includes fuels reduction within the wildland urban interface to create fire-safe communities.

Objectives – Fire

To manage wildland and prescribed fires as one of the tools in the treatment of vegetation communities and watersheds to achieve the desired range of condition for vegetation, watersheds, and other resource programs (e.g., livestock, wild horses, soils, etc.).

Management Actions – Fire

FM-1: Use prescribed fire and wildland fire in compliance with applicable smoke management requirements as specified by the Nevada Smoke Management Program. Obtain annual permits and provide daily evaluation of the fire conditions to ensure applicable air quality regulations are not violated.

FM-2: Coordinate with the Department of Defense when planning prescribed burns utilizing aircraft within their military operating air spaces in the planning area.

FM-3: Implement and update the Ely Fire Management Plan, as needed. Tier the Ely Fire Management Plan to the general fire management actions in this RMP. Fire management units within the planning area have been identified on the basis of similar vegetation type and condition, management constraints, issues, and objectives and strategies (see **Map 22** and **Table 25**). The following management actions will take place within those fire management units.

Table 25
Summary of Fire Management Units for the Ely District Office

Number	Name	Type[1]
NV-040-01	Meadow Valley-Deerlodge	Vegetation
NV-040-02	Irish/Timber/Worthington Mountains	Vegetation
NV-040-03	Northern Mountains	Vegetation
NV-040-04	Southern Benches	Vegetation
NV-040-05	Seaman Range-Murphy Gap	Vegetation
NV-040-06	Elgin/Blue Nose/Kane Spring Pinyon Juniper	Vegetation
NV-040-07	Southern Valleys	Vegetation
NV-040-08	Northern Valleys	Vegetation
NV-040-09	Lincoln County	Wildland Urban Interface
NV-040-10	Ely/Lund/Duckwater	Wildland Urban Interface
NV-040-11	Cherry Creek/Goshute	Wildland Urban Interface
NV-040-12	Ely/Lund Watershed and Wildland Urban Interface	Wildland Urban Interface
NV-040-13	Caliente Watershed and Wildland Urban Interface	Wildland Urban Interface
NV-040-14	Southern Benches	High Value Habitat
NV-040-15	Northern Benches	High Value Habitat
NV-040-16	Buck and Bald/Diamond Mountains	High Value Habitat
NV-040-17	North Pahroc and Pahranagat	High Value Habitat
NV-040-18	Bullwhack	High Value Habitat
NV-040-19	Illipah/Wells Station/Horse and Quinn	High Value Habitat
NV-040-20	Clover/Delamar/South Pahroc/Irish	High Value Habitat
NV-040-21	Highlands and South Egan Range	High Value Habitat
NV-040-22	Kern/Snake/Cherry Creek/Park Mountain	High Value Habitat
NV-040-23	Mojave	Special Management Area
NV-040-24	Mojave and Highlands	Special Management Area
NV-040-25	Alamo and Hiko	Wildland Urban Interface

[1] A fire management type is assigned to each fire management unit to clearly define its primary resource management objective and fire protection values.

1) **Wildland fire suppression** – provide Appropriate Management Response on all wildland fires that occur within the fire management jurisdiction of the Ely District Office;

2) **Fuels treatments** – develop and implement prescribed fire and non-fire fuels treatments (mechanical, chemical, and biological) to create fire-safe communities, protect private property, achieve resource management objectives (see the discussion on Vegetation Resources), and restore ecological system health;

3) **Wildland fire use** – manage, to the extent practical for resource benefit, to improve ecological system function, and to allow fire to function as a natural part of the ecological system, approximately 8.9 million acres would be available for wildland fire use;

4) **Emergency stabilization and rehabilitation** – design and implement to achieve vegetation, habitat, soil stability, and watershed objectives in accordance with the Programmatic Emergency Stabilization and Rehabilitation Plan; and

5) **Community assistance/protection** – establish an active community education and assistance program where needed to create fire-safe communities and prevent catastrophic impacts on sensitive natural resources.

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

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

FM-6: Base fire management priorities on: 1) firefighter and public safety, and 2) resource protection objectives.

FM-7: Implement the following management actions for desert tortoise habitat (see **Map 7**). Implement the additional conditions for desert tortoise and conditions for the Southwest willow flycatcher, White River springfish, Pahrump poolfish, and Big Springs spinedace habitat contained in the 2008 Biological Opinion (Appendix D) (also refer to discussions on Special Status Species).

- Assign a qualified resource advisor to each wildland fire to provide relevant information on the occurrence of desert tortoise and important habitat to the incident commander. The resource advisor serves as the field contact representative responsible for coordination with the U.S. Fish and Wildlife Service.

- Do not authorize burning out of unburned fingers or islands of vegetation, unless it is necessary for safety.

- Establish fire camps, staging areas, and helispots in previously disturbed areas outside of ACECs, where possible, and in consultation with a qualified resource advisor. Prior to use of any area, allow a resource advisor to survey 100 percent of the area. If a desert tortoise or desert tortoise burrow is found, the area will be adjusted, if possible, to avoid the tortoise or burrow. If avoidance is not possible, a qualified desert tortoise biologist will examine the burrow for occupancy by tortoise. Any tortoise found in burrows or within the area will be relocated.

- Restrict off-road travel and use of tracked vehicles to the minimum necessary to suppress wildland fires. All vehicles will be parked as close to the road as possible using disturbed areas or wide spots in the road to turn around. All tracks will be obliterated immediately following fire suppression activities, to the extent possible.

- Provide all firefighters and support personnel with a briefing on desert tortoises and their habitat to minimize take, particularly those associated with vehicle use.

- Control the speed of fire suppression vehicles to ensure that tortoises on roads can be seen and avoided.

- If possible, rehabilitate fire lines and disturbances associated with fire suppression activities. Determine seed mixtures on a site-specific basis dependent on the probability of successful establishment. Use native and adaptive species that compete with annual invasive species or meet other objectives.

- Conduct post-fire suppression surveys to identify desert tortoise mortalities and report any take of desert tortoise.

- Pre-position suppression fences in critical areas during of periods of high fire danger.

Monitoring – Fire

Monitoring will determine whether fire management strategies, practices, and activities are meeting resource management objectives, public concerns, and land health standards. Pre-fire condition and post-fire effects will be determined by monitoring plant community composition and trends in burn areas to determine natural recovery, responses from seed planting, and weed and cheatgrass expansion. Monitoring methods may include photo points; density, cover, and frequency plots (pre- and post-burn); fire regime condition class determination (degree of departure from natural regime); and ocular estimates.

Noxious and Invasive Weeds

The Federal Land Policy and Management Act of 1976 and Pesticide Registration Improvement Act of 2003 direct the BLM to ". . . manage public lands according to the principles of multiple-use and sustained yield . . ." and ". . . manage the public lands to prevent unnecessary degradation . . . so they become as productive as feasible." The "Carlson-Foley Act" (Public Law 90-583) and the "Federal Noxious Weed Act" (Public Law 93-629) direct weed control on public land. Executive Order 13112, Invasive Species, was authorized to prevent the introduction of invasive species, provide for their control, and to minimize the economic, ecological, and human health impacts caused by these species. Nevada Revised Statute 555, Control of Insects, Pests, and Noxious Weeds, provides information regarding the designation and eradication of and inspection for noxious weeds within the State of Nevada.

Goals – Noxious and Invasive Weeds

Prevent the introduction and spread of noxious and invasive weeds. Control or eradicate existing populations.

Objectives – Noxious and Invasive Weeds

To reduce introduction of, and the areal extent of, noxious and invasive weed populations and the spread of these populations.

Management Actions – Noxious and Invasive Weeds

WEED-1: 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.

WEED-2: Develop weed management plans that address weed vectors, minimize the movement of weeds within public lands, consider disturbance regimes, and address existing weed infestations.

WEED-3: 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.

WEED-4: All straw, hay, straw/hay, or other organic products used for reclamation or stabilization activities, must be certified that all materials are free of plant species listed on the Nevada noxious weed list or specifically identified by the Ely District Office.

WEED-5: Where appropriate, inspect source sites such as borrow pits, fill sources, or gravel pits used to supply inorganic materials used for construction, maintenance or reclamation to ensure they are free of plant species listed on the Nevada noxious weed list or specifically identified by the Ely District Office. Inspections will be conducted by a weed scientist or qualified biologist.

WEED-6: Where appropriate, vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. Vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Vehicles used for emergency fire suppression will be cleaned as a part of check-in and demobilization procedures. Cleaning efforts will concentrate on tracks, feet or tires, and on the undercarriage. Special emphasis will be applied to axles, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using global positioning systems or other mutually acceptable equipment and provided to the Ely District Office Weed Coordinator or designated contact person.

WEED-7: Animals used on public lands by special recreation permittees or by contractors for weed control or reclamation will be cleaned, quarantined, and fed weed-free feed prior to being used or released on public lands. The length of this quarantine will be specified in the special recreation permit or contract.

WEED-8: Prior to the entry of vehicles and equipment to a planned disturbance area, a weed scientist or qualified biologist will identify and flag areas of concern. The flagging will alert personnel or participants to avoid areas of concern.

WEED-9: To minimize the transport of soil-borne noxious weed seeds, roots, or rhizomes, infested soils or materials will not be moved and redistributed on weed-free or relatively weed-free areas. In areas where infestations are identified or noted and infested soils, rock, or overburden must be moved, these materials will be salvaged and stockpiled adjacent to the area from which they were stripped. Appropriate measures will be taken to minimize wind and water erosion of these stockpiles. During reclamation, the materials will be returned to the area from which they were stripped.

WEED-10: Prior to project approval, a site-specific weed survey will occur and a weed risk assessment will be completed. Monitoring will be conducted for a period no shorter than the life of the permit or until bond release and monitoring reports will be provided to the Ely District Office. If the presence and/or spread of noxious weeds is noted, appropriate weed control procedures will be determined in consultation with Ely District Office personnel and will be in compliance with the appropriate BLM Handbook sections and applicable laws and regulations. All weed control efforts on BLM-administered lands will be in compliance with BLM Handbook H-9011, H 9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public Lands, and H-9015 Integrated Pest Management. Submission of Pesticide Use Proposals and Pesticide Application Records will be required.

Monitoring – Noxious and Invasive Weeds

Monitoring of noxious and invasive weeds within the planning area will continue in cooperation with the State of Nevada, counties, and private interests as well as other federal agencies. Inventories to identify new introductions, distribution, and density of noxious weed populations will be carried out on an annual basis in cooperation with these entities as follows:

- Known noxious weed sites that are identified for treatment will be visited each year and evaluated for effectiveness of control.
- Known sites not identified for treatment will be visited as funding is available.
- All known sites visited will be located with a global positioning system unit (or other suitable technology), measured, and a determination of the need for future treatment will be made.
- Inventories for new noxious weeds will be conducted within the planning area subject to funding. Emphasis will be placed on areas having a high potential for weed introduction and dispersal, such as road corridors and off-highway vehicle trails.
- All burned areas (natural and prescribed) will be surveyed for noxious weeds following the burn as funding becomes available. Any newly discovered sites will be located with a global positioning system unit, measured, and a determination of the need for future treatment will be made.

Special Designations Management

This section deals with a variety of special designations mandated by a number of laws, regulations, and policies. Included are ACECs, the BLM's Back Country Byway program, wilderness designated by Congress, wilderness study areas, wild and scenic rivers, and other special designations such as National Historic Trails.

Section 202(c)(3) of Federal Land Policy and Management Act mandates that priority be given to the designation and protection of ACECs. These areas are defined in section 103(a) as areas where special management attention is required to protect and prevent irreparable damage to important values, resources, systems or processes, or to protect life and safety from natural hazards.

Goals – Special Designations Management

Evaluate areas of interest for special designation and appropriately manage those areas that meet necessary requirements.

Objectives – Special Designations Management

To ensure that multiple use activities within the planning area are consistent with the management plans developed for special designation areas such as ACECs.

Management Actions – Special Designations Management

Parameter – Areas of Critical Environmental Concern

SD-1: Manage the Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs primarily for the recovery of the desert tortoise (203,670 acres) (see **Map 23** and **Table 26**; also see Appendices C and D).

SD-2: Develop management plans for the Kane Springs, Beaver Dam Slope, Mormon Mesa, and Lower Meadow Valley Wash ACECs within 3 years to address and implement multiple-use management actions and conservation measures for desert tortoise and Southwestern willow flycatcher. When completing the management plan for Lower Meadow Valley Wash ACEC, all Union Pacific rights-of-way (approximately 2,675 acres) located within the ACEC will receive special consideration noting the legal limitations contained in the right-of-way grants (also see Appendix D).

SD-3: Designate 16 ACECs totaling an additional 106,980 acres. See **Map 23** and **Table 26** for additional information including management prescriptions for each of the ACECs.

Table 26
Management Prescriptions for ACECs[1]

Baker Archaeological Site (80 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposal
Fire management	Open[6]
Transportation	No New Roads
Livestock management	Unavailable
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]
Baking Powder Flat (13,640 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III, IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy/Closed
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposal
Fire management	Open[6]
Transportation	No New Roads
Livestock management	Available[8]
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]
Beaver Dam Slope (36,800 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Limited[9]/avoidance area[2]
Off-highway vehicle use	Closed/limited[3]
Visual resource management class	IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy with exception[10]
Locatable minerals	Closed[11]
Mineral materials	Closed
Lands disposal	No disposal
Fire management	Limited[12]
Transportation	Limited
Livestock management	Unavailable
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]

Table 26 (Continued)

Blue Mass Scenic Area (950 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	I
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposal
Fire management	Limited[12]
Transportation	Limited, no new roads
Livestock management	Available[8]
Fuelwood cutting	Closed
Renewable energy	Closed[7]
Condor Canyon (4,500 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	II, III
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy/Closed
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposal
Fire management	Limited[12]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Open[6]
Renewable energy	Closed[7]
Highland Range (6,900 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III, IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy/Closed
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposal
Fire management	Limited[12]
Transportation	Limited
Livestock management	Available[8]
Fuelwood cutting	Closed
Renewable energy	Closed[7]

Table 26 (Continued)

Honeymoon Hill/City of Rocks (3,900 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III, IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Open[6]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Open[6]
Renewable energy	Closed[7]
Kane Springs (57,190 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Limited[9]/avoidance[2]/exclusion area
Off-highway vehicle use	Closed/limited[3]
Visual resource management class	I, II, III, IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	Closed
Locatable minerals	Closed[11]
Mineral materials	Limited[13]
Lands disposal	No disposal
Fire management	Limited[12]
Transportation	Limited
Livestock management	Unavailable
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]
Lower Meadow Valley Wash (25,000 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	II, III, IV
Plant collecting	Closed
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Open[14]
Lands disposal	No disposals
Fire management	Limited[12]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Closed
Renewable energy	Closed[7]

Table 26 (Continued)

Mount Irish (15,100 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	II, III
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy/Closed
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Open[6]
Transportation	Limited
Livestock management	Available[8]
Fuelwood cutting	Closed
Renewable energy	Closed[7]
Mormon Mesa (109,680 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Limited[9]/avoidance[2]/exclusion area
Off-highway vehicle use	Closed/limited[3]
Visual resource management class	I, II, III, IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy with exception[10]
Locatable minerals	Closed[11]
Mineral materials	Limited[13]
Lands disposal	No disposal
Fire management	Limited[12]
Transportation	Limited
Livestock management	Unavailable
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]
Pahroc Rock Art (2,400 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	II/III
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Open[6]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Open[6]
Renewable energy	Closed[7]

Table 26 (Continued)

Rose Guano Bat Cave (40 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	II
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Open[6]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Open[6]
Renewable energy	Closed[7]
Schlesser Pincushion (4,930 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	II
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Limited[12]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]
Shooting Gallery (15,600 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]; valid existing rights will remain in effect
Off-highway vehicle use	Limited[3]
Visual resource management class	II, III
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy/Closed
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Open[6]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Open[6]
Renewable energy	Closed[7]

Table 26 (Continued)

Shoshone Ponds (1,240 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Exclusion area; rights-of-way will not be granted within the area
Off-highway vehicle use	Limited[3]
Visual resource management class	III
Plant collecting	Closed
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Limited[12]
Transportation	Limited
Livestock management	Available[6]
Fuelwood cutting	Closed
Renewable energy	Closed[7]
Snake Creek Indian Burial Cave (40 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Open[6]
Transportation	No new roads
Livestock management	Unavailable
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]
Swamp Cedar (3,200 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III
Plant collecting	Closed
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Limited[12]
Transportation	Limited
Livestock management	Available[8]
Fuelwood cutting	Closed
Renewable energy	Closed[7]

Table 26 (Continued)

White River Valley (13,100 acres)	
Management Activities	**Management Prescriptions**
Land Use Authorization	Avoidance area[2]
Off-highway vehicle use	Limited[3]
Visual resource management class	III, IV
Plant collecting	Limited[4]
Road maintenance	Limited[5]
Leasable minerals	No surface occupancy
Locatable minerals	Closed
Mineral materials	Closed
Lands disposal	No disposals
Fire management	Limited[12]
Transportation	No new roads
Livestock management	Available[8]
Fuelwood cutting	Not applicable
Renewable energy	Closed[7]

[1] Acres within the existing Beaver Dam Slope, Kane Springs, and Mormon Mesa ACECs are those within the planning area (see **Map 23**).
[2] Avoidance area; granting rights-of-way (surface, subsurface, aerial) within the area will be avoided, but rights-of-way may be granted if there is minimal conflict with identified resource values and impacts can be mitigated.
[3] Off-highway vehicle use is limited to designated roads and trails. Areas within ACECs designated as wilderness are closed to off-highway vehicle use.
[4] Plant materials, including common species, may be collected by permit only.
[5] Road maintenance is limited to the designated roadway; shoulder barrow/ditch construction is be limited to only that necessary to ensure public safety and serviceability of the road.
[6] The activity is allowed in the area. NEPA compliance and clearances for cultural resources and threatened and endangered species required for some activities.
[7] Closed to renewable energy facilities; avoidance area for ancillary rights-of-way for access roads, transmission lines, and pipelines.
[8] Livestock grazing is controlled through terms and conditions on the grazing permit.
[9] Rights-of-way; limit authorization of future communication sites to existing established rights-of-way unless technically unfeasible and encourage use of existing corridors for all future rights-of-way when possible.
[10] Exception requires Section 7 consultation with a no adverse impact conclusion.
[11] Subject to exception for valid claims existing prior to designation as an ACEC.
[12] Limits could be placed on fire management activities.
[13] Closed except for free use permits and federal highway material site rights-of-way on a 1-mile corridor, 0.5 mile each side of road on three designated roads.
[14] Open with special stipulations. Open to mineral material activities subject to controlled surface use, seasonal timing restrictions, restricted or no uses in avoidance areas (e.g., riparian areas, live water, areas with special wildlife or plant features, and sensitive viewsheds), additional NEPA analysis, and Section 7 consultation.

Parameter – Back Country Byways

SD-4: Retain the Mount Wilson Back Country Byway. In addition, designate the Rainbow Canyon and the Silver State Trail as back country byways (see **Map 24**).

Parameter – Designated Wilderness

SD-5: Manage 22 designated wilderness areas in accordance with the Wilderness Act of 1964; the Nevada Wilderness Protection Act of 1989; the Lincoln County Conservation, Recreation, and Development Act of 2004; the White Pine County Conservation, Recreation and Development Act of 2006.

Twenty-two designated wilderness areas totaling approximately 1.1 million acres have been designated by Congress in this decision area. This includes six citizen-proposed areas of wilderness quality that were not managed by the Ely District Office as wilderness study areas (see **Map 23**).

Parameter – Wilderness Study Areas

SD-6: The Ely District Office currently manages the Park Range and Riordan's Well wilderness study areas in Nye County. Portions of the Blue Eagle and Antelope Range wilderness study areas, which are managed by the Battle Mountain District Office, also overlap with the planning area. Wilderness study areas within the planning area total approximately 81,000 acres. Manage wilderness study areas under the Interim Management Policy for Lands Under Wilderness Review until such time as Congress makes a determination regarding wilderness designations. Manage lands identified as having wilderness characteristics to protect those characteristics through a variety of other land use plan decisions such as establishing visual resource management class objectives to preserve the existing landscape; attaching conditions to permits, leases, and other authorizations; and establishing limited or closed off-highway vehicle designations. Manage lands released from wilderness study area designation by Congress in the same manner as surrounding lands. In the event that lands released from wilderness study area designation are protected under some other special designation, those lands will retain those protections (e.g., ACECs within a wilderness study area). Wilderness study area lands not retained under some other special designation will be released for other purposes and uses. These other special designations are not a substitute for wilderness designation but provide specific management prescriptions to protect important resources.

Parameter – Other Special Designations

This section describes management for special designations other than those described in the previous subsections. The types of special designations include scenic areas, geologic areas, natural areas, research natural areas, and rock hound areas. No herd management areas are recommended for designation as wild horse ranges.

No rivers have been identified for wild and scenic designation within the planning area. A full inventory and evaluation has not occurred. This evaluation potentially could identify rivers or river segments within the Ely District Office jurisdiction that are eligible for inclusion under the Wild and Scenic Rivers Act. If appropriate, management actions associated with these locations will be amended to the RMP.

SD-7: Manage the three special designation areas that are retained as follows (see Management Action SD-3 and **Map 23**):

- White River Narrows Archaeological District (500 acres)

    1. Roads – Maintenance of existing roads (except State Route 318) will only be allowed if it is determined that maintenance will not have an effect on the setting and features that placed this site on the National Register of Historic Places in 1978. New roads will not be permitted.

2. Structures – Maintenance and construction of structures is allowed if identified in existing habitat management plans or if needed for management of natural values.

- The Garnet Hill Rock Hounding Area (totaling 1,210 acres)

  1. This entire area will be segregated from disposal under the public land laws. The recreation site (160 acres) will be closed to solid leasable, locatable, and mineral materials. In addition, the 160 acres will have a no surface occupancy condition for fluid minerals leasing.

- The Rock Animal Corral Archaeological Area (160 acres)

  1. The area will be closed to solid leasable, locatable, and mineral materials. In addition, the area will have a no surface occupancy condition for fluid mineral leasing.

SD-8: Designate the following 7 areas as ACECs (see Management Action SD-3 and **Map 23**):

- Scenic Areas – Blue Mass
- Natural Areas – Shoshone Ponds, Swamp Cedar
- Archaeological Sites – Rose Guano Bat Cave, Snake Creek Indian Burial Cave, Baker, Mount Irish

SD-9: Drop the following nine areas, totaling 2,275 acres from special designation status:

- Scenic Areas – Kious Spring, Weaver Creek
- Geologic Areas – Goshute Cave, Leviathan Cave, Cave Valley Cave, Whipple Cave
- Research Natural Areas – Pygmy Sage
- Archaeological Sites – Baker Creek, Garrison

Monitoring – Special Designations Management

Areas managed as a special designation (such as ACECs, back country byways, and designated wilderness) will be monitored annually to determine if the resource values for which the area was designated are stable. Monitoring will focus on threats to resource values and the effectiveness of management provisions in protecting and preserving those resource values. Monitoring will assist the BLM in tracking resource conditions and making effective decisions to improve conditions for the special resource over time. Where necessary, the monitoring strategy for special designation areas will be refined during activity level planning, e.g., development of ACEC management plans and designated wilderness management plans.

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APPENDIX A
RESOURCE PROGRAM BEST MANAGEMENT PRACTICES

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Best management practices are management actions that have been developed by agency, industry, scientific, and/or working groups as methods for reducing environmental impacts to certain resources associated with certain kinds of activity. They have been organized by the source of the best management practice. Section 1 and Section 2 have been developed by the Ely District Office specifically to guide management in the decision area. Section 3 contains the Wind Energy EIS best management practices, which was developed by the BLM Washington Office and is applied nationally.

Best management practices typically are implemented at the discretion of the BLM Authorized Officer (the District Manager or his/her designee) at the activity plan or project-specific level. The impact analysis in any project-specific National Environmental Policy Act (NEPA) document would be based on the reduction of impacts afforded by the application of those best management practices that are appropriate for the specific project under review. Best management practices may be added, deleted, or modified through plan maintenance as new and better information dictates.

APPENDIX A, SECTION 1
RESOURCE PROGRAM BEST MANAGEMENT PRACTICES

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Section 1 contains best management practices for the Ely District Office. They have been organized by the primary resource the best management practices would benefit or protect. Each best management practice could actually be implemented by a number of resource programs within the Field Office. Between the Draft RMP/EIS and the Proposed RMP/Final EIS, certain best management practices have been incorporated into Chapter 2.0 of the Approved RMP as management actions, edited for clarity, or deleted because they are no longer appropriate. Best management practices would be implemented at the discretion of the Ely District Office on a project-specific basis, depending on the specific characteristics of the project area and the types of disturbance being proposed. They may not be appropriate to implement in all cases.

Air Resources

1. Use dust abatement techniques on unpaved, unvegetated surfaces to minimize airborne dust.

2. Post and enforce speed limits (e.g., 25 miles per hour) to reduce airborne fugitive dust.

3. Cover construction materials and stockpiled soils if they are a source of fugitive dust.

4. Use dust abatement techniques before and during surface clearing, excavation, or blasting activities.

Water Resources

1. Avoid the application of fire retardant or foam within 300 feet of a stream channel or waterway, when possible, except for the protection of life and property. Aerial application and use of retardants and foams would be consistent with national policy guidelines established by the National Office of Fire and Aviation, as amended.

2. Fire engines that have surfactant foam mixes in tanks must be fitted with an anti-siphon (back flow protection valve) if filled directly from a stream channel.

3. Construct a containment barrier around all pumps and fuel containers utilized within 100 feet (30.5 meters) of a stream channel. The containment barrier would be of sufficient size to contain all fuel being stored or used on site.

4. Prior to use on lands administered by the Ely Field Office, all fire suppression equipment from outside the planning area utilized to extract water from lakes, streams, ponds, or spring sources (e.g., helicopter buckets, draft hoses, and screens) will be thoroughly rinsed to remove mud and debris and then disinfected to prevent the spread of invasive aquatic species. Rinsing equipment with disinfectant solution will not occur within 100 feet of natural water sources (i.e., lakes, streams, or springs). Ely suppression equipment utilized to extract water from water sources known to be contaminated with invasive aquatic species, as identified by the U.S. Fish and Wildlife Service and Nevada Department of Wildlife, also will be disinfected prior to use elsewhere on lands administered by the Ely Field Office.

5. Do not dump surfactant foam mixes from fire engines within 600 feet of a stream channel.

6. Do not conduct fire retardant mixing operations within 600 feet of a stream channel.

7. Remove all modifications made to impound or divert stream flow by mechanical or other means to facilitate extraction of water from a stream for fire suppression efforts when suppression efforts are completed.

8. When drafting or dipping water during fire operations, continuously monitor water levels at the site that water is being removed from. Do not allow water extraction to exceed the ability of the recharge inflow

to maintain the water levels that exist at the time initial attack efforts began. If the water level drops below this predetermined level, all water removal would cease immediately until water levels are recharged.

9. When possible, do not cross or terminate fire control lines at the stream channel. Terminate control lines at the edge of the riparian zone at a location determined appropriate to meet fire suppression objectives based on fire behavior, vegetation/fuel types, and fire fighter safety.

10. Construct access roads and fords that cross stream channels to BLM road standards.

11. Do not construct new roads or mechanical fire control lines or improve existing roads within 300 feet of a stream channel unless authorized by the BLM Field Manager or Authorized Officer.

12. Limit stream crossings on travel routes and trails to the minimal number necessary to minimize sedimentation and compaction. The BLM Authorized Officer will determine if any impacts need to be rehabilitated by the permittee.

13. Conduct mixing of herbicides and rinsing of herbicide containers and spray equipment only in areas that are a safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes, or wells).

14. A water well may be accepted by the BLM Ely Field Office upon completion of operations. The BLM authorized officer will make the determination whether to accept the well based upon the submission of the well completion forms and relevant hydrogeologic data reports. The well must be installed by drillers licensed by the state of Nevada according to specifications in Nevada Revised Statutes Title 48, Chapter 534.

Soil Resources

1. Require the use of specialized low-surface impact equipment (e.g., balloon tired vehicles) or helicopters, as determined by the BLM Authorized Officer, for activities in off-road areas where it is deemed necessary to protect fragile soils and other resource values.

2. During periods of adverse soil moisture conditions caused by climatic factors such as thawing, heavy rains, snow, flooding, or drought, suspend activities on existing roads that could create excessive surface rutting. When adverse conditions exist, the operator would contact the BLM Authorized Officer for an evaluation and decision based on soil types, soil moisture, slope, vegetation, and cover.

3. When preparing the site for reclamation, include contour furrowing, terracing, reduction of steep cut and fill slopes, and the installation of water bars, as determined appropriate for site-specific conditions.

4. Upon completion or temporary suspension of mining operations, backfill all holes and trenches and re-contour the pit to the natural slope, if possible, with pit walls greater than 3 feet in height knocked down and sloped at 3 horizontal to 1 vertical or to the original topography, whichever is less.

5. Restoration requirements include reshaping, re-contouring, and/or resurfacing with topsoil, installation of water bars, and seeding on the contour. Removal of structures such as culverts, concrete pads, cattle guards, and signs would usually be required. Fertilization and/or fencing of the disturbance may be required. Additional erosion control measures (e.g., fiber matting and barriers) to discourage road travel may be required.

Vegetation Resources

1. Where seeding is required, use appropriate seed mixture and seeding techniques approved by the BLM Authorized Officer.

2. The BLM Authorized Officer will specify required special handling and recovery techniques for Joshua trees, yucca, and some cactus in the southern part of the planning area on a site-specific basis.

3. Keep removal and disturbance of vegetation to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.).

4. Generally, conduct reclamation with native seeds that are representative of the indigenous species present in the adjacent habitat. Document rationale for potential seeding with selected nonnative species. Possible exceptions would include use of nonnative species for a temporary cover crop to out-complete weeds. In all cases, ensure seed mixes are approved by the BLM Authorized Officer prior to planting.

5. Certify that all interim and final seed mixes, hay, straw, and hay/straw products are free of plant species listed on the Nevada noxious weed list.

6. An area is considered to be satisfactorily reclaimed when all disturbed areas have been recontoured to blend with the natural topography, erosion has been stabilized, and an acceptable vegetative cover has been established. Use the Nevada Guidelines for Successful Revegetation prepared by the Nevada Division of Environmental Protection, the BLM, and the U.S. Department of Agriculture Forest Service (or most current revision or replacement of this document) to determine if revegetation is successful.

7. Reclamation bond release criteria would include the following:

8. The perennial plant cover of the reclaimed area would equal or exceed perennial cover of selected comparison areas (normally adjacent habitat). If the adjacent habitat is severely disturbed, an ecological site description may be used as a cover standard. Cover is normally crown cover as estimated by the point intercept method. Selected cover can be determined using a method as described in Sampling Vegetation Attributes, Interagency Technical Reference, 1996, BLM/RS/ST-96/002+1730. The reclamation plan for the area project would identify the site-specific release criteria and associated statistical methods in the reclamation plan or permit.

9. Utility companies will manage vegetation in their rights-of-way for safe and reliable operation while maintaining vegetation and wildlife habitat.

10. Respread weed-free vegetation removed from the right-of-way to provide protection, nutrient recycling, and seed source.

Fish and Wildlife

1. Install wildlife escape ramps in all watering troughs, including temporary water haul facilities, and open storage tanks. Pipe the overflow away from the last water trough on an open system to provide water at ground level.

2. As appropriate, mark certain trees on BLM-administered lands for protection as wildlife trees.

3. Consider seasonal distribution of large wildlife species when determining methods used to accomplish weed and insect control objectives.

4. Protect active raptor nests in undisturbed areas within 0.25 mile of areas proposed for vegetation conversion using species-specific protection measures. Inventory areas containing suitable nesting habitat for active raptor nests prior to the initiation of any project.

5. When used to pump water from any pond or stream, screen the intake end of the draft hose to prevent fish from being ingested. Screen opening size would be a maximum of 3/16 inch (4.7 millimeters).

6. Special recreation use permittees will take action to ensure that race participants and spectators do not harass wildlife.

Special Status Species

1. Avoid line-of-sight views between the power poles along powerlines and sage grouse leks, whenever feasible.

2. Use current science, guidelines, and methodologies (Avian Power Line Interaction Committee 1994, 1996, 2005) for all new and existing powerlines to minimize raptor and other bird electrocution and collision potential.

3. When managing weeds 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.

4. Do not conduct noxious and invasive weed control within 0.5 mile of nesting and brood rearing areas for special status species during the nesting and brood rearing season.

5. To the greatest extent possible, survey all mine adits and shafts slated for closure for bat presence and use prior to being closed. Minimize impacts to bat roosts and bat habitat through the use of current science, guidelines, and methodologies when closing and abandoning mine adits.

6. Develop grazing systems to minimize conflicts with special status species habitat.

7. For streams currently occupied by any special status species, do not allow extraction of water from ponds or pools if stream inflow is minimal (i.e., during drought situations) and extraction of water would lower the existing pond or pool level.

8. When new spring developments are constructed on BLM lands and BLM has the authority to design the project, the source and surrounding riparian area will be fenced, the spring will be developed in a manner that leaves surface water at the source and maintains the associated riparian area, water will be provided outside the exclosure in a manner that provides drinking water for large ungulates, wild horses, and/or livestock so they are less likely to break into the exclosure.

9. Salt and mineral supplements:

   - Base placement of salt and mineral supplements on site-specific assessment.

   - Normally place salt and mineral supplements at least 0.5 mile away from riparian areas, sensitive sites, populations of special status plant species, cultural resource sites.

   - Place salt at least 0.5 mile from any water source including troughs.

   - Place salt and mineral supplements at least 1 mile from sage grouse leks.

   Water hauling:

   - Place water haul sites at least 0.5 mile away from riparian areas, cultural sites, and special status species locations.

   - Limit water hauling to existing roads when possible.

Wild Horses

1. To protect wild horses and wildlife flag all new fences every 16 feet with white flagging that is at least 1 inch wide and has at least 12 inches hanging free from the top wire of the fence.

2. If a project involves heavy or sustained traffic, require road signs for safety and protection of wild horses and wildlife.

Cultural Resources

1. Ensure that all activities associated with the undertaking, within 100 meters of the discovery, are halted and the discovery is appropriately protected, until the BLM authorized officer issues a Notice to Proceed. A Notice to Proceed may be issued by the BLM under any of the following conditions:

    - Evaluation of potentially eligible resource(s) results in a determination that the resource(s) are not eligible;

    - The fieldwork phase of the treatment option has been completed; and

    - The BLM has accepted a summary description of the fieldwork performed and a reporting schedule for that work.

2. The operator will inform all persons associated with the project that knowingly disturbing cultural resources (historic or archaeological) or collecting artifacts is illegal.

3. The BLM may approve cross-country operations of seismic trucks and support vehicles on bare frozen ground or over sufficient snow depth (vehicle traffic does not reveal the ground) so as to prevent surface disturbance.

4. Perform viewshed reclamation when the setting of a site contributes to the significance of the property.

Paleontological Resources

1. When paleontological resources of potential scientific interest are encountered (including all vertebrate fossils and deposits of petrified wood), leave them intact and immediately bring them to the attention of the BLM Authorized Officer.

Visual Resources

1. On industrial facilities authorized by the Ely Field Office, utilize anti-glare light fixtures to limit light pollution.

2. During the implementation of vegetation treatments, create irregular margins around treatment areas to better maintain the existing scenic character of the landscape.

3. When feasible, bury utility lines on public land when in the viewshed of residential or community development.

Travel Management and Off-highway Vehicle Use

1. Design access roads requiring construction with cut and fill to minimize surface disturbance and take into account the character of the landform, natural contours, cut material, depth of cut, where the fill

material would be deposited, resource concerns, and visual contrast. Avoid construction of access roads on steep hillsides and near watercourses where alternate routes provide adequate access.

2. Where adverse impacts or safety considerations warrant, limit or prohibit public access when authorizing specific routes to areas or sites under permit or lease.

Recreation

1. Do not allow surface or underground disturbance to occur within 100 yards (horizontally or vertically) of known cave resources.

2. Where appropriate, do not allow ground disturbing activities within 100 yards of cave entrances, drainage areas, subsurface passages, and developed recreation sites. Do not dispose of waste material or chemicals in sinkholes or gates by cave entrances. If during construction activities any sinkholes or cave openings are discovered, cease construction activities and notify the BLM authorized officer.

Livestock Grazing

1. Water troughs

   - Place troughs connected with spring developments outside of riparian and wetland habitats to reduce livestock trampling damage to wet areas.

   - Control trough overflow at springs with float valves or deliver the overflow back into the native channel.

2. Based on allotment situations and circumstances associated with livestock grazing and multiple use management, implement any or all of the following appropriate management practices on winterfat dominated ecological sites.

   - Develop grazing systems to control or rest grazing use on winterfat sites after March 1 or when the critical growing season begins. Allow spring grazing use during the critical growing period if a grazing rotation system that provides rest from grazing during the critical growing period at least every other year for all areas is in place. Utilization during the critical growth period should not exceed 35 percent under any circumstances.

   - Place salt and supplements at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

   - Locate sheep bedding grounds and camps at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- Locate water haul sites at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- Construct livestock reservoirs away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

- If water wells are approved to be drilled in winterfat dominated sites, strive to pipe the water at least 0.5 mile away from winterfat dominated sites. Base placement on site-specific assessment and characteristics such as riparian, topography, cultural, special status species, etc.

Mineral Extraction

1. Applications for permit to drill would follow the best management practices as outlined in the BLM oil and gas Gold Book (http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html), as well as on-shore regulations, individual surface use plans, and conditions of approval that may be part of the Record of Decision for EISs or Decision Records for environmental assessments/Findings of No Significant Impacts, Documentation of NEPA Adequacy, and Categorical Exclusions prepared for site-specific projects.

2. Do not permit blasting if it would be detrimental to the significant characteristics of archeological or historical values, recreation areas, known caves, water wells, or springs.

3. Notify the BLM authorized officer within 5 days of completion of reclamation work so that timely compliance inspections can be completed.

Watershed Management

1. Manage activities, uses, and authorizations on burned areas to best meet resource management objectives established for the area in specific stabilization, restoration, or activity plans. The BLM authorized officer may open areas to livestock grazing based upon those considerations.

Fire Management

1. Notify valid existing land users (such as mine claimants, holders of rights-of-way, and livestock permittees) prior to implementation of prescribed fires that may affect their investments.

2. Remove vegetation, where appropriate, to protect facilities (e.g., range improvements, communication sites, and recreation sites).

3. Within the area of operation, every effort will be made to prevent, control, or suppress any fire. Fire-fighting equipment may be required to be on site while operations are in progress, depending on hazards inherent in the type of operation and fire hazard levels. Report uncontrolled fires immediately to

the BLM Ely Field Office Manager or Authorized Officer. The BLM Fire Dispatch telephone number is (775) 289-1925 or 1-800-633-6092. After working hours, call 911 or the White Pine County Sheriff's Office at (775) 289-8801, the Lincoln County Sheriff's Office at (775) 962-5151, or the Nye County Sheriff's Office at (775) 482-8101.

Noxious and Invasive Weed Management

1. 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.

2. When maintaining unpaved roads on BLM-administered lands, avoid the unnecessary disturbance of adjacent native vegetation and the spread of weeds. Grade road shoulders or barrow ditches only when necessary to provide for adequate drainage. Minimize the width of grading operations. The BLM Authorized Officer will meet with equipment operators to ensure that they understand this objective.

Health and Safety

1. Consider nozzle type, nozzle size, boom pressure, and adjuvant use and take appropriate measures for each herbicide application project to reduce the chance of chemical drift.

2. All applications of approved pesticides will be conducted only by certified pesticide applicators or by personnel under the direct supervision of a certified applicator.

3. Prior to commencing any chemical control program, and on a daily basis for the duration of the project, the certified applicator will provide a suitable safety briefing to all personnel working with or in the vicinity of the herbicide application. This briefing will include safe handling, spill prevention, cleanup, and first aid procedures.

4. Store all pesticides in areas where access can be controlled to prevent unauthorized/untrained people from gaining access to the chemicals.

5. Do not apply pesticides within 440 yards (0.25 mile) of residences without prior notification of the resident.

6. Areas treated with pesticides will be adequately posted to notify the public of the activity and of safe re-entry dates, if a public notification requirement is specified on the label of the product applied. The public notice signs will be at least 8 1/2" x 11" in size and will contain the date of application and the date of safe re-entry.

7. The recreation permittee will post warning signs at all known mine shafts and other hazardous areas that occur within 100 feet of a race course or pit/spectator area and will verbally inform race participants of all hazards at the pre-race meeting.

8. The recreation permittee will assume liability for and clean up of any and all releases of hazardous substances or oil (more than one quart) disposed on public land as defined in the National Oil and Hazardous Substances Contingency Plan (Title 40 Code of Federal Regulations Subpart 300). The permittee will immediately notify the BLM Authorized Officer of any and all releases of hazardous substances or oil (more than one quart) on public land.

9. Properly dispose of all tailings, dumps, and deleterious materials or substances. Take measures to isolate, control, and properly dispose of toxic and hazardous materials.

10. Remove and properly dispose of all trash, garbage, debris, and foreign matter. Maintain the disposal site and leave it in a clean and safe condition. Do not allow burning at the site.

11. Do not drain oil or lubricants onto the ground surface. Immediately clean up any spills under 25 gallons; clean up spills over 25 gallons as soon as possible and report the incident to the BLM Authorized Officer and Nevada Division of Environmental Protection.

12. The operator will work with the BLM Authorized Officer on the containment of drilling fluids and drill hole cuttings. Adequately fence, post, or cover mud and separation pits, and hazardous material storage areas.

13. Locate powder magazines at least 0.25 mile from traveled roads. Attend loaded shot holes and charges at all times. Use explosives according to applicable federal and state regulations.

14. Containerize petroleum products such as gasoline, diesel fuel, helicopter fuel, and lubricants in approved containers. Properly store hazardous materials in separate containers to prevent mixing, drainage, or accidents.

APPENDIX A, SECTION 2
FLUID MINERALS LEASE NOTICES AND STIPULATIONS

APPENDIX A, SECTION 2
FLUID MINERALS LEASE NOTICES AND STIPULATIONS

LEASE NOTICES

Cultural Sites

Lands within this lease contain areas of known high potential for cultural resources. Properties known at the time of lease announcement that are listed on or eligible for the National Register of Historic Places will be avoided, where possible, by means of lease exclusions or by limits on surface use. The preferred avoidance option is to exclude areas containing National Register of Historic Places eligible sites from leasing and all forms of surface disturbance. Cultural sites not avoided may require consultation with State Historic Preservation Officer and treatment plans.

Historic Sites

Lands within this lease are in proximity to or contain portions of the Pony Express National Historic Trail, the Hastings Cutoff, the Lincoln Highway, or the Osceola Ditch. Oil and gas exploration and development activities within 1 mile of these sites must undergo a visual assessment in conjunction with environmental review to determine if the activity will adversely affect the visual integrity. Appropriate mitigation will take place as necessary to maintain the management corridor in as natural a condition as possible.

Desert Tortoise Habitat

Lands within this lease will require Section 7 consultation prior to any surface disturbance in desert tortoise habitat. The BLM must ensure that the impacts from the operation do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. The operator, U.S. Fish and Wildlife Service, and the BLM also must reach concurrence that the proposed actions are below the jeopardy or adverse modification threshold. If it is determined that through the review of the plan of operation and the use of mitigation measures that the operation is not below the jeopardy or adverse modification threshold, the project would not go forward.

LEASE TIMING STIPULATIONS

Resource: **Desert Tortoise Habitat**

Stipulation: Timing Limitation. No surface activity would be allowed within desert tortoise habitat from March 1 through October 31 without concurrence from the Forest Service.

Objective: To protect desert tortoise during the most active period to maintain desert tortoise populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with U.S. Fish and Wildlife Service, if the operator submits a plan that demonstrates that impacts from the proposed action would not adversely affect desert tortoise habitat.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with U.S. Fish and Wildlife Service, determines that portions of the area can be occupied without adversely affecting desert tortoise. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with U.S. Fish and Wildlife Service, determines that the entire leasehold is no longer occupied by desert tortoise.

Resource: **Sage Grouse Nesting Habitat Associated with Leks**

Stipulation: Timing Limitation. No surface activity would be allowed within two miles of a sage grouse lek from March 1 through May 15 (June 15).

Objective: To protect sage grouse nesting activities associated with leks to maintain sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting sage grouse nesting activity. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold no longer contains nesting habitat for sage grouse.

Resource: **Sage Grouse Winter Range**

Stipulation: Timing Limitation. No surface activity would be allowed within winter range for sage grouse from November 1 through March 31.

Objective: To protect sage grouse from disturbance during the crucial winter period to maintain sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area no longer contain sage grouse winter habitat. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold no longer contains winter range for sage grouse.

Resource: **Raptor Nest Sites**

Stipulation: Timing Limitation. No surface activity would be allowed from May 1 through July 15 within 0.5 mile of a raptor nest site which has been active within the past five years.

Objective: To protect raptor nesting activities to maintain existing populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting raptor nesting activity. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold no longer contains raptor nest sites.

Resource: **Big Game Calving/Fawning/Kidding/Lambing Grounds**

Stipulation: Timing Limitation. No surface activity would be allowed within big game calving/fawning/kidding/lambing grounds from April 15 through June 30.

Objective: To protect elk, mule deer, pronghorn antelope, and Rocky Mountain bighorn sheep from disturbance during calving, fawning, kidding, and lambing to maintain wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be

occupied without adversely affecting big game calving, fawning, kidding, and lambing. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold no longer contains big game calving/fawning/kidding/lambing grounds.

Resource: **Big Game Crucial Winter Range**

Stipulation: Timing Limitation. No surface activity would be allowed within big game crucial winter range from November 1 through March 31.

Objective: To protect elk, mule deer, and pronghorn antelope from disturbance during the crucial winter period to maintain wildlife populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area no longer contain winter habitat. The dates for the timing restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold no longer contains crucial winter range for big game.

Resource: **Desert Bighorn Sheep Habitat**

Stipulation: Timing Limitation. No surface activity would be allowed within occupied desert bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31.

Objective: To protect desert bighorn sheep from disturbance during lambing and the crucial hot summer months to maintain existing populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting desert bighorn sheep. The dates for the timing

restriction may be modified if new information indicates the dates are not valid for the leasehold.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the entire leasehold is no longer occupied by desert bighorn sheep.

LEASE – NO SURFACE OCCUPANCY STIPULATIONS

Resource: **Desert Tortoise ACEC**

Stipulation: No surface occupancy would be allowed within the Beaver Dam Slope ACEC or the Mormon Mesa ACEC.

Purpose: These areas encompass the habitat which has been determined to be critical to the survival of the desert tortoise population. The desert tortoise is a listed species under the Endangered Species Act.

Exception: The authorized officer may grant an exception (allow surface occupancy) upon completion of formal consultation with the U.S. Fish and Wildlife Service that yields a no-jeopardy opinion if a plan of development is submitted that does not significantly impact tortoise habitats or populations. The plan of development must demonstrate no significant impact will occur through mitigation of impacts, compensation (in accordance with BLM policy), and restoration of the land to pre-disturbance condition.

Modification: None

Waiver: None

Resource: **Sage Grouse Leks**

Stipulation: No surface occupancy. No surface use would be allowed within 0.25 mile of a sage grouse lek.

Objective: To protect sage grouse breeding activities and the integrity of the habitat associated with sage grouse leks to maintain sage grouse populations.

Exception: An exception to this stipulation may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the operator submits a plan that demonstrates that impacts from the proposed action would not affect breeding activity nor degrade the integrity of the habitat associated with the sage grouse lek.

Modification: The boundaries of the stipulated area may be modified if the authorized officer, in consultation with Nevada Department of Wildlife, determines that portions of the area can be occupied without adversely affecting the sage grouse lek.

Waiver: The stipulation may be waived if the authorized officer, in consultation with Nevada Department of Wildlife, determines that the lek has been inactive for at least five consecutive years or the habitat has changed such that there is no likelihood the lek would become active.

Resource: **Threatened and Endangered and Sensitive Species Sites**

Stipulation: No ground disturbance activities would be allowed within the boundaries of areas known to contain unusually high concentrations of threatened, endangered, or BLM or State sensitive species. No surface occupancy would be allowed within the:

Ash Springs ACEC
Baking Powder Flat ACEC
Condor Canyon ACEC
Highland Range ACEC
Lower Meadow Valley Wash ACEC
Schlesser Pincushion ACEC
Shoshone Ponds ACEC
Swamp Cedar ACEC
White River Valley ACEC

Purpose: To protect threatened and endangered and sensitive species.
Avoid BLM-approved activities that contribute to a need to list a species or its habitat as threatened or endangered.

Exception: None

Modification: None

Waiver: None

Resource: **Cultural Sites**

Stipulation: No ground disturbance activities would be allowed within the boundaries of cultural properties and archaeological/historic districts determined to be eligible or potentially eligible to the National Register of Historic Places. No surface occupancy would be allowed within the:

Baker Archaeological Site ACEC
Rock Animal Corral Archaeological Site

Honeymoon Hill/City of Rocks ACEC
Mount Irish ACEC
Pahroc Rock Art ACEC
Rose Guano Bat Cave ACEC
Shooting Gallery ACEC
Snake Creek Indian Burial Cave ACEC
Sunshine Locality National Register District
White River Archaeological District

Purpose: To protect significant cultural properties and archaeological districts and their settings.

Exception: None.

Modification: None.

Waiver: None.

Resource: **Paleontological Sites**

Stipulation: No ground disturbance activities would be allowed within the boundaries of areas of known paleontological sites/locales. No surface occupancy would be allowed within the:

Andies Mine Trilobite Site

Purpose: To preserve and protect significant vertebrate fossils and paleontological sites.

Exception: None

Modification: None

Waiver: None

Resource: **Natural, Scenic, and Recreation Sites**

Stipulation: No ground disturbance activities would be allowed within the boundaries of areas that exhibit exceptional natural, scenic, or recreational values. No Surface Occupancy would be allowed within the:

Blue Mass Scenic Area ACEC
Cleve Creek Recreation Site
Egan Crest Trailhead
Garnet Hill
Illipah Reservoir
Kirch Wildlife Management Area

Sacramento Pass Recreation Site
Ward Mountain Recreation Site
White Pine County Shooting Range

Purpose: To protect the public's opportunity for quality recreation experiences at those sites developed for those purposes.
To prevent user conflicts and incompatible uses in areas with high recreational values and significant amounts of recreational activity.
To control the visual impacts of activities and facilities within acceptable levels.

Exception: None

Modification: None

Waiver: A waiver may be granted for a site if it is moved or eliminated.

Resource: **BLM Facilities**

Stipulation: No surface occupancy would be allowed within the following withdrawal areas:

Caliente Field Station
Pony Springs Fire Station

Purpose: To protect the operation and maintenance of the BLM's facilities.

Exception: None

Modification: None

Waiver: None

APPENDIX A, SECTION 3
BLM WIND ENERGY DEVELOPMENT PROGRAM POLICIES AND BEST MANAGEMENT PRACTICES

BLM WIND ENERGY DEVELOPMENT PROGRAM
POLICIES AND BEST MANAGEMENT PRACTICES (BMPS)

The BLM's Wind Energy Development Program will establish a number of policies and BMPs, provided below, regarding the development of wind energy resources on BLM-administered public lands. The policies and BMPs will be applicable to all wind energy development projects on BLM-administered public lands. The policies address the administration of wind energy development activities, and the BMPs identify required mitigation measures that would need to be incorporated into project-specific Plans of Development (PODs) and right-of-way (ROW) authorization stipulations. Additional mitigation measures will be applied to individual projects, in the form of stipulations in the ROW authorization as appropriate, to address site-specific and species-specific issues.

These policies and BMPs were formulated through preparation of the Final Wind Energy PEIS (BLM 2005). The PEIS included detailed, comprehensive analysis of the potential impacts of wind energy development and relevant mitigation measures; reviews of existing, relevant mitigation guidance; and reviews of comments received during scoping and public review of the Draft PEIS.

A.1 Policies

- The BLM will not issue ROW authorizations for wind energy development on lands on which wind energy development is incompatible with specific resource values. Lands that will be excluded from wind energy site monitoring and testing and development include designated areas that are part of the National Landscape Conservation System (NLCS) (e.g., Wilderness Areas, Wilderness Study Areas, National Monuments, NCAs,[1] Wild and Scenic Rivers, and National Historic and Scenic Trails) and Areas of Critical Environmental Concern (ACECs).[2] Additional areas of land may be excluded from wind energy development on the basis of findings of resource impacts that cannot be mitigated and/or conflict with existing and planned multiple-use activities or land use plans.

- To the extent possible, wind energy projects shall be developed in a manner that will not prevent other land uses, including minerals extraction, livestock grazing, recreational use, and other ROW uses.

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[1] Wind energy development is permitted in one NCA, the California Desert Conservation Area (CDCA), in accordance with the provisions of the *California Desert Conservation Area Plan 1980, as Amended* (BLM 1999).

[2] Although the MPDS developed for this PEIS (Section 2.2.1 and Appendix B) did not exclude all of these lands at the screening level, they will be excluded from wind energy development.

- Entities seeking to develop a wind energy project on BLM-administered lands shall consult with appropriate federal, state, and local agencies regarding specific projects as early in the planning process as appropriate to ensure that all potential construction, operation, and decommissioning issues and concerns are identified and adequately addressed.

- The BLM will initiate government-to-government consultation with Indian Tribal governments whose interests might be directly and substantially affected by activities on BLM-administered lands as early in the planning process as appropriate to ensure that construction, operation, and decommissioning issues and concerns are identified and adequately addressed.

- Entities seeking to develop a wind energy project on BLM-administered lands, in conjunction with BLM Washington Office (WO) and Field Office (FO) staff, shall consult with the U.S. Department of Defense (DoD) regarding the location of wind power projects and turbine siting as early in the planning process as appropriate. This consultation shall occur concurrently at both the installation/field level and the Pentagon/BLM WO level. An interagency protocol agreement is being developed to establish a consultation process and to identify the scope of issues for consultation. Lands withdrawn for military purposes are under the administrative jurisdiction of the DoD or a military service and are not available for issuance of wind energy authorizations by the BLM.

- The BLM will consult with the U.S. Fish and Wildlife Service (USFWS) as required by Section 7 of the Endangered Species Act of 1973 (ESA). The specific consultation requirements will be determined on a project-by-project basis.

- The BLM will consult with the State Historic Preservation Office (SHPO) as required by Section 106 of the National Historic Preservation Act of 1966 (NHPA). The specific consultation requirements will be determined on a project-by-project basis. If programmatic Section 106 consultations have been conducted and are adequate to cover a proposed project, additional consultation may not be needed.

- Existing land use plans will be amended, as appropriate, to (1) adopt provisions of the BLM's Wind Energy Development Program, (2) identify land considered to be available for wind energy development, and (3) identify land that will not be available for wind energy development.

- The level of environmental analysis to be required under NEPA for individual wind power projects will be determined at the FO level. For many projects, it may be determined that a tiered environmental assessment (EA) is appropriate in lieu of an EIS. To the extent that the PEIS addresses anticipated issues and

concerns associated with an individual project, including potential cumulative impacts, the BLM will tier off of the decisions embedded in the PEIS and limit the scope of additional project-specific NEPA analyses. The site-specific NEPA analyses will include analyses of project site configuration and micrositing considerations, monitoring program requirements, and appropriate mitigation measures. In particular, the mitigation measures discussed in Chapter 5 of the PEIS may be consulted in determining site-specific requirements. Public involvement will be incorporated into all wind energy development projects to ensure that all concerns and issues are identified and adequately addressed. In general, the scope of the NEPA analyses will be limited to the proposed action on BLM-administered public lands; however, if access to proposed development on adjacent non-BLM-administered lands is entirely dependent on obtaining ROW access across BLM-administered public lands and there are no alternatives to that access, the NEPA analysis for the proposed ROW may need to assess the environmental effects from that proposed development. The BLM's analyses of ROW access projects may tier off of the PEIS to the extent that the proposed project falls within the scope of the PEIS analyses.

- Site-specific environmental analyses will tier from the PEIS and identify and assess any cumulative impacts that are beyond the scope of the cumulative impacts addressed in the PEIS.

- The Categorical Exclusion (CX) applicable to the issuance of short-term ROWs or land use authorizations may be applicable to some site monitoring and testing activities. The relevant CX, established for the BLM in the DOI Departmental Manual 516, Chapter 11, Sec. 11.5, E(19) (DOI 2004), encompasses "issuance of short-term (3 years or less) rights-of-way or land use authorizations for such uses as storage sites, apiary sites, and construction sites where the proposal includes rehabilitation to restore the land to its natural or original condition."

- The BLM will require financial bonds for all wind energy development projects on BLM-administered public lands to ensure compliance with the terms and conditions of the rights-of-way authorization and the requirements of applicable regulatory requirements, including reclamation costs. The amount of the required bond will be determined during the rights-of-way authorization process on the basis of site-specific and project-specific factors. The BLM may also require financial bonds for site monitoring and testing authorizations.

- Entities seeking to develop a wind energy project on BLM-administered public lands shall develop a project-specific Plan of Development (POD) that incorporates all BMPs and, as appropriate, the requirements of other existing and relevant BLM mitigation guidance, including the BLM's interim off-site mitigation guidance (BLM 2005a). Additional mitigation measures will be

incorporated into the POD and into the ROW authorization as project stipulations, as needed, to address site-specific and species-specific issues. The POD will include a site plan showing the locations of turbines, roads, power lines, other infrastructure, and other areas of short- and long-term disturbance.

- The BLM will incorporate management goals and objectives specific to habitat conservation for species of concern (e.g., sage-grouse), as appropriate, into the POD for proposed wind energy projects.

- The BLM will consider the visual resource values of the public lands involved in proposed wind energy development projects, consistent with BLM Visual Resource Management (VRM) policies and guidance. The BLM will work with the ROW applicant to incorporate visual design considerations into the planning and design of the project to minimize potential visual impacts of the proposal and to meet the VRM objectives of the area.

- Operators of wind power facilities on BLM-administered public lands shall consult with the BLM and other appropriate federal, state, and local agencies regarding any planned upgrades or changes to the wind facility design or operation. Proposed changes of this nature may require additional environmental analysis and/or revision of the POD.

- The BLM's Wind Energy Development Program will incorporate adaptive management strategies to ensure that potential adverse impacts of wind energy development are avoided (if possible), minimized, or mitigated to acceptable levels. The programmatic policies and BMPs will be updated and revised as new data regarding the impacts of wind power projects become available. At the project-level, operators will be required to develop monitoring programs to evaluate the environmental conditions at the site through all phases of development, to establish metrics against which monitoring observations can be measured, to identify potential mitigation measures, and to establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and project-specific stipulations.

A.2 Best Management Practices (BMPs)

The BMPs will be adopted as required elements of project-specific PODs and/or as ROW authorization stipulations. They are categorized by development activity: site monitoring and testing, development of the POD, construction, operation, and decommissioning. The BMPs for development of the POD identify required elements of the POD needed to address potential impacts associated with subsequent phases of development.

A.2.1 Site Monitoring and Testing

- The area disturbed by installation of meteorological towers (i.e., footprint) shall be kept to a minimum.

- Existing roads shall be used to the maximum extent feasible. If new roads are necessary, they shall be designed and constructed to the appropriate standard.

- Meteorological towers shall not be located in sensitive habitats or in areas where ecological resources known to be sensitive to human activities (e.g., prairie grouse) are present. Installation of towers shall be scheduled to avoid disruption of wildlife reproductive activities or other important behaviors.

- Meteorological towers installed for site monitoring and testing shall be inspected periodically for structural integrity.

A.2.2 Plan of Development Preparation

General

- The BLM and operators shall contact appropriate agencies, property owners, and other stakeholders early in the planning process to identify potentially sensitive land uses and issues, rules that govern wind energy development locally, and land use concerns specific to the region.

- Available information describing the environmental and sociocultural conditions in the vicinity of the proposed project shall be collected and reviewed as needed to predict potential impacts of the project.

- The Federal Aviation Administration (FAA)-required notice of proposed construction shall be made as early as possible to identify any air safety measures that would be required.

- To plan for efficient use of the land, necessary infrastructure requirements shall be consolidated wherever possible, and current transmission and market access shall be evaluated carefully.

- The project shall be planned to utilize existing roads and utility corridors to the maximum extent feasible, and to minimize the number and length/size of new roads, lay-down areas, and borrow areas.

- A monitoring program shall be developed to ensure that environmental conditions are monitored during the construction, operation, and

decommissioning phases. The monitoring program requirements, including adaptive management strategies, shall be established at the project level to ensure that potential adverse impacts of wind energy development are mitigated. The monitoring program shall identify the monitoring requirements for each environmental resource present at the site, establish metrics against which monitoring observations can be measured, identify potential mitigation measures, and establish protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and BMPs.

- "Good housekeeping" procedures shall be developed to ensure that during operation the site will be kept clean of debris, garbage, fugitive trash or waste, and graffiti; to prohibit scrap heaps and dumps; and to minimize storage yards.

Wildlife and Other Ecological Resources

- Operators shall review existing information on species and habitats in the vicinity of the project area to identify potential concerns.

- Operators shall conduct surveys for federal and/or state-protected species and other species of concern (including special status plant and animal species) within the project area and design the project to avoid (if possible), minimize, or mitigate impacts to these resources.

- Operators shall identify important, sensitive, or unique habitats in the vicinity of the project and design the project to avoid (if possible), minimize, or mitigate impacts to these habitats (e.g., locate the turbines, roads, and ancillary facilities in the least environmentally sensitive areas; i.e., away from riparian habitats, streams, wetlands, drainages, or critical wildlife habitats).

- The BLM will prohibit the disturbance of any population of federal listed plant species.

- Operators shall evaluate avian and bat use of the project area and design the project to minimize or mitigate the potential for bird and bat strikes (e.g., development shall not occur in riparian habitats and wetlands). Scientifically rigorous avian and bat use surveys shall be conducted; the amount and extent of ecological baseline data required shall be determined on a project basis.

- Turbines shall be configured to avoid landscape features known to attract raptors, if site studies show that placing turbines there would pose a significant risk to raptors.

- Operators shall determine the presence of bat colonies and avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies; in known migration corridors; or in known flight paths between colonies and feeding areas.

- Operators shall determine the presence of active raptor nests (i.e., raptor nests used during the breeding season). Measures to reduce raptor use at a project site (e.g., minimize road cuts, maintain either no vegetation or nonattractive plant species around the turbines) shall be considered.

- A habitat restoration plan shall be developed to avoid (if possible), minimize, or mitigate negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. The plan shall identify revegetation, soil stabilization, and erosion reduction measures that shall be implemented to ensure that all temporary use areas are restored. The plan shall require that restoration occur as soon as possible after completion of activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

- Procedures shall be developed to mitigate potential impacts to special status species. Such measures could include avoidance, relocation of project facilities or lay-down areas, and/or relocation of biota.

- Facilities shall be designed to discourage their use as perching or nesting substrates by birds. For example, power lines and poles shall be configured to minimize raptor electrocutions and discourage raptor and raven nesting and perching.

Visual Resources

- The public shall be involved and informed about the visual site design elements of the proposed wind energy facilities. Possible approaches include conducting public forums for disseminating information, offering organized tours of operating wind developments, and using computer simulation and visualization techniques in public presentations.

- Turbine arrays and turbine design shall be integrated with the surrounding landscape. Design elements to be addressed include visual uniformity, use of tubular towers, proportion and color of turbines, nonreflective paints, and prohibition of commercial messages on turbines.

- Other site design elements shall be integrated with the surrounding landscape. Elements to address include minimizing the profile of the ancillary structures, burial of cables, prohibition of commercial symbols, and lighting. Regarding

lighting, efforts shall be made to minimize the need for and amount of lighting on ancillary structures.

Roads

- An access road siting and management plan shall be prepared incorporating existing BLM standards regarding road design, construction, and maintenance such as those described in the BLM 9113 Manual (BLM 1985) and the *Surface Operating Standards for Oil and Gas Exploration and Development* (RMRCC 1989) (i.e., the Gold Book).

Ground Transportation

- A transportation plan shall be developed, particularly for the transport of turbine components, main assembly cranes, and other large pieces of equipment. The plan shall consider specific object sizes, weights, origin, destination, and unique handling requirements and shall evaluate alternative transportation approaches. In addition, the process to be used to comply with unique state requirements and to obtain all necessary permits shall be clearly identified.

- A traffic management plan shall be prepared for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan shall incorporate measures such as informational signs, flaggers when equipment may result in blocked throughways, and traffic cones to identify any necessary changes in temporary lane configuration.

Noise

- Proponents of a wind energy development project shall take measurements to assess the existing background noise levels at a given site and compare them with the anticipated noise levels associated with the proposed project.

Noxious Weeds and Pesticides

- Operators shall develop a plan for control of noxious weeds and invasive species, which could occur as a result of new surface disturbance activities at the site. The plan shall address monitoring, education of personnel on weed identification, the manner in which weeds spread, and methods for treating infestations. The use of certified weed-free mulching shall be required. If trucks and construction equipment are arriving from locations with known

invasive vegetation problems, a controlled inspection and cleaning area shall be established to visually inspect construction equipment arriving at the project area and to remove and collect seeds that may be adhering to tires and other equipment surfaces.

- If pesticides are used on the site, an integrated pest management plan shall be developed to ensure that applications would be conducted within the framework of BLM and DOI policies and entail only the use of EPA-registered pesticides. Pesticide use shall be limited to nonpersistent, immobile pesticides and shall only be applied in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

Cultural/Historic Resources

- The BLM will consult with Indian Tribal governments early in the planning process to identify issues regarding the proposed wind energy development, including issues related to the presence of cultural properties, access rights, disruption to traditional cultural practices, and impacts to visual resources important to the Tribe(s).

- The presence of archaeological sites and historic properties in the area of potential effect shall be determined on the basis of a records search of recorded sites and properties in the area and/or, depending on the extent and reliability of existing information, an archaeological survey. Archaeological sites and historic properties present in the area of potential effect shall be reviewed to determine whether they meet the criteria of eligibility for listing on the *National Register of Historic Places* (NRHP).

- When any rights-of-way application includes remnants of a National Historic Trail, is located within the viewshed of a National Historic Trail's designated centerline, or includes or is within the viewshed of a trail eligible for listing on the NRHP, the operator shall evaluate the potential visual impacts to the trail associated with the proposed project and identify appropriate mitigation measures for inclusion as stipulations in the POD.

- If cultural resources are present at the site, or if areas with a high potential to contain cultural material have been identified, a cultural resources management plan (CRMP) shall be developed. This plan shall address mitigation activities to be taken for cultural resources found at the site. Avoidance of the area is always the preferred mitigation option. Other mitigation options include archaeological survey and excavation (as warranted) and monitoring. If an area exhibits a high potential, but no artifacts were observed during an archaeological survey, monitoring by a qualified archaeologist could be required during all excavation and

earthmoving in the high-potential area. A report shall be prepared documenting these activities. The CRMP also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of artifacts and destruction of property on public land.

Paleontological Resources

- Operators shall determine whether paleontological resources exist in a project area on the basis of the sedimentary context of the area, a records search for past paleontological finds in the area, and/or, depending on the extent of existing information, a paleontological survey.

- If paleontological resources are present at the site, or if areas with a high potential to contain paleontological material have been identified, a paleontological resources management plan shall be developed. This plan shall include a mitigation plan for collection of the fossils; mitigation could include avoidance, removal of fossils, or monitoring. If an area exhibits a high potential but no fossils were observed during survey, monitoring by a qualified paleontologist could be required during all excavation and earthmoving in the sensitive area. A report shall be prepared documenting these activities. The paleontological resources management plan also shall (1) establish a monitoring program, (2) identify measures to prevent potential looting/vandalism or erosion impacts, and (3) address the education of workers and the public to make them aware of the consequences of unauthorized collection of fossils on public land.

Hazardous Materials and Waste Management

- Operators shall develop a hazardous materials management plan addressing storage, use, transportation, and disposal of each hazardous material anticipated to be used at the site. The plan shall identify all hazardous materials that would be used, stored, or transported at the site. It shall establish inspection procedures, storage requirements, storage quantity limits, inventory control, nonhazardous product substitutes, and disposition of excess materials. The plan shall also identify requirements for notices to federal and local emergency response authorities and include emergency response plans.

- Operators shall develop a waste management plan identifying the waste streams that are expected to be generated at the site and addressing hazardous waste determination procedures, waste storage locations, waste-specific management and disposal requirements, inspection procedures, and waste

minimization procedures. This plan shall address all solid and liquid wastes that may be generated at the site.

- Operators shall develop a spill prevention and response plan identifying where hazardous materials and wastes are stored on site, spill prevention measures to be implemented, training requirements, appropriate spill response actions for each material or waste, the locations of spill response kits on site, a procedure for ensuring that the spill response kits are adequately stocked at all times, and procedures for making timely notifications to authorities.

Storm Water

- Operators shall develop a storm water management plan for the site to ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion.

Human Health and Safety

- A safety assessment shall be conducted to describe potential safety issues and the means that would be taken to mitigate them, including issues such as site access, construction, safe work practices, security, heavy equipment transportation, traffic management, emergency procedures, and fire control.

- A health and safety program shall be developed to protect both workers and the general public during construction, operation, and decommissioning of a wind energy project. Regarding occupational health and safety, the program shall identify all applicable federal and state occupational safety standards; establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses; Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents; and measures for reducing occupational electric and magnetic fields [EMF] exposures); establish fire safety evacuation procedures; and define safety performance standards (e.g., electrical system standards and lightning protection standards). The program shall include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies shall be established.

- Regarding public health and safety, the health and safety program shall establish a safety zone or setback for wind turbine generators from residences and occupied buildings, roads, rights-of-ways, and other public access areas that is sufficient to prevent accidents resulting from the operation of wind turbine generators. It shall identify requirements for temporary fencing

around staging areas, storage yards, and excavations during construction or decommissioning activities. It shall also identify measures to be taken during the operation phase to limit public access to hazardous facilities (e.g., permanent fencing would be installed only around electrical substations, and turbine tower access doors would be locked).

- Operators shall consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) shall be identified and addressed in the traffic management plan.

- If operation of the wind turbines is expected to cause significant adverse impacts to nearby residences and occupied buildings from shadow flicker, low-frequency sound, or EMF, site-specific recommendations for addressing these concerns shall be incorporated into the project design (e.g., establishing a sufficient setback from turbines).

- The project shall be planned to minimize electromagnetic interference (EMI) (e.g., impacts to radar, microwave, television, and radio transmissions) and comply with Federal Communications Commission [FCC] regulations. Signal strength studies shall be conducted when proposed locations have the potential to impact transmissions. Potential interference with public safety communication systems (e.g., radio traffic related to emergency activities) shall be avoided.

- The project shall be planned to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.

- Operators shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire.

A.2.3 Construction

General

- All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the construction phase, as appropriate.

- The area disturbed by construction and operation of a wind energy development project (i.e., footprint) shall be kept to a minimum.

- The number and size/length of roads, temporary fences, lay-down areas, and borrow areas shall be minimized.

- Topsoil from all excavations and construction activities shall be salvaged and reapplied during reclamation.

- All areas of disturbed soil shall be reclaimed using weed-free native grasses, forbs, and shrubs. Reclamation activities shall be undertaken as early as possible on disturbed areas.

- All electrical collector lines shall be buried in a manner that minimizes additional surface disturbance (e.g., along roads or other paths of surface disturbance). Overhead lines may be used in cases where burial of lines would result in further habitat disturbance.

- Operators shall identify unstable slopes and local factors that can induce slope instability (such as groundwater conditions, precipitation, earthquake activities, slope angles, and the dip angles of geologic strata). Operators also shall avoid creating excessive slopes during excavation and blasting operations. Special construction techniques shall be used where applicable in areas of steep slopes, erodible soil, and stream channel crossings.

- Erosion controls that comply with county, state, and federal standards shall be applied. Practices such as jute netting, silt fences, and check dams shall be applied near disturbed areas.

Wildlife

- Guy wires on permanent meteorological towers shall be avoided, however, may be necessary on temporary meteorological towers installed during site monitoring and testing.

- In accordance with the habitat restoration plan, restoration shall be undertaken as soon as possible after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

- All construction employees shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, pets shall not be permitted on site during construction.

Visual Resources

- Operators shall reduce visual impacts during construction by minimizing areas of surface disturbance, controlling erosion, using dust suppression techniques, and restoring exposed soils as closely as possible to their original contour and vegetation.

Roads

- Existing roads shall be used, but only if in safe and environmentally sound locations. If new roads are necessary, they shall be designed and constructed to the appropriate standard and be no higher than necessary to accommodate their intended functions (e.g., traffic volume and weight of vehicles). Excessive grades on roads, road embankments, ditches, and drainages shall be avoided, especially in areas with erodible soils. Special construction techniques shall be used, where applicable. Abandoned roads and roads that are no longer needed shall be recontoured and revegetated.

- Access roads and on-site roads shall be surfaced with aggregate materials, wherever appropriate.

- Access roads shall be located to follow natural contours and minimize side hill cuts.

- Roads shall be located away from drainage bottoms and avoid wetlands, if practicable.

- Roads shall be designed so that changes to surface water runoff are avoided and erosion is not initiated.

- Access roads shall be located to minimize stream crossings. All structures crossing streams shall be located and constructed so that they do not decrease channel stability or increase water velocity. Operators shall obtain all applicable federal and state permits.

- Existing drainage systems shall not be altered, especially in sensitive areas such as erodible soils or steep slopes. Potential soil erosion shall be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly.

Ground Transportation

- Project personnel and contractors shall be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types,

and site-specific conditions, to ensure safe and efficient traffic flow and to reduce wildlife collisions and disturbance and airborne dust.

- Traffic shall be restricted to the roads developed for the project. Use of other unimproved roads shall be restricted to emergency situations.

- Signs shall be placed along construction roads to identify speed limits, travel restrictions, and other standard traffic control information. To minimize impacts on local commuters, consideration shall be given to limiting construction vehicles traveling on public roadways during the morning and late afternoon commute time.

Air Emissions

- Dust abatement techniques shall be used on unpaved, unvegetated surfaces to minimize airborne dust.

- Speed limits (e.g., 25 mph [40 km/h]) shall be posted and enforced to reduce airborne fugitive dust.

- Construction materials and stockpiled soils shall be covered if they are a source of fugitive dust.

- Dust abatement techniques shall be used before and during surface clearing, excavation, or blasting activities.

Excavation and Blasting Activities

- Operators shall gain a clear understanding of the local hydrogeology. Areas of groundwater discharge and recharge and their potential relationships with surface water bodies shall be identified.

- Operators shall avoid creating hydrologic conduits between two aquifers during foundation excavation and other activities.

- Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavation materials shall be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities.

- Borrow material shall be obtained only from authorized and permitted sites. Existing sites shall be used in preference to new sites.

- Explosives shall be used only within specified times and at specified distances from sensitive wildlife or streams and lakes, as established by the BLM or other federal and state agencies.

Noise

- Noisy construction activities (including blasting) shall be limited to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 10 p.m.) and weekdays.

- All equipment shall have sound-control devices no less effective than those provided on the original equipment. All construction equipment used shall be adequately muffled and maintained.

- All stationary construction equipment (i.e., compressors and generators) shall be located as far as practicable from nearby residences.

- If blasting or other noisy activities are required during the construction period, nearby residents shall be notified in advance.

Cultural and Paleontological Resources

- Unexpected discovery of cultural or paleontological resources during construction shall be brought to the attention of the responsible BLM authorized officer immediately. Work shall be halted in the vicinity of the find to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed.

Hazardous Materials and Waste Management

- Secondary containment shall be provided for all on-site hazardous materials and waste storage, including fuel. In particular, fuel storage (for construction vehicles and equipment) shall be a temporary activity occurring only for as long as is needed to support construction activities.

- Wastes shall be properly containerized and removed periodically for disposal at appropriate off-site permitted disposal facilities.

- In the event of an accidental release to the environment, the operator shall document the event, including a root cause analysis, appropriate corrective actions taken, and a characterization of the resulting environmental or health and safety impacts. Documentation of the event shall be provided to the BLM authorized officer and other federal and state agencies, as required.

- Any wastewater generated in association with temporary, portable sanitary facilities shall be periodically removed by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews shall be adequate to support expected on-site personnel and shall be removed at completion of construction activities.

Public Health and Safety

- Temporary fencing shall be installed around staging areas, storage yards, and excavations during construction to limit public access.

A.2.4 Operation

General

- All control and mitigation measures established for the project in the POD and the resource-specific management plans that are part of the POD shall be maintained and implemented throughout the operational phase, as appropriate. These control and mitigation measures shall be reviewed and revised, as needed, to address changing conditions or requirements at the site, throughout the operational phase. This adaptive management approach would help ensure that impacts from operations are kept to a minimum.

- Inoperative turbines shall be repaired, replaced, or removed in a timely manner. Requirements to do so shall be incorporated into the due diligence provisions of the rights-of-way authorization. Operators will be required to demonstrate due diligence in the repair, replacement, or removal of turbines; failure to do so could result in termination of the rights-of-way authorization.

Wildlife

- Employees, contractors, and site visitors shall be instructed to avoid harassment and disturbance of wildlife, especially during reproductive (e.g., courtship and nesting) seasons. In addition, any pets shall be controlled to avoid harassment and disturbance of wildlife.

- Observations of potential wildlife problems, including wildlife mortality, shall be reported to the BLM authorized officer immediately.

Ground Transportation

- Ongoing ground transportation planning shall be conducted to evaluate road use, minimize traffic volume, and ensure that roads are maintained adequately to minimize associated impacts.

Monitoring Program

- Site monitoring protocols defined in the POD shall be implemented. These will incorporate monitoring program observations and additional mitigation measures into standard operating procedures and BMPs to minimize future environmental impacts.

- Results of monitoring program efforts shall be provided to the BLM authorized officer.

Public Health and Safety

- Permanent fencing shall be installed and maintained around electrical substations, and turbine tower access doors shall be locked to limit public access.

- In the event an installed wind energy development project results in EMI, the operator shall work with the owner of the impacted communications system to resolve the problem. Additional warning information may also need to be conveyed to aircraft with onboard radar systems so that echoes from wind turbines can be quickly recognized.

A.2.5 Decommissioning

General

- Prior to the termination of the rights-of-way authorization, a decommissioning plan shall be developed and approved by the BLM. The decommissioning plan shall include a site reclamation plan and monitoring program.

- All management plans, BMPs, and stipulations developed for the construction phase shall be applied to similar activities during the decommissioning phase.

- All turbines and ancillary structures shall be removed from the site.

- Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation.

- All areas of disturbed soil shall be reclaimed using weed-free native shrubs, grasses, and forbs.

- The vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting.

APPENDIX B
LEGAL DESCRIPTIONS FOR POTENTIAL LAND DISPOSAL

APPENDIX B
LEGAL DESCRIPTIONS FOR POTENTIAL LAND DISPOSAL

POTENTIAL LAND DISPOSAL AREAS APPROVED RMP				
Township	**Range**	**Section**	**Legal Description**	**Acres**
LINCOLN COUNTY POTENTIAL LAND DISPOSAL AREAS				
FEDERAL LAND TRANSACTION FACILITATION ACT LANDS				
None because Lincoln County Conservation Recreation and Development Act supersedes Federal Land Transaction Facilitation Act				
3 S	55 E	26	All Public Lands south of Highway 375	798
		35	SW¼SW¼, N½SW¼, S½SE¼NW¼, NW¼SE¼NW¼, NW¼NE¼SE¼NW¼, SW¼NW¼, N½NW¼, N½NE¼	
		36	S½SE¼, NE¼SE¼, All Public Lands south of Highway 375 in SE¼NE¼	
4 S	55 E	1	LOTS 1-4, S½NW¼, S½NE¼	894
		2	LOT 4, S½NW¼, SE¼NE¼	
3 S	56 E	31	All Public Lands south of Highway 375	107
4 S	56 E	6	LOTS 1-5, SE¼NW¼, S½NE¼	316
6 S	57 E	25	NW¼NW¼	40
3 S	60 E	24	SE¼SW¼ All Public Lands east of Highway 318	330
		25	W½ All Public Lands east of Highway 318	
		35	E½ All Public Lands east of Highway 318	
4 S	60 E	1	SW¼SW¼	560
		2	All Public Lands east of Highway 318	
		11	All Public Lands east of Highway 318	
		14	N½NW¼NE¼, NE¼NE¼	
6 S	61 E	6	Lots 9 and 10	1,859
		7	NE¼, NE¼NW¼, SE¼	
		29	SE¼, N½SW¼, NW¼, NE¼	
		30	LOTS 3 and 4, E½SW¼	
		31	LOTS 1-4, S½SE¼, E½SW¼, E½NW¼	
		32	N½NE¼SE¼, SE¼NE¼, N½NE¼	
		33	SW¼, NW¼	
7 S	61 E	4	ALL	2,662
		5	NE¼SE¼	
		6	LOTS 1 and 2, N½SE¼, SW¼SE¼, S½NE¼	
		7	E½,	
		8	S½SW¼, NW¼SW¼, S½SW¼NW¼	
		9	ALL	
		16	NE¼SE¼, NE¼	
		17	SE¼, NW¼, SW¼NE¼	
3 S	66 E	23	ALL	3,811
		24	ALL	
		25	ALL	
		26	ALL	
		35	ALL	
		36	ALL	
4 S	66 E	1	LOTS 5-12, SW¼, N½SE¼	3,539
		2	ALL	
		11	ALL	
		12	N½NE¼, NW¼, SW¼, SE¼	
		13	NE¼, NW¼, SW¼, NW¼SE¼	
		14	ALL	

POTENTIAL LAND DISPOSAL AREAS APPROVED RMP				
Township	**Range**	**Section**	**Legal Description**	**Acres**
2 S	67 E	11	S½	4,160
		12	ALL	
		13	SE¼, NE¼SW¼, N½	
		14	S½NW¼ SW¼ W½SE¼	
		23	SE¼, SW¼, NW¼, W½NE¼, NE¼NE¼	
		24	S½SW¼, NW¼SW¼	
		25	NW¼NW¼	
		26	NW¼SE¼, SW¼, NW¼, NE¼	
		35	W½SW¼, NW¼, NW¼NE¼	
		36	SE, E½SW¼, SW¼SW¼, E½NW¼, S½NE¼, NW¼NE¼	
3 S	67 E	1	ALL	11,995
		4	ALL	
		9	ALL	
		12	ALL	
		13	ALL	
		16	ALL	
		19	ALL	
		20	ALL	
		21	W½NE¼, NW¼, SW¼, N½SW¼SE¼, NW¼SE¼	
		23	ALL	
		24	ALL	
		28	W½NW¼, S½SW¼, SE¼	
		29	NE¼, NW¼, SW¼, N½SE¼	
		30	ALL	
		31	ALL	
		32	E½NE¼, NW¼, N½SW¼, SW¼SW¼, E½SE¼	
		33	ALL	
		34	ALL	
		35	ALL	
		36	ALL	
4 S	67 E	1	ALL	7,253
		2	ALL	
		3	ALL	
		4	ALL	
		5	LOTS 1, 4, SE¼NE¼, SW¼NW¼, SW¼SW¼, NE¼SE¼, S½SE¼	
		6	ALL	
		7	LOTS 1, 2, 5, 6, NE¼NW¼	
		8	S½SE¼	
		9	N½NE¼, N½NW¼, SW¼, W½NE¼SE¼, SW¼SE¼NE¼SE¼, NW¼SE¼, S½SE¼	
		10	N½NE, E½NW¼, NW¼NW¼, SW¼SW¼SW¼NW¼	
		13	ALL	
		14	ALL	
		15	ALL	
		16	ALL	
		17	NE¼	

POTENTIAL LAND DISPOSAL AREAS APPROVED RMP				
Township	**Range**	**Section**	**Legal Description**	**Acres**
2S	68E	4	E½SE¼	1,716
		6	LOTS 6 and 7, E½SE¼SE¼SW¼, W½SW¼SE¼SW¼, NE¼SW¼, W½SE¼	
		7	W½N¼	
		9	S½SE¼, NE¼SE¼, SE¼SW¼, E½SE¼NE¼, E½NW¼NE¼, NE¼NE¼	
		10	All Public Lands south of Highway 25	
		16	E½SW¼	
		19	SE¼SE¼	
		20	SE¼NE,	
		21	SE¼, SW¼, S½NW¼, NE¼	
4 S	68 E	6	ALL	1,272
		18	ALL	
11 S	69 E	36	ALL	640
3 S	70 E	25	SE¼, E½SW¼, NW¼, NE¼	2,440
		26	N½NE¼	
		35	S½	
		36	NW¼SW¼, S½SW¼, NE¼NW¼, NE¼	
4 S	70 E	1	LOTS 3 and 4, S½NW¼	480
		2	LOTS 1-4, S½ NW¼, S½NE¼	
3 S	71 E	30	S½	880
		31	SE¼SE¼, N½SE¼, SW¼SW¼, N½SW¼, NW¼, NE¼	
2 N	66 E	24	ALL	1,280
		25	ALL	
1 N	67 E	4	ALL	6,326
		5	ALL	
		6	ALL	
		8	All Public Lands within	
		9	ALL	
		10	W½SW¼, NE¼SW¼, N½	
		11	W½	
		12	N½NW¼SE¼, N½NE¼SE¼, N½SW¼NE¼SW¼, NW¼NE¼SW¼, NE¼NE¼SW¼, W½SW¼, W½NW¼	
		13	S½, S½SW¼NW¼, S½SE¼NW¼, N½N½SE¼NE¼, N½N½SW¼NE¼, S½SW¼NE¼	
		15	N½NW¼	
		16	All Public Lands within	
		17	All Public Lands within	
		20	All Public Lands within NE¼	
		21	All Public Lands within	
		22	SE¼NW¼, SW¼NW¼, NW¼NW¼, SW¼NE¼NW¼, E½NE¼NW¼, All Public Lands within NW¼SW¼	
		23	All Public Lands within	
		26	All Public Lands within N½	
2 N	67 E	19	LOTS 1-4, E½SW¼, E½NW¼, NE¼	2,846
		29	SE¼, SE¼SW¼, N½SW¼, NW¼, NE¼	
		30	LOTS 3, 4, 6, 7, SE¼SE¼SE¼SW¼, W½SE¼SE¼SW¼, W½SE¼SW¼, SW¼NE¼SE¼SW¼, W½SW¼NE¼SW¼	
		31	ALL	
		32	NE¼, NE¼NW¼, S½NW¼, SW¼, S¼	
		33	ALL	
4 N	67 E	3	LOTS 12-19, S½NW¼, S½NE¼	409
5 N	67 E	34	SW¼SE¼, N½SW¼, NW¼, W½NE¼, NE¼NE¼	400
4 N	69 E	3	LOTS 7,8,9,12	26
		10	LOTS 2,4	
			Lincoln County Total	**57,039**

POTENTIAL LAND DISPOSAL AREAS APPROVED RMP				
Township	**Range**	**Section**	**Legal Description**	**Acres**
WHITE PINE COUNTY POTENTIAL LAND DISPOSAL AREAS				
FEDERAL LAND TRANSACTION FACILITATION ACT LANDS				
None because White Pine County Conservation Recreation and Development Act supersedes Federal Land Transaction Facilitation Act				
17 N	55 E	6	LOTS 12, 13	10
23 N	55 E	13	SE¼SW¼, S½SE¼	120
13 N	61 E	9	E½E½SW¼NE¼SW¼	3
17 N	61 E	23	SE¼SE¼, NE¼SE¼, SE¼NE¼	480
		24	SW¼, SW¼NW¼, SE¼NW¼, SW¼NE¼	
11 N	62 E	3	LOT 6	43
12 N	62 E	27	W½W½	380
		34	N½NW¼NW¼, SW¼NW¼, SW¼	
15 N	63 E	12	W½SE¼SW¼, SW¼SW¼, NW¼SW¼, W½NE¼SW¼, W½SE¼NW¼, SW¼NW¼, NW¼NW¼, W½NE¼NW¼	400
		13	N½NE¼, N½NW¼	
16 N	63 E	1	LOTS 1-12, S½SE¼, S½NE¼	2,391
		12	SE¼, NE¼	
		13	SE¼SE¼, NE¼SE¼, NW¼SW¼, SW¼NW¼	
		16	LOTS 1-5	
		23	E½SW¼, SE¼	
		24	W½SW¼, W½NW¼	
		25	W½NW¼, NW¼SW¼	
		26	NE¼, NW¼, N½SE¼, Public Lands in SW¼	
		27	E½SE¼NE¼, Public Lands in E½SE¼	
		34	W½NE¼, W½E½NE¼, SE¼	
		35	Public Lands in N½	
		36	SW¼, SE¼NW¼	
17 N	63 E	15	SE¼SE¼SE¼	1,344
		22	E½SE, W½SW, E½NE	
		23	ALL	
		24	ALL	
		25	W½NW¼SE¼SW¼SE¼, SW¼SW¼SE¼, NW¼SW¼SE¼, SW¼NE¼SW¼SE¼, N½NE¼SW¼SE¼, N½SE¼NW¼SE¼, SW¼NW¼SE¼, NW¼NW¼SE¼, NE¼NW¼SE¼, NW¼SW¼NE¼SE¼, SW¼NW¼NE¼SE¼, SE¼SE¼NE¼, SW¼SE¼NE¼, NW¼SE¼NE¼, SW¼NE¼SE¼NE¼, N½SE¼NE¼, NE¼NE¼	
		26	NW¼, NE¼	
		27	SW¼, NW¼, NE¼	
		34	LOTS 1-4, E½E½SW¼NW¼, N½NW¼NW¼NW¼, E½NW¼NW¼, SE¼NW¼, NE¼NW¼	
24 N	63 E	12	S½SE¼	2,040
		13	SE¼, SW¼, E½NW¼, NE¼	
		23	E½E½	
		24	W½SE¼, SW¼, NW¼, W½NE¼	
		25	SW¼, NW¼	
		26	SE¼, NE¼	
		35	N½NE¼	
		36	NW¼NW¼	
15 N	64 E	18	LOT 1, NE¼NW¼ (Public Lands Within)	64
16 N	64 E	6	LOTS 3-7, SE¼SW¼, NE¼SW¼, SE¼NW4	634
		7	LOTS 1-4, E½NW¼, E½SW¼	

POTENTIAL LAND DISPOSAL AREAS APPROVED RMP				
Township	**Range**	**Section**	**Legal Description**	**Acres**
17 N	64 E	5	SE¼	935
		7	E½SW¼, SE¼	
		8	Lots 1-8, NW¼SW¼, SE¼SW¼	
18 N	64 E	10	ALL	320
		15	NW, N½SW¼, SE¼SW¼	
		22	NE¼NW¼	
21 N	64 E	19	LOTS 3 and 4, SE¼SW¼, S½SE¼	279
		20	S½SW¼	
12 N	67 E	12	Lands south of SR 744 in N¼, NW¼, N½SE¼, and S½SE¼	160
13 N	70 E	1	LOTS 1, 2, SW¼, SE¼, S½NW¼, S½NE¼	560
		2	SE¼SE¼, NE¼SE¼, SE¼ NE¼	
		21	N½NE¼	
14 N	70 E	25	ALL	3,200
		26	ALL	
		27	ALL	
		28	ALL	
		36	ALL	
13 N	71 E	6	ALL	303
14 N	71 E	30	LOTS 1-3, 5-7, W½SE¼SW¼, W½SW¼, W½NW¼, W½NE¼NW¼	553
		31	ALL	
			White Pine County Energy Projects	4,500
			White Pine County Total	**18,543**
			Total	**75,582**

APPENDIX C
LEGAL DESCRIPTIONS AND MAPS OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Table C-1
Legal Descriptions for Designated ACECs

Township	Range	Section	
Baker Archeological Site			
14 N	70 E	33	LOTS 7 & 8
Beaver Dam Slope			
11S	70E	1	N½ (WITHIN), S½
		2	N½ (WITHIN), S½
		3	N½ (WITHIN), S½
		4	N½ (WITHIN), S½
		5	NE (WITHIN), E½NW¼ (WITHIN), SE¼ (WITHIN), SE¼
		7	E½NE¼ (WITHIN), SE¼ (WITHIN)
		8	NE¼, NE¼NW¼, NW¼NW¼ (WITHIN), S½
		9	ALL
		10	ALL
		11	ALL
		12	ALL
		13	ALL
		14	ALL
		15	ALL
		16	ALL
		17	N½, W½SW¼, SE¼
		20	NE¼, NW¼ (WITHIN), E½SW¼, SE¼
		21	ALL
		22	ALL
		23	ALL
		24	ALL
		25	ALL
		26	ALL
		27	ALL
		28	N½, SW¼SW¼ (WITHIN), NW¼SW¼, E½SW¼, SE¼
		33	NE¼, NW¼ (WITHIN), NE¼SW¼ (WITHIN), SE¼ (WITHIN)
		34	ALL
		35	ALL
		36	ALL
12S	70E	1	ALL
		2	ALL
		3	NW¼ (WITHIN), SW¼ (WITHIN), E½
		10	E½NW¼ (WITHIN), NE¼ (WITHIN), SE¼ (WITHIN)
		11	ALL
		12	ALL
		14	NE¼, NW¼ (WITHIN), E½ SW¼ (WITHIN), SE¼
		15	NE¼NE¼NE¼ (WITHIN)
		23	E½ (WITHIN)
11S	71E	3	S½S½ (WITHIN)
		4	S½SW¼ (WITHIN), S½S½SE¼
		5	S½ (WITHIN)
		6	S½SW¼NE¼, S½NW¼, SW¼, W½SE¼, E½SE¼ (WITHIN)
		7	ALL
		8	ALL
		9	ALL
		10	ALL
		15	ALL
		16	ALL
		17	ALL
		18	ALL
		19	ALL
		20	ALL
		21	ALL
		22	ALL
		27	ALL
		28	ALL

Table C-1 (Continued)

Township	Range	Section	
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL
12S	71E	3	ALL
		4	ALL
		5	ALL
		6	ALL
		7	ALL
		8	ALL
		9	ALL
		10	ALL
Baking Powder Flat			
11N	66E	25	ALL
		36	ALL
10N	67E	2	W½
		3	ALL
		4	NE¼, NW¼, SE¼
		5	N½
		9	NE¼
		10	N½
11N	67E	13	S½SW¼
		14	S½
		15	S½
		16	SE¼
		21	E½
		22	ALL
		23	ALL
		24	W½
		25	W½
		26	ALL
		27	ALL
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL
		35	ALL
		36	W½
Blue Mass Scenic Area			
21N	68E	1	LOTS 1 & 2, SW¼NE¼, SE¼NE¼
21N	69E	6	NW¼
22N	68E	36	E½
22N	69E	31	LOTS 2-4, E½SW¼, SE¼NW¼, W½NE¼
Condor Canyon			
1S	68E	13	LOTS 1-7, SW¼NW¼
		14	LOTS 1-8, S½NW¼, S½NE¼
		15	SE¼, SW¼, S½NW¼, S½NE¼
		22	ALL
		23	ALL
		24	LOTS 1-15
		25	LOTS 1-12
		26	N½SE¼, N½SW¼, N½
		27	NE¼SE¼, N½NW¼, NE¼

Table C-1 (Continued)

Township	Range	Section	
Highland Range			
1N	66E	26	ALL
		27	ALL
		28	ALL
		33	ALL
		34	ALL
		35	ALL
1S	66E	1	W½
		2	ALL
		3	ALL
		10	ALL
		11	ALL
		12	W½
Honeymoon Hill/City of Rocks			
15N	61E	19	ALL
		20	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
Kane Springs			
9S	62E	23	E½E½SW¼ (WITHIN), SE¼
		24	S½
		25	All
		26	E½ (WITHIN)
		35	E½ (WITHIN)
		36	ALL
10S	62E	1	Lots 1-4, S½NE¼, S½NW¼, E½SW¼, W½SW¼ (WITHIN),SE¼
		12	W½ (WITHIN), E½
		13	NE¼, E½NW¼ (WITHIN), NE¼SW¼ (WITHIN), SE¼
		24	NE¼, E½SE¼, W½SE¼ (WITHIN)
		25	E½NE¼, E½SE¼
		36	E½NE¼, W½NE¼ (WITHIN), E½SE¼ (WITHIN), W½SE¼ (WITHIN)
11S	62E	1	Lot 1, SE¼NE¼ (WITHIN), E½SE¼ (WITHIN)
		12	E½NE¼ (WITHIN), E½SE¼ (WITHIN)
		13	E½E½NE¼ (WITHIN), E½E½NE¼SE¼
9S	63E	19	S½
		30	ALL
		31	ALL
10S	63E	6	ALL
		7	ALL
		13	ALL
		14	ALL
		15	ALL
		18	ALL
		19	ALL
		20	ALL
		22	ALL
		23	ALL
		24	ALL
		25	ALL
		26	ALL
		27	ALL
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL

Table C-1 (Continued)

Township	Range	Section	
		35	ALL
		36	ALL
11S	63E	1	ALL
		2	ALL
		3	ALL
		4	ALL
		5	ALL
		6	ALL
		7	ALL
		8	ALL
		9	ALL
		10	ALL
		11	ALL
		12	ALL
		13	N½
		14	ALL
		15	ALL
		16	ALL
		17	ALL
		18	ALL
		36	E½
12N	63E	1	LOTS 1, 2, S½NE¼, SE¼
		12	NE¼, E½NW¼, E½SW¼, SE¼
		13	E½
		24	E½
10S	64E	7	ALL
		8	ALL
		9	S½NW¼ (WITHIN), SE¼(WITHIN)
		13	SW¼NW¼NW¼ (WITHIN), SW¼NW¼ (WITHIN), SW¼ (WITHIN), W½SE¼ (WITHIN)
		14	NE¼ (WITHIN), NW¼ (WITHIN), S½
		15	SW¼SW¼NE¼ (WITHIN), NW¼ (WITHIN), SW¼, SE¼ (WITHIN)
		16	ALL
		17	ALL
		18	ALL
		19	ALL
		20	ALL
		21	ALL
		22	ALL
		23	ALL
		24	ALL
		26	ALL
		27	ALL
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL
11S	64E	4	ALL
		5	ALL
		6	ALL
		7	ALL
		8	ALL
		9	ALL
		17	ALL
		18	ALL
		19	ALL
		20	ALL

Table C-1 (Continued)

Township	Range	Section	
		30	ALL
		31	ALL
Lower Meadow Valley Wash			
11S	65E	25	SE¼, SE¼SW¼, NE¼ (WITHIN)
		36	WITHIN
11½S	65E	36	WITHIN
12S	65E	1	LOTS 3 & 4, LOT 2 (WITHIN), W½SE (WITHIN), W½SW¼, S½NW¼, W½SW¼NE¼
		11	E½SE¼
		12	SE¼SW¼ (WITHIN), N½SW¼, NW¼, W½SW¼NE¼, W½NW¼NE¼
		13	W½SW¼, SE¼NW¼ (WITHIN ALL)
		23	E½SE¼, E½NE¼
		24	S½SW¼ (WITHIN), SW¼NW¼
4S	66E	25	SW¼SE, E½SE¼, W½NW¼, E½NE¼
		26	W½SE¼
		34	SE¼
		35	SW¼, NW¼, NW¼NE¼
5S	66E	2	LOTS 3 & 4, NE¼SW¼, SE¼NW¼
		3	LOTS 1 & 2, SE¼SE¼, E½SW¼, SW¼NE¼
		10	SE¼, E½SW¼, E½NW¼, SW¼NE¼, E½NE¼
		15	SE¼, E½SW¼, E½NW¼, NE¼
		22	E½SW¼, E½NW¼, NE¼,N½SE¼, SE¼SE¼, W½NW¼SW¼SE¼, SW¼SW¼SE¼, E½SW¼SE¼, SE¼NW¼SW¼SE¼
		26	SW¼, W½NW¼
		27	E½SE, E½NW, NE¼
		34	E½SE¼, E½NE¼
		35	E½NW¼,E½SW¼
6S	66E	2	LOTS 3-5, W½SE¼, S½SW¼, NW¼SW¼, S½NW¼
		3	LOT 1, SE¼NE¼
		11	SE¼, E½SW¼, NW¼, W½NE¼
		13	W½SW¼, W½NW¼
		14	SE¼, NE¼
		23	SE¼, NE¼
		24	W½SW¼, W½NW¼
		25	SW¼, NW¼
		26	E½SE, E½NE¼
		35	NE¼NE¼
		36	SE¼, E½SW¼, NW¼, W½NE¼
7S	66E	1	LOTS 1-3, SE¼, E½SW¼, SE¼NW¼, NE¼
		12	NE¼
10S	66E	24	SW¼, E½NW¼, NE¼ (WITHIN ALL)
		25	NW¼ (WITHIN)
		26	N½SE¼, SW¼, E½NE¼ (WITHIN ALL)
		27	S½SE¼
		34	W½SE¼, S½SW¼, SW¼NE¼, N½NE¼, E½NW¼ (WITHIN ALL)
10½S	66 E	33	SE¼ (WITHIN), E½SW¼, E½NE¼ (WITHIN)
11S	66E	4	SW¼, E½NW¼ (WITHIN ALL)
		5	SE¼ (WITHIN)
		8	SW¼, NE¼, NW¼SE¼ (WITHIN)
		17	SW¼, NW¼ (WITHIN)
		18	SE¼ (WITHIN)
		19	WITHIN
		30	W½ (WITHIN)
		31	NW¼NW¼ (WITHIN)
4S	67E	10	SW¼SE¼, S½SE¼SW¼, SW¼SW¼, S½SE¼NW¼SW¼, S½NE¼
		11	NW¼SE¼, NW¼SW¼, SE¼NW¼
		12	N½SE¼, N½SW¼, SE¼NW¼, N½NW¼, NE¼

Table C-1 (Continued)

Township	Range	Section	
7S	67E	7	LOTS 1 & 2, S½SE¼
		17	SW¼SW¼SE¼, SW¼, NW¼ (WITHIN ALL)
		18	LOT 1, N½SE¼, NE¼, NE¼NW¼
		20	NW¼SE¼, N½NW¼
		21	SW¼SW¼
		27	SW¼, S½S½NW¼ (WITHIN), S½S½SW¼NE¼ (WITHIN), SE¼ (WITHIN)
		28	SE¼SE¼, NW¼SE¼, N½NW¼, W½NE¼
		34	SW¼SE¼, N½SE¼, NE¼
		35	SE¼SW¼ (WITHIN), SE¼NW¼, NW¼NW¼ (WITHIN)
8S	67E	2	LOT 4, W½SW¼, SW¼NW¼
		3	LOTS 1 & 2, SE¼, S½NE¼
		10	E½SE, E½NE¼
		11	W½ (WITHIN)
		14	SW¼, NW¼ (WITHIN)
		15	E½SE¼, E½NE¼
		22	E½SE¼, E½NE¼
		23	SW¼, NW¼
		26	W½SW¼, NW¼
		27	W½SW¼, W½SE
		34	E½NW¼, E½SW¼, NE¼, SE¼
		35	W½SW¼, W½NW¼
9S	67E	2	LOTS 3 & 4, SW¼, S½NW¼
		3	LOT 1, E½SE¼, SE¼NE¼
		10	E½SE¼, E½NE¼
		14	NW¼SW¼
		15	E½SE¼, E½NE¼
		22	W½NE¼, E½SW¼, S½SE¼
		23	E½NW¼, SW¼
		26	W½NW¼
		27	W½SW¼
		34	W½SE¼, SW¼, NW¼, E½NE¼
10S	67E	3	LOTS 3 & 4, W½SW¼, S½NW¼
		4	LOT 1 SE¼, SE¼NE¼
		8	S½SE¼
		9	W½SW¼NE¼, N½NE¼, NE¼NW¼, W½SW¼ (WITHIN), W½W½SE¼ (WITHIN)
		17	NW¼SW¼SW¼ (WITHIN), NE¼SW¼ (WITHIN), S½NW¼ (WITHIN), NE¼ (WITHIN)
		18	LOT 4, NW¼SE¼, SE¼SW¼
		19	NE¼, NW¼ (WITHIN ALL)
4S	68E	7	LOTS 2 & 3, SE¼, NE¼SW¼, S½NE¼
		8	W½SE¼, SW¼
		16	SW¼
		17	SE¼, E½NW¼, NE¼
		21	SE¼, E½SW¼, NW¼, W½NE¼
		27	SW¼, W½NW¼
		28	E½
		34	SE¼, E½SW¼, NW¼, W½NE¼
5S	68E	2	SE¼, SW¼, NW¼
		11	N½SE¼, N½SW¼, NW¼, NE¼
		12	N½SE¼, N½SW¼, NW¼NE¼
5S	69E	7	LOTS 1-3, NE¼, SE¼, E½NW¼, NE¼SW¼
		8	SW¼, S½NW¼
Mormon Mesa			
12S	64E	6	ALL
		7	ALL
		25	ALL
		26	ALL
		27	ALL
		28	ALL

Table C-1 (Continued)

Township	Range	Section	
		29	ALL
		30	ALL
		31	NE¼, NW¼, E½SW¼, SE¼
		32	ALL
		33	ALL
		34	ALL
		35	ALL
		36	ALL
11S	65E	36	SE¼SE¼SE¼ (WITHIN)
11½S	65E	36	E½E½ (WITHIN)
12S	65E	1	LOT 1, LOT 2 (WITHIN), S½NE¼ (WITHIN), E½SE¼, W½SE¼ (WITHIN)
		12	E½NE¼, W½NE¼ (WITHIN), SE¼SW¼ (WITHIN), E½SE¼, W½SE¼ (WITHIN)
		13	NE¼, SE¼NW¼ (WITHIN), W½SW¼ (WITHIN), E½SW¼, SE¼
		24	NE¼, SW¼ (WITHIN), SE¼
		25	NE¼, SE¼NW¼, E½SW¼, SE¼
		26	NE¼, NW¼, SW¼, W½SE¼, NE¼SE¼
		27	ALL
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL
		35	ALL
		36	NE¼ E½NW¼, NE¼SW¼, S½SW¼, W½SE¼, NE¼SE¼
11S	66E	8	E½ (WITHIN), E½SW¼ (WITHIN)
		9	ALL
		10	ALL
		11	ALL
		14	ALL
		15	ALL
		16	ALL
		17	E½, E½NW¼, SW¼ (WITHIN), SE¼
		19	E½ (WITHIN)
		20	ALL
		21	ALL
		22	ALL
		23	ALL
		26	ALL
		27	ALL
		28	ALL
		29	ALL
		30	E½, W½ (WITHIN)
		31	E½, E½NW¼, W½NW¼ (WITHIN), S½
		32	ALL
		33	ALL
		34	ALL
		35	ALL
		36	ALL
12S	66E	1-36	ALL
12S	67E	6	ALL
		7	ALL
		8	ALL
		16	ALL
		17	ALL
		18	ALL
		19	ALL
		20	ALL

Table C-1 (Continued)

Township	Range	Section	
		21	ALL
		22	ALL
		27	ALL
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
12S	68E	23	ALL
		24	ALL
		25	ALL
		26	ALL
		27	ALL
		28	ALL
		29	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL
		35	ALL
		36	ALL
12S	69E	1	ALL
		2	ALL
		3	ALL
		4	NE¼ (WITHIN), S½
		5	S½
		8	ALL
		9	ALL
		10	ALL
		11	ALL
		12	ALL
		13	ALL
		14	ALL
		15	ALL
		16	ALL
		17	ALL
		19	ALL
		20	ALL
		21	ALL
		22	ALL
		23	ALL
		24	ALL
		25	ALL
		26	ALL
		27	ALL
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
		34	ALL
		35	ALL
		36	ALL

Table C-1 (Continued)

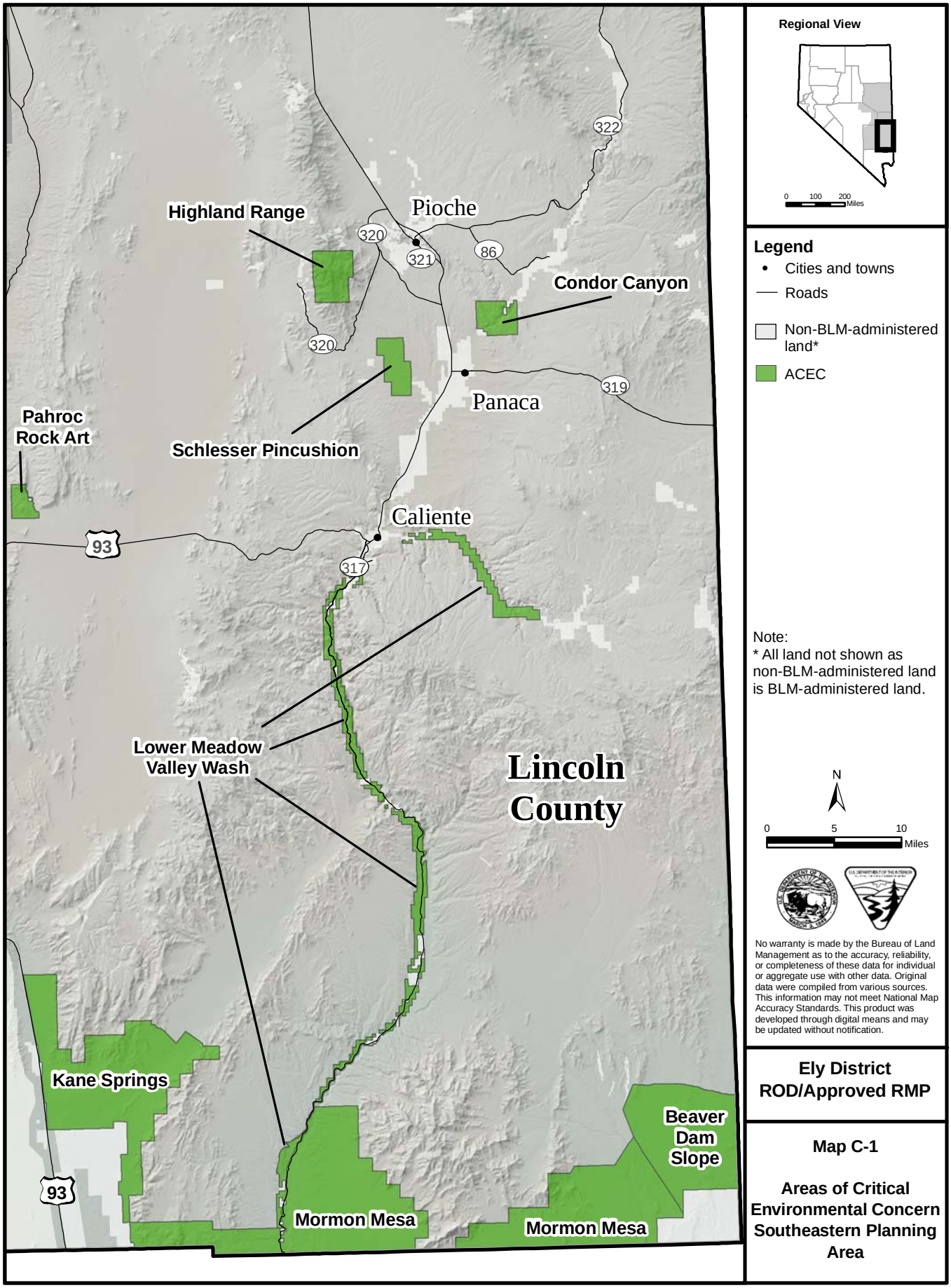
Township	Range	Section	
11S	70E	28	SW¼SW¼ (WITHIN)
		29	(WITHIN)
		30	NE¼SE¼ (WITHIN), E½SW¼SE¼ (WITHIN), SE¼SE¼ (WITHIN)
		31	NE¼NE¼, W½NE¼ (WITHIN), SE¼NE¼, SW¼ (WITHIN), SE¼
		32	ALL
		33	NW¼ (WITHIN), SW¼ (WITHIN), W½SE¼ (WITHIN)
12S	70E	3	SW¼ (WITHIN)
		4	NE¼ (WITHIN), NW¼, S½
		5	ALL
		6	ALL
		7	ALL
		8	ALL
		9	ALL
		10	SW¼NE¼ (WITHIN), NW¼ (WITHIN), SW¼, SE¼ (WITHIN)
		15	NE¼NE¼ (WITHIN), NW¼NE¼, S½NE¼, NW¼, S½
		16	ALL
		17	ALL
		18	ALL
		19	ALL
		20	ALL
		21	ALL
		22	ALL
		23	NE¼ (WITHIN), NW¼, SW¼, SE¼ (WITHIN)
		28	ALL
		29	ALL
		30	ALL
		31	ALL
		32	ALL
		33	ALL
Mount Irish			
3S	58E	36	ALL
4S	58E	1	ALL
		2	ALL
		11	ALL
		12	NE¼, NW¼, SW¼ (WITHIN), SE¼ (WITHIN)
3S	59E	19	ALL
		20	ALL
		21	ALL
		28	ALL
		29	WITHIN
		30	LOTS 1-4, SE (WITHIN), E½SW¼, E½NW¼, NE¼ (WITHIN)
		31	LOTS 1-4, SE¼, E½SW¼, E½NW¼, NE¼ (WITHIN)
		32	WITHIN
		33	ALL
4S	59E	4	ALL
		5	WITHIN
		6	LOTS 1-7, S½NE¼, SE¼NW¼, E½SW¼, SE¼ (WITHIN)
		7	LOTS 1-3, LOT 4 (WITHIN), SE¼ (WITHIN), E½SW¼, E½NW¼, NE¼
		8	ALL
		9	ALL
		10	ALL
		11	ALL
		14	SE¼, SW¼ (WITHIN), NE¼, NW¼
		15	N½NW¼, N½NE¼ (WITHIN ALL)
		16	N½, N½SW¼ (WITHIN ALL)
		17	N½SE¼ (WITHIN), NE¼NE¼SW¼ (WITHIN), NW¼ (WITHIN), NE¼
		18	NW¼, NE¼ (WITHIN ALL)

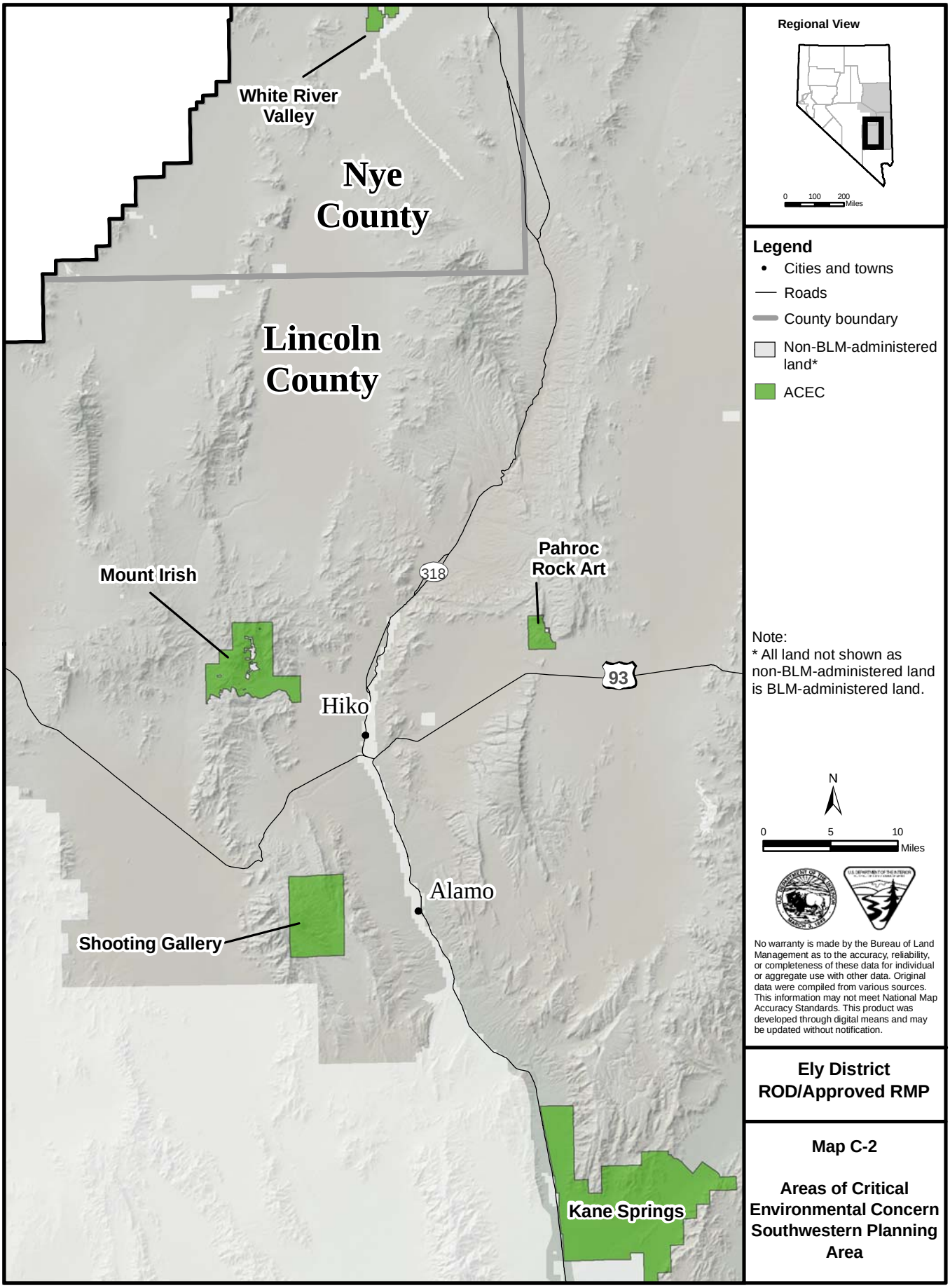
Table C-1 (Continued)

Township	Range	Section	
Pahroc Rock Art			
4S	62E	23	ALL
		24	SW¼SW¼SW¼SE¼, S½SW¼SW¼SE¼SW¼
		25	SW¼SE¼SE¼ (WITHIN), W½SE¼ (WITHIN), SW¼, NW¼NW¼, S½NW¼, SW¼NE¼ (WITHIN), W½NW¼NE¼
		35	N½
		36	N½ WITHIN
Rose Guano Bat Cave			
15N	67E	25	SE¼SE¼
Schlesser Pincushion			
1S	67E	27	S½SW¼
		28	S½SE, S½SW¼
		29	S½SE¼
		32	SE¼, NE¼
		33	ALL
		34	SW¼, NW¼
2S	67E	3	LOTS 3 & 4, SE¼, SW¼, S½NW¼
		4	ALL
		9	ALL
		10	ALL
		15	ALL
		16	SE¼, NE¼
Shooting Gallery			
6S	59E	25	ALL
		26	ALL
		35	ALL
		36	ALL
7S	59E	1	ALL
		2	ALL
		11	ALL
		12	ALL
		13	ALL
		14	ALL
		23	ALL
		24	ALL
6S	60E	29	ALL
		30	ALL
		31	ALL
		32	ALL
7S	60E	5	ALL
		6	ALL
		7	ALL
		8	ALL
		17	ALL
		18	ALL
		19	ALL
		20	ALL
Shoshone Ponds			
12N	67E	2	ALL
		11	SW¼SE¼, SW¼, NW¼, S½NE¼
13N	67E	35	S½SE¼, S½SW¼
Snake Creek Indian Burial Cave			
12N	70E	13	SE¼NW¼

Table C-1 (Continued)

Township	Range	Section	
Swamp Cedar Natural Area			
15N	67E	21	ALL
		22	ALL
		23	N½SW¼, NW¼
		27	NW¼SE¼, SW¼SW¼, N½SW¼, NW¼, NE¼
		28	ALL
		33	W½SE¼, SW¼, NW¼, SW¼NE¼, N½NE¼
		34	NW¼NW¼
White River Valley			
5N	60E	1	Lot 4, SW¼NW¼, NW¼SW¼
		2	ALL
6N	60E	35	W½NE¼, NW¼, SW¼, SE¼
		36	NE¼, E½NW¼, NE¼SW¼, SW¼SW¼
6N	61E	31	Lots 1-3
7N	61E	22	E½SE¼, E½NE¼
		23	ALL
		24	ALL
		25	NW¼SW¼, NW¼, N½NE¼
		26	ALL
		27	E½SE¼, E½NE¼
		34	NE¼SE¼, E½NE¼
		35	NW¼, NW¼NE¼
8N	61E	1	LOTS 2-4, SW¼, W½SE¼, SW¼NE¼, S½NW¼
		2	ALL
		11	ALL
		12	NW¼, SW¼
		13	N½NW¼
		14	N½NE¼, N½NW¼
9N	61E	25	W½NE¼, NW¼, SW¼, W½SE¼
		26	ALL
		35	ALL
		36	W½NE¼, NW¼, SW¼, W½SE¼
10N	61E	3	LOTS 3 & 4, S½NW¼
		4	LOTS 1-4, S½NW¼, S½NE¼
		5	LOTS 1&2, S½NE¼
11N	61E	27	SW¼
		28	SE¼, SW¼
		29	SE¼
		32	SE¼, NE¼
		33	ALL
		34	S½SW¼, NW¼SW¼, NW¼
7N	62E	19	ALL
		20	W½NE¼, NW¼, N½SW¼, SW¼SW¼, NW¼SE¼
		30	LOT 1, NW¼NE¼, NE¼NW¼

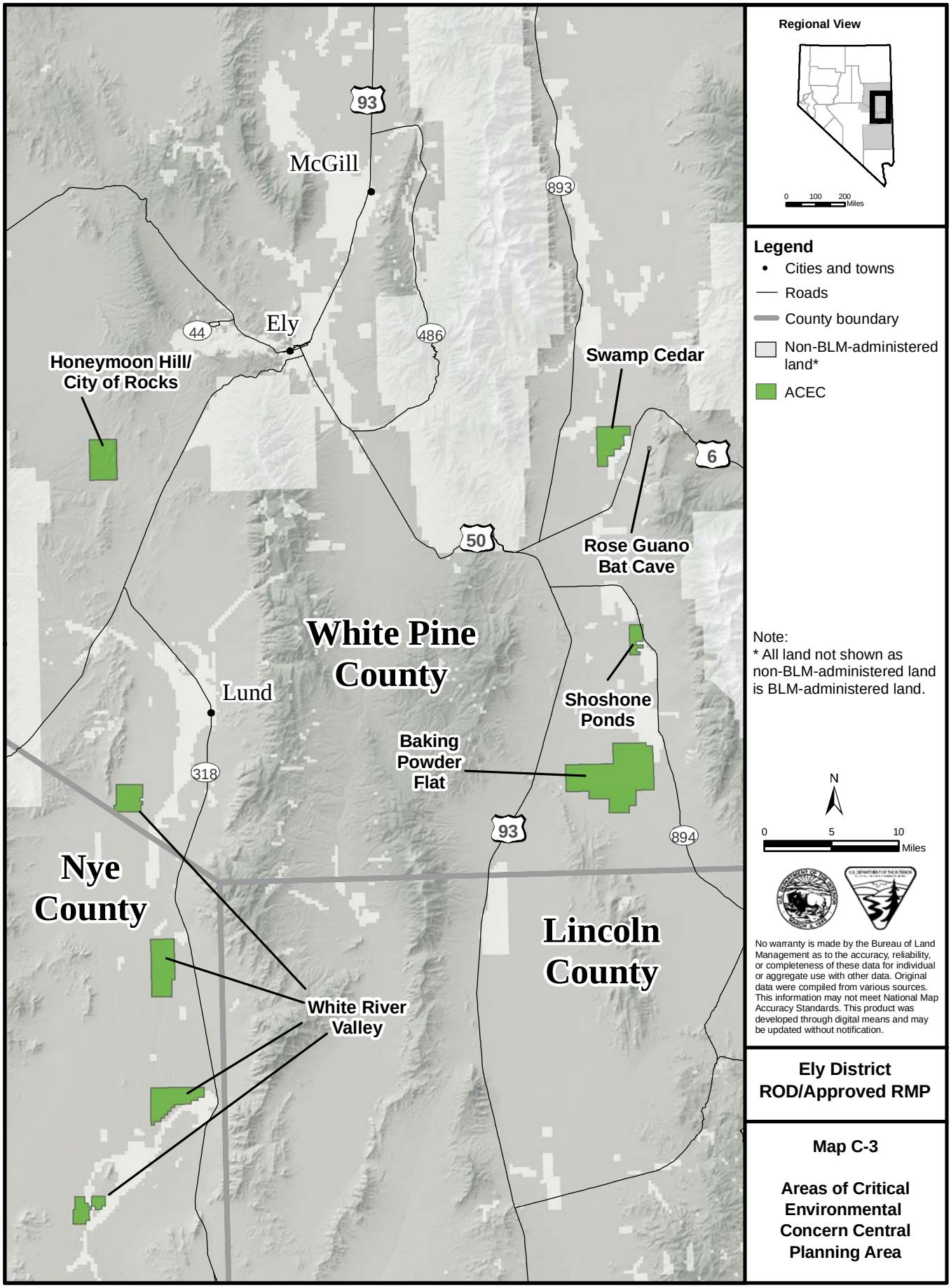

Regional View
0 100 200 Miles
Legend
Cities and towns
Roads
Non-BLM-administered land*
ACEC
Note:
* All land not shown as non-BLM-administered land is BLM-administered land.
N
0 5 10 Miles
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual 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.
Ely District
ROD/Approved RMP
Map C-1
Areas of Critical Environmental Concern
Southeastern Planning Area
Highland Range
Pioche
Condor Canyon
Panaca
Pahroc Rock Art
Schlesser Pincushion
Caliente
Lower Meadow Valley Wash
Lincoln County
Kane Springs
Beaver Dam Slope
Mormon Mesa
Mormon Mesa
322
320
321
86
320
319
93
317
93

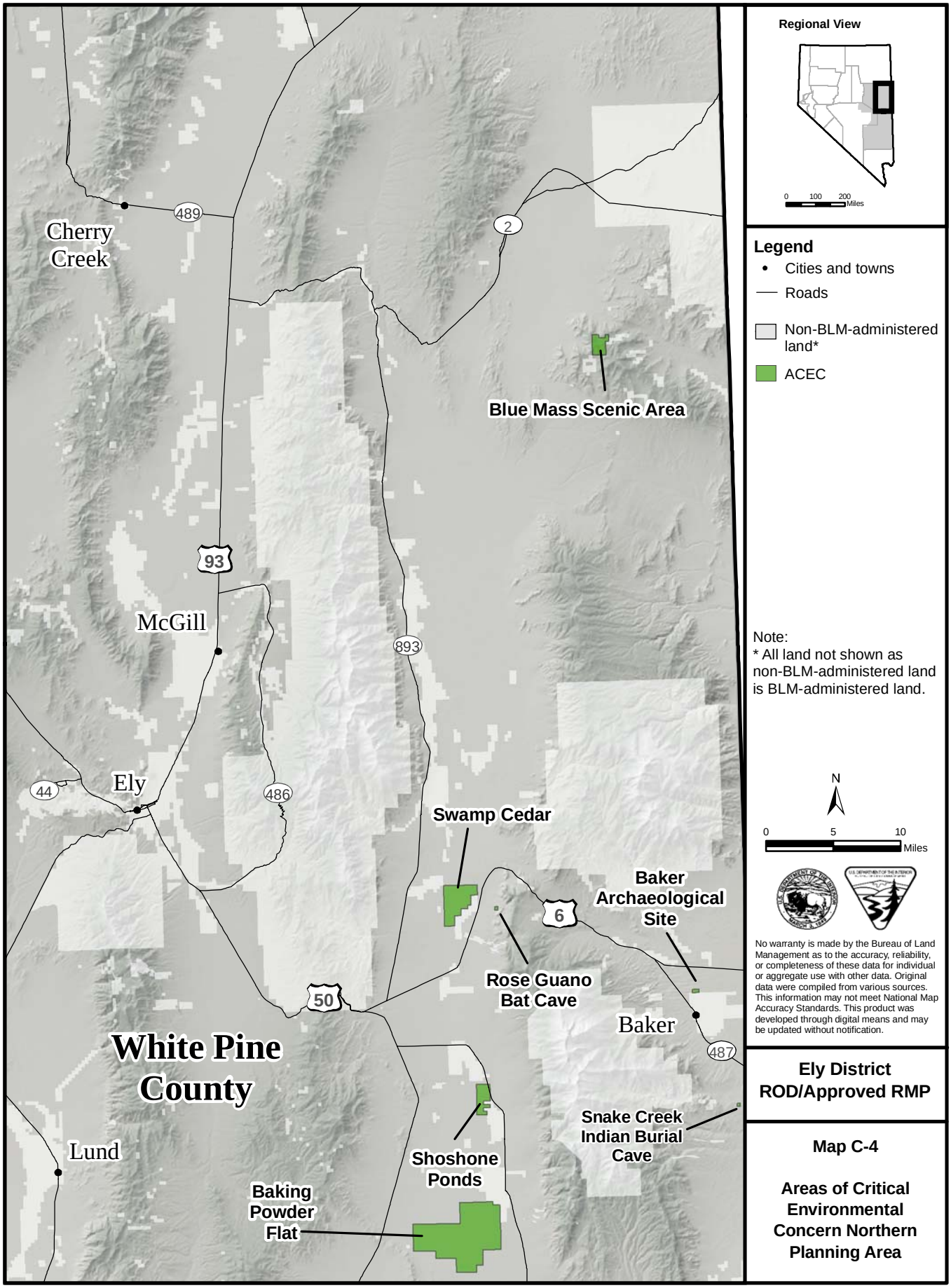


Ely District ROD/Approved RMP

Map C-2

Areas of Critical Environmental Concern Southwestern Planning Area


Regional View
0 100 200 Miles
Legend
Cities and towns
Roads
County boundary
Non-BLM-administered land*
ACEC
Note:
* All land not shown as non-BLM-administered land is BLM-administered land.
N
0 5 10 Miles
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual 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.
Ely District ROD/Approved RMP
Map C-3
Areas of Critical Environmental Concern Central Planning Area
93
McGill
893
Ely
44
486
Honeymoon Hill/ City of Rocks
Swamp Cedar
6
50
Rose Guano Bat Cave
White Pine County
Lund
Shoshone Ponds
Baking Powder Flat
318
93
894
Nye County
Lincoln County
White River Valley



Ely District ROD/Approved RMP

Map C-4

Areas of Critical Environmental Concern Northern Planning Area

APPENDIX D
BIOLOGICAL OPINION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
Ph: (702) 515-5230 ~ Fax: (702) 515-5231

Bureau of Land Management
JUL 14 2008
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Ely, NV

July 10, 2008
File Nos. 84320-2008-F-0078,
84320-2008-I-0079 and
84320-2008-TA-0080

Memorandum

To: District Manager, Ely District Office, Bureau of Land Management, Ely, Nevada

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Programmatic Biological Opinion, Informal Consultation, and Technical Assistance for Implementation of Actions Proposed in the Ely Proposed Resource Management Plan, Lincoln, White Pine, and Portions of Nye Counties, Nevada

The attached programmatic biological opinion (Attachment 1, File No. 84320-2008-F-0078) is based on our review of programmatic activities proposed for implementation by the Bureau of Land Management (BLM), as described in your October 2007 biological assessment (BA; BLM 2007a), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq*.) and potential effects on:

- the threatened Mojave desert tortoise (*Gopherus agassizii*) and its designated critical habitat;
- the threatened Big Spring spinedace (*Lepidomeda mollispinis pratensis*) and its designated critical habitat;
- the endangered White River springfish (*Crenichthys baileyi baileyi*) and its designated critical habitat;
- the endangered Pahrump poolfish (*Empetrichthys latos*); and
- the endangered southwestern willow flycatcher (*Empidonax traillii extimus*).

BLM, in coordination with the Service, determined that implementation of activities associated with at least one program may result in adverse effects to the five species identified above (Table 1). The effects determination in Table 1 changed from the effects determination identified in the BA as a result of discussions of the proposed action between BLM and Service. In addition to formal consultation, BLM requested informal consultation (File No. 84320-2008-I-0079) and our concurrence that implementation of programs identified in Table 1 for informal consultation, *may affect but are not likely to adversely affect* the five species identified above.

The Programmatic Informal Consultation is included as Attachment 2. Further, BLM determined their proposed action would result in *no effect* to the endangered Hiko White River springfish (*Crenichthys baileyi grandis*), endangered Pahranagat roundtail chub (*Gila robusta jordani*), endangered White River spinedace (*Lepidomeda albivallis*), threatened Railroad Valley springfish (*Crenichthys nevadae*), and threatened Ute lady's tresses (*Spiranthes diluvialis*).

Table 1. BLM's effects determination by program for species included in this consultation[1]

PROGRAM	**Desert Tortoise**	**Critical habitat**	**Big Spr. Spinedace**	**Critical Habitat**	**White R. Springfish**	**Critical Habitat**	**Pahrump Poolfish**	**SW Willow Flycatcher**
Vegetation Management	F	*	I	N	N	N	I	F
Special Status Species	N	N	F	*	N	N	F	N
Weed Management	F	*	F	*	F	*	I	F
Wild Horse Management	I	N	N	N	N	N	N	I
Lands, Realty, and Renewable Energy	F	*	N	N	I	N	N	F
Travel and Off-Highway Vehicle Management	F	*	I	N	F	*	I	F
Recreation	F	N	N	N	F	*	I	F
Livestock Grazing Management	F	*	F	*	N	N	F	F
Geology and Mineral Extraction	F	*	I	N	N	N	N	F
Fire Management	F	*	F	*	F	*	F	F
Special Designations	N	N	N	N	N	N	N	N

[1]Effects determinations presented here were modified from those presented in the BA, following discussions between BLM and the Service.

F = *may affect, likely to adversely affect* (formal consultation, biological opinion)
I = *may affect, not likely to adversely affect* (informal consultation); includes beneficial effects
N = *no effect* (no further consideration) or beneficial effects incorporated into other programs
* = adverse effects to critical habitat anticipated

The decisions in the Special Designations program provide net benefits to listed species or offset the potential effects of other programs. BLM's proposed Watershed Management Program included two decisions, neither of which would result in effects to listed species not described in other programs. Implementation of BLM's Forest/Woodland and Other Plant Products Program is not anticipated to result in effects to listed species. With the exception of potential harvest of seed and desert vegetation, most actions under this program would occur outside listed species habitats. If BLM identifies or proposes a future action under the Forest/Woodland and Other

Plant Products Program that may affect listed species, the Service shall be contacted to determine the appropriate consultation action.

The attached biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

The attached biological opinion, informal consultation, and technical assistance are based on information provided by BLM including the October 2007 BA (BLM 2007a); June 11, 2007, memorandum from the Service to BLM providing comments on the draft BA; references cited; draft Service guidance for programmatic biological opinions (Service 2003); discussions between the Service and BLM staff; and our files. Other information provided by BLM includes the November 2007 Ely Proposed Resource Management Plan and Final Environmental Impact Statement (RMP/Final EIS; BLM 2007b); and correspondence identified in the Consultation History of the attached biological opinion. A complete administrative record of this consultation is on file in the Nevada Fish and Wildlife Office in Las Vegas.

The Service anticipates that future BLM actions that may adversely affect the desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, or southwestern willow flycatcher will be appended to the biological opinion in accordance with Service guidance for programmatic formal consultations.

BLM also requested technical assistance (File No. 84320-2008-TA-0080) for the bald eagle (*Haliaeetus leucocephalus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), western burrowing owl (*Athene cunicularia hypugaea*), greater sage grouse (*Centrocercus urophasianus*), pygmy rabbit (*Brachylagus idahoensis*), Meadow Valley Wash speckled dace (*Rhinichthys osculus* ssp.), Meadow Valley Wash desert sucker (*Catostomus clarki* ssp.), Southwestern toad (*Bufo microscaphus*), banded Gila monster (*Heloderma suspectum cinctum*), and Sunnyside green gentian (*Frasera gypsicola*). Through technical assistance, the Service provides management recommendations to address potential effects to these species of concern. Our technical assistance memorandum is included in Attachment 3.

If we can be of any further assistance, please contact Janet Bair in the Nevada Fish and Wildlife Office in Las Vegas, at (702) 515-5230.

Robert D. Williams

Attachments

cc:
Supervisory Biologist - Habitat, Nevada Department of Wildlife, Las Vegas, Nevada
Assistant Field Manager, Division of Recreation and Renewable Resources, Las Vegas Field Office Bureau of Land Management, Las Vegas, Nevada
Deputy State Director, Resources, Land Use and Planning, Bureau of Land Management, Reno, Nevada
Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, Arizona
Field Supervisor, Utah Fish and Wildlife Office, West Valley City, Utah
Senior Resident Agent, Division of Law Enforcement, Fish and Wildlife Service, Boise, Idaho

Programmatic Biological Opinion (84320-2008-F-0078), Informal Consultation (84320-2008-I-0079), and Technical Assistance (84320-2008-TA-0080) for the Bureau of Land Management's Ely District Resource Management Plan

Photo: Jeff Servoss

Prepared by the Nevada Fish and Wildlife Office
Las Vegas, Nevada
July 10, 2008

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ATTACHMENT 1

BIOLOGICAL OPINION (File No. 84320-2008-F-0078)

A. Consultation History

On March 3, 2000, the Service issued a programmatic biological opinion to the Ely District Office for potential effects to the desert tortoise as a result of implementation of actions proposed in the Caliente Management Framework Plan (MFP) Amendment (File No. 1-5-99-F-450). The Service determined that proposed programmatic-level actions may result in disturbance of up to 7,645 acres of non-critical desert tortoise habitat and 950 acres of critical desert tortoise habitat. In addition, up to 16,926 acres of BLM-administered lands could be transferred to private or non-Federal administration. In addition to proposed programs of activities, BLM designated the Kane Springs, Mormon Mesa, and Beaver Dam Slope Area of Critical Environmental Concern (ACEC) in Lincoln County. Subsequently, the Service proposed to adjust the designated critical habitat boundaries to match the ACEC boundaries. However, because modification to critical habitat boundaries involves a listing action and is a low Service priority such modification is not likely in the near future. Any proposed modification to critical habitat requires consideration of the current status of the critical habitat including any additional areas to be designated as critical habitat, and how the proposed change would affect the species. Based on our current body of knowledge and the environmental baseline of critical habitat, any proposed modification to critical habitat boundaries would not likely match the current ACEC boundaries. This biological opinion superseded the 2000 programmatic biological opinion for the Caliente MFP Amendment.

On November 29, 2005, the Service provided comments on the July 2005 draft Ely RMP/EIS (File No. 1-5-06-TA-024). Major comments included:

- Critical habitat, ACECs, and other areas that provide habitat for federally listed species should be focal areas to remove livestock grazing. This would include the Mormon Mesa and Beaver Dam Slope critical habitat units (CHUs) (Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs).
- As proposed, approximately 88 to 90 percent of the Ely District would be open to mineral leasing or locatable minerals development which we believe conflicts with conserving biological resources. Further, we recommended closure of all ACECs to all forms of mineral extraction.
- Desert tortoise habitat should be a priority for road designations.
- Critical habitat and ACECs should receive additional consideration for off-highway vehicle (OHV) closures.

BLM responded to our comments on May 23, 2006, in a public comment report.

On March 1, 2006, the Service issued a species list (File No. 1-5-06-SP-081) for the Ely RMP planning area as requested by a BLM memorandum received February 2, 2006. The list included the species for which BLM requests formal and informal consultation identified above, as well as the Hiko White River springfish, Pahranagat roundtail chub, White River spinedace, bald eagle, Railroad Valley springfish, Ute lady's tresses, and western yellow-billed cuckoo, a candidate species for listing under the Act. The bald eagle was removed (delisted) from the List of Threatened and Endangered Wildlife under the Act, effective August 8, 2007 (72 FR 37345).

Beginning in 2006, BLM and the Service met multiple times to discuss the RMP/Final EIS and BA and transmitted information by email. A summary of those meetings and emails is provided in Table 2 below.

On February 14, 2007, the Service submitted comments on BLM's January 2007 Ely Proposed RMP/EIS (File No. 1-5-07-TA-068) which included comments provided previously. Major comments included:

- Designation of roads in desert tortoise habitat (both inside and outside ACECs) should be a high priority. Additional areas should be considered for OHV closures.
- We recommended removing livestock grazing from the Beaver Dam Slope CHU in response to stochastic catastrophic effects in the area (wildfires).
- There should be a clear explanation of the status of grazing allotments in desert tortoise habitat. We are concerned that these allotments have not been evaluated but current grazing prescriptions are allowed to continue in the absence of such evaluation.
- All three desert tortoise ACECs should be closed to mineral leasing.

On June 11, 2007, the Service provided comments on a draft of the BA. BLM considered all the comments and modified the BA to address many of them. Outstanding issues relevant to this consultation involved BLM's proposed action for mineral extraction, primarily involving fluid minerals, and livestock grazing. BLM responded to the Service comments by memorandum dated October 12, 2007.

On October 22, 2007, the Service received the final BA, additional information and a request to initiate consultation. On November 23, 2007, the Service received BLM's November 19, 2007, memorandum providing a report of activities covered under the 2003 biological opinion for the Caliente MFP Amendment. The Service incorporated the information in the activities report into this biological opinion. On March 10, 2008, the Service acknowledged that all required information had been received and provided a timetable for completing the consultation.

On March 18, 2008, the Service provided a portion of our draft biological opinion to BLM for review. BLM and the Service met on March 19, 2008, and discussed the draft and outstanding issues involving the proposed action for minerals management and livestock grazing.

On April 14, 2008, the Service provided a draft biological opinion to BLM for review and comments. A second draft was provided by email on June 16, 2008.

Meetings and email correspondence associated with this consultation are identified in Table 2.

Table 2. Chronology of meetings and email communications for this consultation and previous consultations on BLM Ely District programs and activities

DATE	MEETINGS: MAJOR TOPICS DISCUSSED
May 4, 2006	Reinitiation of consultation on the biological opinion for the Caliente Management Framework Plan (MFP) Amendment in response to 2005 wildfires; progress on preparing the RMP/EIS; review outline and schedule for the BA and biological opinion for the RMP/Final EIS; Service provided a recommended outline for the BA.
June 5, 2006	RMP/EIS and consultation schedule; Service expressed concern that BLM proposes to manage desert tortoise areas of critical environmental concern (ACECs) differently for mineral extraction activities; BLM informed the Service that watershed analysis will occur to address livestock grazing but may take years to complete (~10 years).
October 12, 2006	Conference Call. Revised schedule for the RMP/Final EIS and BA.
December 6, 2006	Schedule for the RMP/Final EIS; discussed changes from the previous draft.
March 5, 2007	Proposed livestock grazing in desert tortoise habitat, particularly in desert tortoise critical habitat.
May 31, 2007	Revised schedule for the RMP/EIS; the Service's recommendation to change the elevational distribution of the desert tortoise from 4,000 feet to 4,200 feet. Agreement that the term of the biological opinion is 10 years.
December 4, 2007	Update of the consultation and schedule for the RMP/Final EIS.
February 6, 2008	Status of the consultation, the Service's draft proposed action section of the biological opinion, and BLM's effects determinations for the desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, and southwestern willow flycatcher.
February 28, 2008	Conference call. BLM responded to additional information needs; discussed fluid mineral leases and monitoring grazing allotments.
March 19, 2008	Reviewed the first 70 pages of a draft of this biological opinion and outstanding issues.
April 17, 2008	The Service discussed a draft of the biological opinion and next steps in the consultation process as well as a proposed time table.
May 5, 2008	Discussed BLM's comments on the April 14, 2008, draft biological opinion
June 19, 2008	Conference call. Discussed revisions to draft biological opinion and schedule for completing consultation.

	EMAIL CORRESPONDENCE
October 16, 2006	BLM to Service. Summary of October 12, 2006 meeting.
April 17, 2007	BLM to Service. Draft BA to be provided May 7, 2007; planned meeting May 31, 2007
January 9, 2008	Service to BLM. Request for information on the proposed action in the BA and effects determination.
January 14, 2008	Service to BLM. Update on preparation of the biological opinion.
January 16, 2008	BLM to Service. Response to Service's 1/14/2008 email indicating additional information will follow.
January 18, 2008	BLM to Service. Submitted table with requested information on anticipated levels of disturbance of desert tortoise habitat.
February 15, 2008	Service to BLM. Confirm effects determination; draft portion of description of proposed action for BLM's review/approval; and additional information needs for listed species in the action area.
March 25, 2008	Service to BLM requesting an estimate of anticipated flycatcher habitat disturbance.
March 28, 2008	BLM to Service. Response to March 25 request, providing revised acreage estimates of anticipated disturbances.
April 3, 2008	BLM to Service. Additional information provided regarding potential effects to the southwestern willow flycatcher.
April 17, 2008	Service to BLM providing a draft of this biological opinion.
May 1, 2008	BLM to Service providing comments on the April 14, 2008, draft biological opinion.
June 4, 2008	BLM to Service providing suggested language for livestock grazing term and condition (7.b.).
June 16, 2008	Service to BLM providing second draft biological opinion.
June 25, 2008	BLM to Service providing comments on the June 16, 2008, draft biological opinion.

B. Programmatic Consultations

This biological opinion was prepared in accordance with the July 16, 2003, draft guidance for programmatic-level consultations. The term "programmatic consultation" has become a generic term encompassing a broad category of section 7 consultations that evaluate the potential for Federal agency programs to affect listed and proposed species, and designated and proposed critical habitat. Such programs typically guide implementation of future agency actions by establishing standards, guidelines, or governing criteria to which future actions must adhere. At times the term *programmatic consultation* has been used to refer to consultations on a large group of similar actions (*e.g.*, a National Forest's timber harvest program for a particular year) as well as to refer to consultations covering different types of actions proposed within a large geographic area, such as a watershed. Such consultations can provide the benefit of streamlining the consultation process while leading to a more landscape-based approach to consultations that can minimize the potential "piecemeal" effects that can occur when evaluating individual projects out of the context of the complete agency program.

This programmatic biological opinion analyzes the potential effects of implementing BLM's proposed actions in the Ely RMP/Final EIS and develops the appropriate project-specific documentation that addresses the effects of individual projects. This programmatic biological opinion contains all of the elements found in a standard biological opinion. The format of this programmatic biological opinion conforms to the *appended programmatic consultation*

approach, which will require that BLM and the Service produce project-specific documentation that is physically appended to this programmatic biological opinion before the action occurs. Exceptions are continuation of livestock grazing until term-permits are proposed for approval by BLM and wildfire suppression activities which would occur prior to the activity-level consultation.

Project-Level Consultation under the Appended Programmatic Consultation Approach

As individual projects or actions are proposed under the appended programmatic consultation approach, BLM will provide project-specific information that: (1) describes each proposed action and the specific areas to be affected; (2) identifies the species and critical habitat that may be affected; (3) describes the manner in which the proposed action may affect listed species; (4) describes the anticipated effects; (5) specifies, if appropriate, that the *anticipated effects from the proposed project are consistent with those anticipated in the programmatic biological opinion*; (6) describes proposed measures to minimize potential effects of the action; (7) describes any additional effects, if any, not considered in the programmatic consultation. On a limited, project-by-project basis, additional effects may occur in action areas that extend beyond BLM lands, but are subject to federal nexus as defined in 50 CFR 402.02 (activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States).

The Service reviews the information and effects analysis provided for each proposed project and this project-specific review is documented in accordance with the guidance provided below. To initiate the project-specific review, the project information and effects analysis should be accompanied by a cover letter that specifies that BLM has determined the proposed project is consistent with the programmatic biological opinion, and requests that the proposed project be appended to the programmatic biological opinion to fulfill BLM's consultation requirements. In this programmatic biological opinion, the Service determined the overall anticipated incidental take for all proposed BLM activities in the action area over a 10-year period at the programmatic level. As each action is submitted by BLM to the Service to be appended to this programmatic biological opinion, the Service will determine the anticipated incidental take for each action, at the project level, as a subset of the incidental take anticipated in the programmatic biological opinion. BLM shall be responsible for accurately reporting any incidental take of listed species to the Service that occurs in association with actions covered under this programmatic biological opinion.

Individual BLM actions that are *likely to adversely affect* listed species shall require a memorandum from BLM to the Service (or attached form, Appendix A) that contains:

(1) a summary of any information not identified in the programmatic consultation document used to evaluate the effects of the proposed action;
(2) a short project summary as provided by BLM;
(3) a detailed discussion of the effects of the proposed action on listed species and critical habitat;

(4) a statement regarding the specific project's effects to the environmental baseline, including a restatement of the estimated acres of disturbance and possible forms of take that are anticipated and a tallying of the overall effects to the environmental baseline from projects implemented under the programmatic consultation to date;
(5) any additional project-specific reasonable and prudent measures and/or terms and conditions needed to ensure the minimization of the effects of the take that will result from the proposed project; and,
(6) language that appends the project to the programmatic consultation and associated incidental take statement, if appropriate.

Although there is no standard for the required project-specific documentation, the Service generally should complete its response in approximately two pages and within 45 days. This documentation is then physically attached (appended) to the programmatic biological opinion in an appendix. Therefore, the programmatic biological opinion, together with the appended documentation, fulfills the consultation requirements for implementation of both program-level and project-level actions.

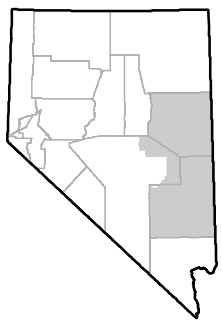
Monitoring shall be conducted at least annually by BLM and the Service to assure that the effects analysis in the programmatic biological opinion is accurate including a comprehensive review of how the program-level biological opinion is working, and whether its implementing procedures are in compliance. During this review, the environmental baseline should be reviewed and updated as needed to account for unanticipated effects or the lack of anticipated effects. During this process it may be determined that the program-level biological opinion is functioning as anticipated and, therefore, activities should continue, or that adjustments should be made.

C. Description of the Proposed Action

The Ely BLM proposes to implement various land management activities in the planning area (Figure 1) as described in the Ely Proposed RMP/Final EIS and BA. The planning area consists of public lands in White Pine, Lincoln, and a portion of Nye counties in east-central Nevada. The planning area measures approximately 230 miles (north-south) by 115 miles (east-west). The Ely District Office manages approximately 11.5 million acres of public lands and minerals out of approximately 13.9 million acres within the boundaries of the planning area.

Most of the information in this biological opinion is from the October 2007 BA (BLM 2007a). All decisions presented in the Ely Proposed RMP, contained in Chapter 2 of the RMP/Final EIS (BLM 2007b) constitute the proposed action and are incorporated here by reference. A detailed summary of the proposed action can be found in section 2.0 Summary of Proposed RMP of the BA, which is also incorporated in its entirety herein by reference as the proposed action for this consultation.

Regional View



0 100 200 Miles

Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Desert tortoise habitat
- Big Spring spinedace critical habitat**

Special Status Species Known Occurrences

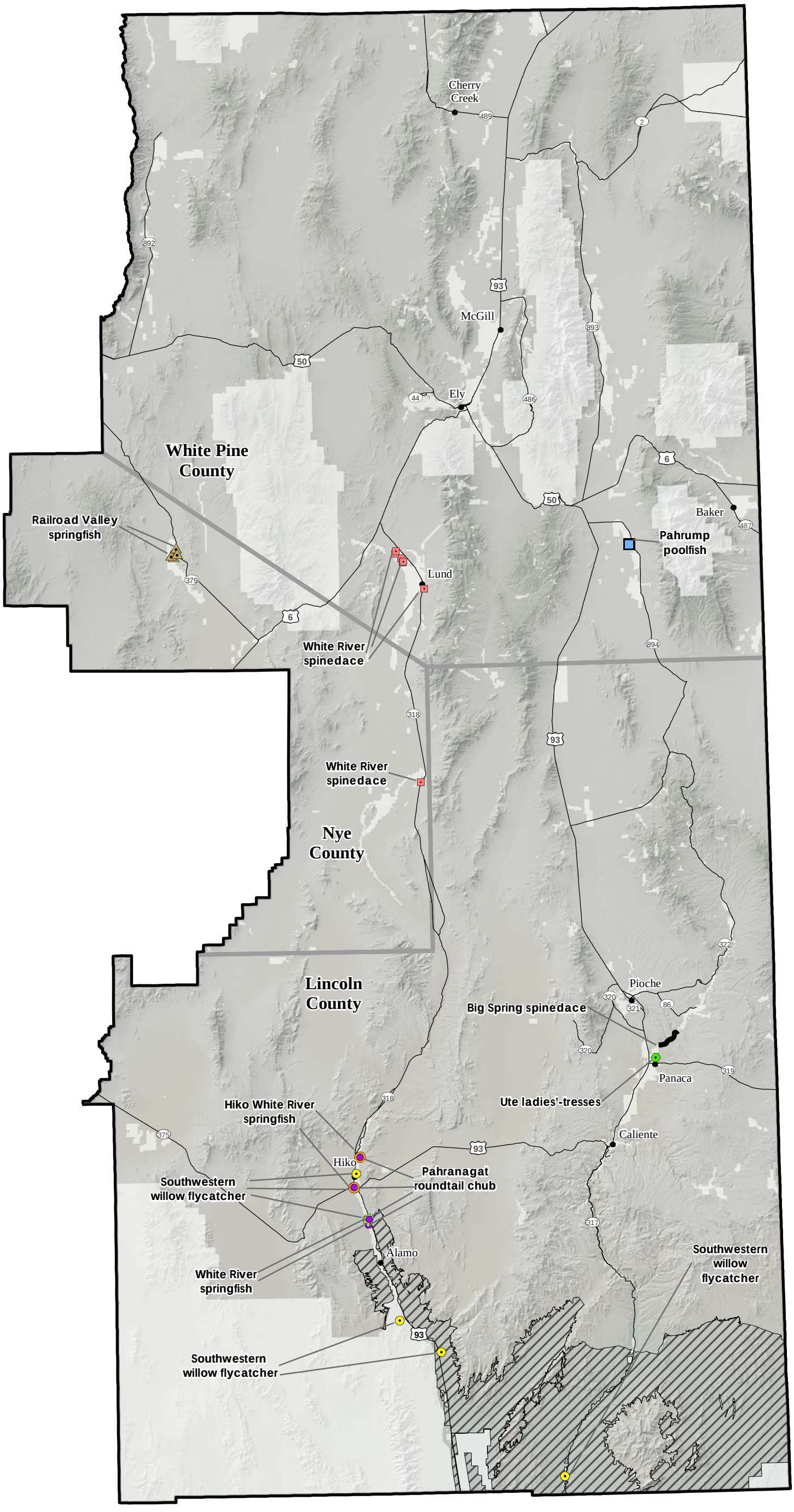
- White River springfish
- Hiko White River springfish
- Pahranagat roundtail chub
- Pahrump poolfish
- Railroad Valley springfish
- White River spinedace
- Ute ladies'-tresses
- Southwestern willow flycatcher

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.
** Critical habitat for other federally-listed fish species may be found in Table 1-1.

N

0 8 16 Miles

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual 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.



Ely Biological Assessment

Figure 1

Planning Area for the Ely RMP with Species Locations

This programmatic biological opinion addresses the anticipated effects of the Proposed RMP at the broad-scale planning level. Subsequent site-specific section 7 consultation will be necessary for each discretionary action that may affect listed species.

Management actions from the Approved Caliente Management Framework Plan (MFP) Amendment and Record of Decision for the Management of Desert Tortoise Habitat (BLM 2000) have been incorporated into relevant sections of the Proposed RMP. Where appropriate, the management actions have been modified to reflect changes in conditions since 2000 and the editorial style of the proposed RMP.

The proposed RMP/Final EIS allocates resources and makes decisions regarding: air, water, and soil resources; vegetation; fish and wildlife; special status species; wild horses; cultural and paleontological resources; visual resources; lands and realty actions; renewable energy projects; travel management and OHV use; recreation management; livestock grazing; forest/woodland and other plant products; geology and mineral extraction; watershed management; fire management; noxious and invasive weeds management; and special designations.

The proposed RMP/Final EIS primarily is based on Alternative E presented in the 2005 Draft RMP/EIS and on changes to management actions in response to public and internal comments received on the Draft. The management actions that are presented in the Proposed RMP/Final EIS were developed through consideration of the planning criteria presented in Section 1.5 of the Draft and Final RMP/EIS, public scoping comments, BLM policy especially as presented in the Land Use Planning Handbook, the professional judgment of the staff in the Ely District Office, and comments from a wide array of users of the planning area. The proposed RMP is a compilation of those individual management actions from the other four alternatives, plus unique management actions that the Ely District Office has determined will best meet its obligations for multiple use management of the resources found within the decision area. Through the proposed RMP/Final EIS, BLM will strive to continue implementation of recovery plan action items from approved recovery plans and conservation agreements.

The proposed RMP/Final EIS will guide BLM management of public lands and minerals within the planning area for a period of approximately 20 years from the date of the record of decision or until it is amended or revised in the future. The term of this biological opinion is 10 years but BLM and the Service may establish conservation measures for listed species in this document and/or the RMP/Final EIS that extend beyond 10 years such as ACEC designations, or species and habitat protections in accordance with approved recovery plans.

The proposed plan represents those actions needed to achieve the plan goals and objectives. At the RMP level, these decisions describe what may or may not be authorized in the planning area and provide broad-scale direction for management. The actions are not usually site-specific. Site-specific actions are considered implementation decisions and are typically deferred to activity-level planning.

Many actions in the proposed plan will be implemented or become effective upon approval of the proposed RMP/Final EIS. This includes land-use allocations and special designations such as ACECs. Management actions that require additional site-specific project planning as funding becomes available will require further environmental assessment and consultation under the Act. Actions to implement site-specific projects are subject to administrative review at the time such decisions are made. BLM will continue to involve and collaborate with the Service during implementation of the RMP/Final EIS.

Elements of the Proposed Action that May Result in Effects to Listed Species

The proposed action is described in Chapter 2 of the proposed RMP/Final EIS and BA. For the purpose of preparing this biological opinion, the Service compiled and summarized BLM's proposed actions as described below. The summary is organized by resource program (*e.g.*, vegetation, lands and realty authorizations, etc.). Certain proposed RMP decisions (BLM 2007b) provide minimization measures and recovery actions. *Decisions* are actions that BLM will implement whereas the *best management practices (BMPs), standard operating procedures (SOPs), Stipulations, Monitoring, and Tools and Techniques* provided as appendices to the RMP and the BA, or contained in other existing management guidance documents, will be implemented as part of future actions, as appropriate. Through project-level consultation, the Service will consider which measures are necessary to avoid (informal consultation) or minimize (formal consultation) potential effects to listed species that may result from proposed actions.

The BMPs, SOPs, Stipulations, Monitoring, and Tools and Techniques are provided in: (1) Appendices A, B, and C of the BA (BLM 2007a), (2) BMPs contained in the Gold Book (U.S. Department of Interior and U.S. Department of Agriculture 2006), and (3) BMPs, SOPs, and Conditions from the Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS (BLM 2007c).

The *action area* for this consultation includes all habitat for the desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, and southwestern willow flycatcher within the planning area, as well as habitat of listed species outside the planning area that may be indirectly adversely affected by actions proposed in the RMP/Final EIS.

BLM estimates the potential disturbance of desert tortoise critical and non-critical habitat below in Table 3 as a result of implementation of the proposed action (BLM 2008). Additional disturbances may occur as part of a BLM action on non-Federal land. Disturbances are further described under the *effects* section of this biological opinion. The scope of this consultation including our effects analysis and incidental take exemption is based on the levels of disturbance anticipated to occur, by program identified in Table 3.

BLM estimates the potential disturbance of southwestern willow flycatcher habitat below in Table 4 as a result of implementation of the proposed action (BLM April 3, 2008 correspondence). Habitat disturbance is further described under the *effects* section of this biological opinion. As for the desert tortoise, the scope of this consultation including our effects

analysis and incidental take exemption for the flycatcher is based on the levels of disturbance anticipated to occur, by program identified in Table 4.

Table 3. Summary of Anticipated Disturbance of Desert Tortoise Habitat

PROGRAM	MAXIMUM ANTICIPATED DISTURBANCE OF DESERT TORTOISE HABITAT ON BLM LAND (ACRES)	
	CRITICAL	NON-CRITICAL
Vegetation Management	36,752	72,429
Weed Management	Site-specific	Site-specific
Lands, Realty, and Renewable Energy:		
• Disposal	0	4,870
• R&PP Act	0	15,000
• Land use authorizations:		
-Rights-of-way (except minerals) [a]	21,900	14,820
- Communication sites	0	20
-Renewable energy	18	166
Travel Management/OHV Management[b]	0	0
Recreation[b]	0	100
Livestock Grazing[c]		
Geology/Mineral Extraction:		
• Fluid leaseable minerals	100	500
• Solid leaseable minerals	0	0
• Locatable minerals	126	315
• Mineral materials (salable)	120	380
Fire Management[d]	360	1,140

[a] Major rights-of-way will be situated in corridors within the planning area; other rights-of-way may occur outside corridors. ACECs will be considered avoidance areas for rights-of-way and other land use authorizations in the future, but additional rights-of-way could be authorized subject to environmental impact analysis and section 7 consultation for specific applications. An unquantified portion of the designated utility corridors already have been disturbed or destroyed. (BLM 2008)

[b] Although roads and trails within and outside critical habitat currently exist, BLM does not anticipate creating new roads or trails as a result of this program. Vehicular travel will be limited to existing roads and trails.

[c] Currently, up to 50,000 acres of desert tortoise critical habitat and up to 470,000 acres of non-critical desert tortoise habitat occur in grazing allotments that may be grazed (Table 6). No new habitat disturbance is anticipated as a result of proposed grazing; however, continuation of grazing is anticipated to result in some level of habitat disturbance and impact which will be determined at the allotment-level consultation for each allotment.

[d] Figures are based upon average acreage disturbances due to suppression activities, Emergency Stabilization and Rehabilitation, and fuels management. The actual acreage is dependent upon too many environmental factors to predict with accuracy.

Table 4. Summary of Anticipated Disturbance of Southwestern Willow Flycatcher Habitat (BLM April 3, 2008 correspondence)

Program	Maximum Anticipated Disturbance (acres) of Southwestern Willow Flycatcher Habitat[a]
Vegetation and Weed Management	400
Lands, Realty, and Renewable Energy	
• Disposal	0
• R&PP Act	20
• Land Use Authorizations	
– Rights-of-way (except minerals)	20
– Communication sites	0
– Renewable energy	0
Travel, OHV, and Recreation Management	89
Livestock Grazing[b]	
Mineral Extraction	
• Fluid leasable minerals	10
• Solid leasable minerals	0
• Locatable	10
• Mineral materials (salable)	10
Fire Management	50

[a] Adverse effects from disturbance of flycatcher habitat are anticipated to be short term. BLM will replace the loss of riparian vegetation to ensure no net loss of flycatcher habitat along the Meadow Valley Wash or Clover Creek. Additional disturbance may occur on non-Federal lands.

[b] It is not currently known how many acres of suitable and potentially suitable flycatcher habitat occurs in grazing allotments along the Meadow Valley Wash. No new habitat disturbance is anticipated as a result of proposed grazing. However, continuation of grazing is anticipated to result in some level of ongoing habitat disturbance and impact which will be determined at the allotment-level consultation for each allotment.

The following definitions apply to the terms “Project” and “Event” as referred to in the Description of the Proposed Action:

1. "Project" means any surface-disturbing activities proposed by BLM that may cause disturbance of listed species habitat and/or death or injury of a listed species under this consultation, with the exception of activities associated with fire suppression, livestock grazing, and events authorized under a Special Recreation Permit (SRP). "Projects" include construction and related activities such as trenching, blading, building of structures, and other similar activities. Examples of “projects” include but are not limited to ROW actions, pipelines, communication towers, and range improvement projects.

2. "Event" means any activity authorized by BLM under a Special Recreation Permit that may cause disturbance of listed species habitat and/or death or injury of a listed species under this consultation. "Events" include motorized and non-motorized, speed and non-speed contests. "Events" may occur over one or more day's duration. Examples of "events" include but are not limited to horse endurance rides, motorcycle races, and OHV tours. Activities that are non-permitted, including casual use, are not considered "events."

This biological opinion was prepared to address potential adverse effects to listed species as a result of nine groups of activities or *programs* described in the RMP/Final EIS and BA. The term of this biological opinion is 10 years however BLM proposes to implement actions in the RMP/Final EIS over the next 20 years. Specifically, only those programs that may affect the desert tortoise (DT), Big Spring spinedace (BSSD), White River springfish (WRSF), Pahrump poolfish (PAPO) and southwestern willow flycatcher (SWWF) are summarized below.

A subset of management actions proposed by BLM may result in a positive or beneficial effect to listed species, while others may result in minimizing effects to species from program implementation. Specifically, BLM proposes to implement the following programs and management actions that may affect listed species covered under informal or formal consultation for the proposed RMP/Final EIS:

1. Vegetation Management (Formal: DT, SWWF; Informal: BSSD, PAPO)

BLM will emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape **(VEG-1)**. BLM proposes to develop specific management objectives through the watershed analysis process, and management strategies will be designed to achieve plant composition within the desired range of conditions for vegetation communities, emphasizing plant and animal community health at the watershed level **(VEG-2** and **VEG-4)**. Conservation and maintenance of existing healthy, resilient, and functional vegetation communities will be emphasized **(VEG-6)**. This program of activities focuses on management of native plant communities whereas weed management focuses on removal of invasive non-native plants from the landscape such as salt cedar (*Tamarisk* sp.)

Potential activities that BLM may approve or carry out include herbicide application, mechanical treatments, limited application of prescribed fire, broadcast seeding, and planting of live shrubs and trees. BLM's proposed action for vegetation management shares some common actions with weed management such as application of herbicides and mechanical treatment.

Vegetation Management of Mojave Desert Vegetation

The acreage of potential disturbance for vegetation management identified in Table 3 is based on the following assumptions (BLM 2008):

- all of the desert tortoise habitat (critical and non-critical) is in the Mojave Desert vegetation community;
- a maximum of 15 percent of the Mojave Desert vegetation community will be treated or maintained (15 percent of the creosotebush/bursage and 10 percent of the blackbrush communities);
- treated areas are uniformly distributed across the planning area; and
- any vegetation treatment in desert tortoise habitat (including weeds) will be done only after coordination/consultation with the Service and after meeting the Desert Tortoise Recovery Plan direction.

The major emphasis for vegetation treatment within the Mojave Desert is control of invasive and noxious weeds. Only a small percentage of Mojave Desert vegetation (<15 percent) will be scheduled for vegetation treatment. Management of salt desert scrub, Mojave Desert, and nonnative seedling vegetation communities may result in adverse effects to the desert tortoise and its critical habitat. Vegetation treatments will be performed on a very limited basis in the Mojave Desert ecosystem and, therefore, effects on critical habitat for desert tortoise will be minimal.

Vegetation Management of Aquatic and Riparian Communities

Management actions for riparian and wetland communities will promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, in order to provide for stable water flow and bank stability **(VEG-23)**, and will focus on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat **(VEG-24)**. The primary assumption for the effectiveness of this program in maintaining quality habitat for the fishes and flycatcher is that restoring non-functioning or poorly functioning areas to a properly functioning condition will result in an improvement of habitat for the fishes and the flycatcher.

The major emphasis for vegetation treatments in the vicinity of listed fishes habitats will be treatment of the surrounding uplands to increase soil stability and decrease erosion, which should cause minimal adverse effects to the listed fishes. Vegetation management in riparian communities that support southwestern willow flycatcher habitat will emphasize protection, maintenance, and restoration of riparian habitat. Vegetation management in the form of invasive weed control and subsequent restoration activities may result in short-term adverse effects to the flycatcher, with overall long-term beneficial effects. Control of invasive weeds, subsequent restoration activities, and

effects to the aquatic and riparian species in these habitats is discussed under "Weed Management."

BLM's proposed SOPs and BMPs to minimize the potential effects to listed species that may result from implementation of vegetation management actions are described in the BA (BLM 2007a) and Final EIS for vegetation treatments using herbicides (BLM 2007c).

2. Special Status Species Management (Formal: BSSD, PAPO)

The goal of the Special Status Species program is to conserve, maintain, and restore special status species populations and their habitats; support the recovery of federally listed threatened and endangered species; and preclude the need to list additional species. The objective of the program is to manage suitable habitat for special status species in a manner that will benefit these species directly or indirectly and minimize loss of individuals or habitat from permitted activities.

As part of the Special Status Species program, BLM proposes to develop and implement an interagency inventory and monitoring program for special status plant and animal species **(SS-2)**, participate on interagency recovery implementation teams to identify and address management actions for the recovery of listed species in the planning area **(SS-3)**, mitigate all discretionary permitted activities that result in the loss of special status species habitats at a ratio of 2 to 1 (with the exception of desert tortoise habitat) **(SS-10)**, manage the refugium at Shoshone Ponds for Pahrump poolfish in accordance with the Recovery Plan for the species **(SS-11)**, expand the fenced area at Shoshone Ponds **(SS-12)**, manage the uplands around Shoshone Ponds to increase vegetation cover, reduce runoff, and prevent excessive siltation into the ponds **(SS-13)**, develop additional ponds at Shoshone Ponds **(SS-14)**, manage listed species habitats by implementing those actions and strategies identified in recovery plans for the species that BLM has the authority to implement **(SS-17, SS-19, SS-21, SS-24)**, and implement various management actions to benefit the desert tortoise **(SS-24 through SS-33)**.

3. Weed Management (Formal: DT, BSSD, WRSF, SWWF; Informal: PAPO)

Activities associated with the treatment of noxious and invasive weeds include application of herbicides, clearing or cutting vegetation by hand or machinery (*e.g.*, chainsaw), and the use of OHVs or trucks. Mechanical methods of invasive species control may involve the use of machinery, OHVs, or hand tools.

BLM proposes to 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 (**WEED-1)**. BLM will develop weed management plans that address weed vectors, minimize the movement of weeds within public lands, consider disturbance regimes, and address existing weed infestations (**WEED-2**). When manual weed control is conducted, the cut weeds and

weed parts will be disposed of in a manner designed to kill seeds and weed parts (**WEED-3**). Straw, hay, and other products used for reclamation or stabilization activities will be certified as weed free **(WEED-4)**. Source sites such as borrow, fill, or gravel pits will be inspected **(WEED-5)**, and vehicles and heavy equipment used during ground disturbing activities, emergency fire suppression, or authorized off-road driving will be free of soil and debris capable of carrying weed propagules **(WEED-6)**. Animals used on public lands by special recreation permittees or contractors will be weed-free **(WEED-7)**. Areas of weed infestation will be flagged and avoided during planned disturbance activities **(WEED-8)**, weed-infested soils will not be moved or redistributed **(WEED-9)**, and weed surveys will be conducted prior to project approval **(WEED-10)**.

Weed Control in Desert Tortoise Habitat

BLM's estimate of anticipated disturbance of desert tortoise habitat in Table 3 is based on management for weeds in areas not considered as other types of disturbance, including vegetation management, roads, and fire management (BLM 2008). Weed management will occur on a site-specific basis. Any vegetation treatment in desert tortoise habitat, including weeds, would be considered in coordination/consultation with the Service and in accordance with the Desert Tortoise Recovery Plan direction.

Weed Control in Aquatic and Riparian Habitats

Weed control activities are anticipated to occur at Condor Canyon, Ash Springs, and along the Meadow Valley Wash and Clover Creek. BLM estimates that up to 400acres of salt cedar considered suitable or potentially suitable flycatcher habitat may be removed along the Meadow Valley Wash (Table 4). Plans for weed control in Condor Canyon or Ash Springs will be coordinated with the appropriate Recovery Implementation Team, Nevada Department of Wildlife (NDOW), and the Service during plan development.

General Minimization Measures (*Decisions*) *Proposed by BLM for the Weed Management Program*:

BLM proposes measures to minimize the potential effects to listed species that may result from implementation of weed management actions in the Vegetation Treatments Using Herbicides EIS (BLM 2007c). In addition, BLM's proposed RMP/Final EIS decisions (BLM 2007a) will further minimize potential effects of weed management which include: ensure that organic and inorganic materials are weed-free (**WEED-4, WEED-5**), ensure that vehicles, equipment, and animals do not transport weed propagules (**WEED-6, WEED-7**), flag and avoid sensitive areas (**WEED-8**), not move infested soils or materials are taken to weed-free or relatively weed-free areas (**WEED-9**), and complete a weed survey and weed risk assessment prior to project approval (**WEED-10**).

4. Wild Horse Management (Informal: DT, SWWF))

The Wild Free-roaming Horse and Burro Act of 1971 (Public Law 92-195) requires BLM to protect and manage wild horses in areas where they were found at the time of the Act, in a manner designed to achieve and maintain a thriving natural ecological balance in keeping with the multiple use management concept of public lands. BLM will maintain wild horse herds at appropriate management levels within herd management areas where sufficient habitat resources exist to sustain healthy populations at those levels. BLM will coordinate wild horse management with other Federal and State jurisdictions and resource management agencies.

General Minimization Measures (Decisions) Proposed by BLM for the Wild Horse Management Program:

BLM proposes measures to minimize the potential effects of the wild horse management program that may result from its implementation. These include: manage wild horses within six herd management areas designated from herd areas based on wild horse use and habitat suitability listed in **Table 2-11** of the BA (**WH-4**), remove wild horses and eliminate herd management area (HMA) status for those areas that do not provide sufficient habitat resources to sustain healthy populations (**WH-5**)**, (**implementation of this decision will result in the removal of wild horses from HMAs that overlaps with habitats for the desert tortoise and southwestern willow flycatcher. No HMAs currently overlaps with habitats for the three listed fishes), and base adjustments to appropriate management levels on monitoring data and perform adjustments typically, but not exclusively, in conjunction with the watershed analysis process (**WH-7**).

For gathers that occur within desert tortoise habitat (**WH-9**): The Ely District Office does not plan to manage for any wild horses in desert tortoise habitat and this management will be used only if emergency gathers are needed in the future should wild horses re-enter the area. Under these circumstances: trap sites will be located at previous trap site locations or in previously disturbed areas, where possible. All trap and holding sites, and access routes will be cleared by a qualified tortoise biologist before the trap and holding facilities are set up. The parcel will be surveyed for desert tortoise using survey techniques that provide 100 percent coverage. Holding facilities will not be located inside ACECs. If possible, they should be located outside of desert tortoise habitat. If they cannot be located outside of desert tortoise habitat, they should be placed in previously-disturbed areas. All vehicle use in desert tortoise habitat will be restricted to existing roads and trails and within surveyed areas. Vehicles will not exceed 25 miles per hour (mph). Trash and garbage will be contained in a covered, raven-proof trash receptacle and disposed of off-site in a designated facility. No trash or garbage will be buried at the sites. Use of hay or grains as enticements into the traps will not occur within desert tortoise habitat to avoid the introduction of nonnative plant species. Feeding of hay or grains to animals will not be allowed within ACECs. Feeding of hay

or grains to animals at holding facilities on public land within desert tortoise habitat will be avoided when possible.

5. Lands, Realty, and Renewable Energy (Formal: DT, SWWF; Informal: WRSF)

a. Retention/Disposal/Acquisition/Withdrawal

All designated critical habitat and ACECs, and lands with springs and creeks that contain fisheries within the planning area will be retained in Federal ownership unless disposal results in the acquisition of land with higher quality habitat (**LR1, LR-2, and LR-5**). BLM will recommend withdrawal of lands with sensitive or high resource value from surface and mineral entry (**LR-31**). BLM proposes to maintain access to recreation areas (**LR-17**).

In accordance with the Lincoln County Conservation, Recreation, and Development Act of 2004, BLM proposes to dispose of up to 90,000 acres of public land in Lincoln County **(LR-8)** by sale, up to 15,000 acres of public land in Lincoln County for open space and parks **(LR-9)**, 640 acres in Lincoln County by direct sale for a power plant **(LR-23)**, and up to 45,000 acres of public land in White Pine County **(LR-11)** for sale. Of this, a total of 57,977 acres are available for potential disposal in Lincoln County, and 18,453 acres in White Pine County **(LR-20)**. None of the potential disposal areas are in the vicinity of habitat for the Pahrump poolfish or Big Spring spinedace. The disposal of approximately 4,000 acres of land in Pahranagat Valley near the communities of Hiko, Ash Springs, and Alamo may directly or indirectly affect desert tortoise, White River springfish, and southwestern willow flycatcher.

In Table 3, BLM identified approximately 4,870 acres of non-critical desert tortoise habitat for possible disposal. BLM will consider withdrawal of lands with sensitive or high resource values from surface and mineral entry **(LR-31)**. BLM proposes to withdraw the 80-acre area around Ash Springs from settlement, sale, location, or entry (with the exception of a *no surface occupancy* stipulation for fluid mineral leasing) **(LR-33)**.

b. Recreation and Public Purposes Act (R&PP)

BLM may convey or lease public lands only for an established or definitely proposed project for which there is a reasonable timetable of development and satisfactory development and management plans (**LR-19**). Potential acreage of desert tortoise habitat affected by R&PP Act actions is based on the Lincoln County Conservation, Recreation, and Development Act which provides for a maximum of 15,000 acres throughout the entire County. BLM's land use decision(s) in the RMP provide direction on land disposal activities in federally listed species habitat, specifically linking it to acquisition of higher quality habitat. Based on BLM's direction for R&PP Act actions, BLM does not anticipate that R&PP actions will reach the maximum acreage estimate (BLM 2008).

Typically, BLM conducts sales and leases under the R&PP Act for historical monument sites, campgrounds, schools, fire houses, law enforcement facilities, landfills, parks, and fairgrounds (BLM 1996). The Service considers R&PP Act actions similar in scope to other land use authorizations such as rights-of-way, land disposal, and recreation.

c. Corridors

Portions of five corridors identified in the proposed RMP overlap with desert tortoise habitat, designated critical habitat, or desert tortoise ACECs (**LR-34**). Portions of at least one of these corridors may overlap with southwestern willow flycatcher habitat in Pahranagat Valley. BLM proposes to (1) retain a corridor 1,000 feet wide, 500 feet on either side of the centerline of the existing telephone fiber-optic lines, beginning within Township 11 South, Range 71 East, Section 30 running easterly to the Arizona State line; (2) designate the approved Southwest Intertie Project corridor as 0.75 mile wide from the Elko/White Pine County line to the point where it parallels U.S. Highway 93 (US 93) and the Pahranagat National Wildlife Refuge at which point it will be 0.5 mile wide to the Clark County line; (3) maintain the Moapa corridor; (4) maintain the corridors designated by the Lincoln County Conservation, Recreation and Development Act at 0.5 miles wide; and (5) designate a new 0.5 mile wide corridor connecting with the corridor designated by the Lincoln County Conservation, Recreation, and Development Act, beginning near the Atlanta Mine, trending in a northerly direction along the west side of Spring Valley, and ending at the Southwest Intertie Project corridor. Lands and realty actions that could occur within these corridors include but are not limited to powerlines, pipelines, transmission lines, and highways.

d. Land Use Authorizations (communication sites, renewable energy, rights-of-way, permits, leases, and easements)

BLM proposes to authorize communication sites with emphasis on co-location (**LR-35**). Wilderness Study Areas will be avoided for land use authorizations (**LR-36, LR-40**, and **RE-4);** designated wilderness will be excluded (**LR-37**, **LR-41**, and **RE-5**); and ACECs will be avoided or excluded (**LR-38**, **LR-42**, and **RE-6**).

Some material site rights-of-way in ACECs will be authorized under the Federal Highway Aid Act as valid existing claims within 0.5 mile of state and county roads and will be at least 10 miles apart (**LR-44**). Rights-of-way will be situated in corridors within the planning area and rights-of-way in desert tortoise habitat will be managed the same as described for the three desert tortoise ACECs (**LR-45**). Communication sites will not be authorized in critical desert tortoise habitat and disturbance in non-critical desert tortoise habitat are estimated at two communication towers requiring an estimated 10 acres each during the life of the RMP (BLM 2008).

BLM anticipates that a total of 40 acres of riparian habitat may be disturbed as a result of rights-of-way authorizations over the next 10 years (Table 4). No effects from rights-of-way are anticipated for the three listed fishes. The Lower Meadow Valley Wash ACEC will be established as an avoidance area for communication sites, rights-of-way, and renewable energy projects **(LR-38, LR-42, and RE-6)**.

BLM proposes to issue rights-of-way for renewable energy development projects. The issuance of rights-of-way for renewable energy is a discretionary BLM action and will be accomplished in accordance with the decisions in the RMP/Final EIS.

The three desert tortoise ACECs are closed to renewable energy development. Approximately 120 acres of moderate to high potential wind areas occur within designated critical habitat and 2,670 acres in non-critical habitat outside of ACECs. In addition, there are approximately 46,200 acres of designated critical habitat and 348,950 acres of non-critical habitat outside of ACECs that have moderate to high potential solar areas. BLM estimates that approximately 184 acres of long-term surface disturbance may occur within desert tortoise habitat including approximately 18 acres within critical habitat outside of the ACECs (BLM 2008). None of the disturbance is projected to occur within the ACECs. Desert tortoise habitat generally is unsuitable for development of biomass energy facilities.

General Minimization Measures (*Decisions*) *Proposed by BLM for the Lands, Realty, and Renewable Energy Program:*

BLM incorporated management decisions in the RMP/Final EIS to minimize the potential effects to the desert tortoise that may result from implementation of the Lands, Realty, and Renewable Energy Program (BLM 2007a; **LR-49**). Other management decisions under this program that may minimize effects to or benefit the fishes and the flycatcher include **LR-2** (retain lands within ACECs), **LR-5** (retain lands with springs and creeks that contain fisheries in Federal ownership), and **LR-46** (surface disturbances from unauthorized uses will be reclaimed to pre-disturbance conditions, to the extent possible).

6. Travel and OHV Management (Formal: DT, WRSF, SWWF; Informal: BSSD, PAPO)

The management actions for the travel management program are largely administrative. BLM will limit OHV use to designated roads and trails over 10,306,500 acres and close 1,153,500 acres to OHV use. This acreage reflects designated wilderness and Wilderness Study Areas (**TM-9**).

BLM proposes to close designated wilderness to motorized and mechanized travel according to policy and enabling legislation (**TM-1**). BLM will update the Ely District Office Transportation Plan through subsequent implementation-level plans completed

primarily along watershed boundaries **(TM-4)**. Until site-specific implementation plans and route designations are complete, motorized travel will be limited to existing roads and trails except when cross-country travel is needed for safety, required for government (federal, state, and local) administrative needs, as authorized on a permit, for big game retrieval, or as otherwise officially approved. BLM will produce a map depicting the designated roads, primitive roads, and trails available for use. BLM will rehabilitate roads that have been identified through the process as closed to motorized traffic on a case-by-case basis to discourage continued motorized use. In addition, BLM will place signs and barriers and produce public maps and other appropriate forms of education and communication to inform the public of updated route designations.

Comprehensive travel management planning addresses all resource use aspects and accompanying modes and conditions of travel on public lands. Roads on BLM-administered lands are used by permitted users such as miners and livestock operators and by recreationists for dispersed recreation activities such as hunting, fishing, camping, rock-hounding, OHV use, and sightseeing. Access is necessary for BLM personnel to administer the various resource management programs on public land including livestock grazing, mining, wildlife habitat management, watershed management, recreation management, and numerous other programs. Access also is an important factor in fire suppression and fire management.

BLM determined that complexity, incomplete data, and insufficient resources have made it infeasible to complete road and trail network selection and data collection for the RMP planning effort. Data collection will follow a standardized process using appropriate technology to allow staff to record road and trail conditions and characteristics.

Travel and OHV Management in Desert Tortoise Habitat

The Ely District is currently open to cross country travel. BLM will complete designation of vehicle routes within the Ely District **(TM-4)**. Until route designation is completed, motorized travel will be limited to existing roads and trails, with certain exceptions. Management of motorized vehicle use within the three desert tortoise ACECs will include limitation of OHV use to designated roads and trails except within designated wilderness areas, which are closed (approximately 40,160 acres in Mormon Mesa ACEC and 32,365 acres in Kane Springs ACEC). Establishment of new trails will be restricted within the ACECs. Motorized vehicle use within desert tortoise habitat outside the ACECs will be restricted to designated roads and trails (BLM 2008). Approximately 23 miles of roads and trails exist in critical habitat outside the ACECs. Refer to the Recreation Program below for additional proposed OHV management.

As a high-priority management action, BLM will limit motorized vehicle traffic to designated routes within desert tortoise habitat outside of designated wilderness (**TM-5**). BLM will restrict the establishment of new permanent roads and trails in designated desert tortoise [critical] habitat (**TM-6**). Roads and trails will be rerouted where feasible

to improve manageability of desert tortoise habitat (**TM-7**). BLM will coordinate with the Service, Lincoln County Road Department, and the Nevada Department of Transportation to identify roads and trails with high tortoise mortality due to impacts from vehicles. Fences and culverts may be installed along these roads and trails to allow for the safe passage of desert tortoises (**TM-8**).

Travel and OHV Management in Aquatic and Riparian Habitats

Limiting motorized travel to existing or designated routes should reduce the amount of disturbance to vegetation, prevent erosion, and increase soil stability, thereby contributing to habitat improvement for the three fishes and the flycatcher. BLM anticipates that approximately 89 acres of flycatcher habitat may be disturbed by OHV and recreational activities (Table 4.).

7. Recreation (Formal: DT, WRSF, SWWF; Informal: PAPO)

BLM proposes to manage five Special Recreation Management Areas (SRMAs) including the new Pahranagat SRMA (298,500 acres) which overlaps with approximately 35,000 acres of desert tortoise habitat (**REC-2**). None of the SRMAs are expected to affect habitats for the fishes or the flycatcher. BLM will write recreation management plans for each of the SRMAs (**REC-4**). BLM proposes to manage areas not designated as SRMA as extensive recreation management areas (**REC-5**). BLM will manage for recreation facilities and services such as trails, trailheads, staging areas, and associated structures in extensive recreation management areas following activity-level plans and National Environmental Policy Act (NEPA) analysis for the management of designated wilderness, ACECs, the Silver State Off-highway Vehicle Trail, backcountry byways, and where appropriate, for management of recreational impacts to natural and cultural resources (**REC-6**). BLM will develop or construct recreation trails and routes in extensive recreation management areas as future needs are identified in site-specific planning (**REC-7**). BLM will continue to provide visitor orientation information, interpretive activities, signage, safety programs, and other visitor outreach activities (**REC-9**). Motorized vehicle use within desert tortoise habitat will be either closed or limited to designated roads and vehicle trails including areas both within and outside of ACECs.

BLM proposes to issue Special Recreation Permits (SRPs) for OHV events, outfitters and guides, and other recreational activities. OHV permitted activities will be limited to designated routes.

BLM proposes to manage four special recreation permit areas totaling approximately 1.3 million acres to provide opportunities for competitive motorcycle special recreation permit events (**REC-11**). BLM will designate event routes and develop additional minimization measures in subsequent activity level plans (**REC-13**). BLM will manage for a maximum of two competitive truck events each calendar year (**REC-14**); and four

routes for competitive truck events. BLM will limit vehicle off-loading areas to areas of existing disturbance and event size by the number of vehicles that can be involved without expanding the disturbed area (**REC-20**). Routes will be rotated to minimize impacts (**REC-15**). Desert tortoise ACECs will be closed to all high-speed, competitive OHV use (**REC-17)** and all types of organized non-speed, OHV events from March 1 to June 15, and September 1 to October 31 (**REC-18**). BLM will limit non-speed OHV events in desert tortoise ACECs as identified in Table 2.4-13 of the FEIS (**REC-19**). OHV use in the Condor Canyon, Shoshone Ponds, and Lower Meadow Valley Wash ACECs will be limited to designated roads and trails **(SD-3)**.

The Service must concur with any new proposed travel management disturbance in the future through section 7 consultation before BLM could proceed. Closure of the three desert tortoise ACECs to all speed competitive events has eliminated such events from 80 percent of the designated critical desert tortoise habitat in the planning area. Historically, only one competitive event has occurred annually in desert tortoise critical habitat, within the planning area. Approximately 64.4 miles of OHV roads and trails would cross desert tortoise habitat including 13.3 miles within the desert tortoise ACECs, 0.1 mile in critical habitat outside the ACECs, and 51.0 miles in non-critical habitat outside the ACECs.

BLM may permit non-speed organized events to pass through the desert tortoise ACECs on designated routes (22.2 miles within the ACECs), except during periods of higher tortoise activity. BLM may permit non-speed events such as trail rides and commercial sightseeing when consistent with the desert tortoise recovery plan; demand for these types of events historically has been less than one event per year. Table 5 identifies the general limitations proposed by BLM for OHV events in desert tortoise habitat.

Organized OHV events are not anticipated to affect the three listed fishes. One OHV route passes through southwestern willow flycatcher habitat in the Meadow Valley Wash within the city of Caliente. This portion of the route occurs on private land. Upon crossing onto BLM-administered land, the route enters upland areas with no flycatcher habitat.

Table 5. Summary of Limitations for Non-speed OHV Events within Desert Tortoise ACECs[1]

Stipulations	OHV Event Corridors		
	Carp-Elgin, Halfway Wash, and East Halfway Wash	**Littlefield**	**Kane Springs Road**
Dates allowed for events	June 16 – August 31 November 1 – February 28-29	November 1 – February 28-29	June 16 – August 31 November 1 – February 28-29
Maximum number of vehicles	100	300 4-wheeled vehicles or 400 motorcycles	300
Maximum number of laps	1	1	1
Maximum number of events allowed per tortoise ACEC	3	4	4

[1]Subject to change

8. Livestock Grazing Management (Formal: DT, BSSD, PAPO, and SWWF)

The goal of BLM's livestock grazing management program is to manage livestock grazing on public lands to provide for levels consistent with multiple use, sustained yield, and watershed function and health. BLM's rangeland management strategies are supported by the Standards for Rangeland Health and Guidelines for Livestock Grazing for the Mojave/Southern Great Basin and Northeastern Great Basin regions, which were adopted and approved by the Secretary of the Interior in 1997.

Standards for the Mojave/Southern Great Basin Area are:

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

Rangeland health standards are equivalent to *land health standards*. "Health" is expressed by indicators in the Mojave-Southern Great Basin Resource Advisory Council (RAC) standards. Specifically, Habitat Standard 3 states the following:

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 are applied to the potential of the ecological site. Ecological sites are correlated to the soil surveys of the Mojave Desert in Lincoln County. These sites quantify two important indicators: vegetation composition and productivity. These indicators are relevant to habitat for the desert tortoise, Big Spring spinedace, Pahrump poolfish, and southwestern willow flycatcher. If standards are being met, then there should be appropriate habitat composition and structure to accommodate the needs of these species.

BLM will continue to monitor and evaluate allotments to determine if they are continuing to meet or are making significant progress toward meeting the standards for rangeland health **(LG-4)**. Current grazing preference, season-of-use, and kind of livestock will be maintained until the allotments that have not been evaluated are in conformance with the policies **(LG-5)**.

BLM will manage allotments that become vacant for any reason including relinquishment by the permittee, to best meet site-specific and land use planning objectives. Authorized uses may include new grazing permits, forage reserve allotments, dedication to purposes that preclude livestock grazing and others such as offsetting allotments for permittees who are displaced for any reason **(LG-7)**.

Livestock Grazing in Desert Tortoise Habitat

Land within designated desert tortoise ACECs closed to livestock grazing includes approximately 203,670 acres within the Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs **(LG-2)**. Livestock grazing would continue on 19 allotments within desert tortoise habitat outside of the ACECs including 8 allotments on 46,663 acres of the Beaver Dam Slope (BDS) and Mormon Mesa (MM) CHUs **(LG-3)** (Table 6). The RMP/Final EIS proposes no new disturbance as a result of livestock grazing. BLM is not proposing any new or changed direction for livestock grazing in desert tortoise habitat in the RMP/Final EIS.

BLM is in the process of, and will continue to evaluate allotments to determine whether they are meeting or making progress towards achieving rangeland health standards. Allotments or portions of allotments in desert tortoise habitat outside ACECs will be managed according to seasonal utilization limits of 40 percent of annual growth on key forbs, perennial grasses, and shrubs (March 1 to October 31), 50 percent of annual growth on key perennial grasses, and 45 percent of annual growth on key shrubs and perennial forbs (November 1 through February 28/29).

Table 6. Allotments in Desert Tortoise Habitat Available for Livestock Grazing and Current Use

Allotment Name	Approx. Total Allotment Public Acres[1]	Approx. Acres of Critical Habitat (CHU)	Approx. Acres of Non-Critical Habitat	Season of Use (no. months)	Active Animal Unit Months
Boulder Spring	13,537	0	9,736	10/1 to 3/31 (6)	416
Breedlove	89,500	41 (MM)	89,074	3/1 to 2/28 (12)	698
Buckhorn	82,968	0	2,544	3/1 to 2/28 (12)	3,370
Delamar	203,000	8,451 (MM)	30,494	3/1 to 2/28 (12)	5,558
Garden Springs	38,823	0	22,212	10/1 to 5/31 (8)	2,809
Gourd Spring	57,700	3,034 (MM,BDS)	50,908	10/1 to 5/31 (8)	3,458
Grapevine	22,000	1,299 (MM)	18,697	3/1 to 2/28 (12)	349
Henrie Complex	165,060	0	87,225	11/1 to 4/30 (6)	1,380
Lime Mountain	67,144	0	2,786	10/1 to 5/15 (7.5)	6,754
Lower Lake East	41,800	2,504 (MM)	27,353	3/1 to 2/28 (12)	640
Lower Lake West	57,000	0	5,553	3/1 to 2/28 (12)	1,247
Lower Riggs	19,569	0	125	5/1 to 3/24 (<11)	1,408
Mormon Peak	64,700	67 (MM)	12,892	6/1 to 3/31 (10)	600
Pahranagat East	34,146	0	11,401	8/1 to 5/31 (10)	511
Pahranagat West	70,138	0	12,005	10/1 to 5/31 (8)	2,144
Snow Springs	44,042	6,499 (BDS)	37,507	10/1 to 5/15 (7.5)	3,567
Summit Spring	18,035	2,738 (BDS)	14,257	10/1 to 5/31 (8)	715
Terry[2]	30,163	22,030 (BDS)	8,492	11/1 to 5/31 (7)	1,511
White Rock	32,916	0	24,725	10/1 to 5/31 (8)	2,880
TOTALS	1,152,241	46,663	467,986		40,015

[1] Not including allotment acreage unavailable for grazing within desert tortoise ACECs.
[2] Allotment administered by St. George Field Office.

Livestock Grazing in Big Spring Spinedace, Pahrump Poolfish, and Southwestern Willow Flycatcher Habitat

Four livestock grazing allotments overlap Big Spring spinedace habitat in the Condor Canyon area (Highland Peak, Black Hills, Condor Canyon, and N4/N5). Of these allotments, data for evaluating rangeland health standards has been collected only for N4/N5. However, the evaluation has not been completed. N4/N5 is 43,500 acres in size, and is grazed year-long at an assigned use level of 825 AUMs. Black Hills is 3,610 acres in size, and is grazed year-long at an assigned use level of 156 AUMs. Condor Canyon is 44,035 acres in size and is grazed from March 1 to January 24 at an assigned use level of

676 AUMs. Highland Peak is 45,542 acres in size, and is grazed from October 16 to May 15 at an assigned use level of 3,704 AUMs.

One livestock grazing allotment overlaps with Pahrump poolfish habitat. Scotty Meadows allotment is 17,322 acres in size, and is grazed from June 1 to September 30 at an assigned use level of 1,227 AUM. This allotment has not yet been evaluated for meeting rangeland health standards.

Table 7 lists the livestock grazing allotments that overlap with flycatcher habitat along the Meadow Valley Wash. Of these allotments, data for evaluating rangeland health standards has been collected for the Cottonwood, Henrie Complex, and Schlarman allotments; however the evaluation has not been completed.

Table 7. Livestock grazing allotments that overlap southwestern willow flycatcher habitat along the Meadow Valley Wash

Allotment Name	Approx. Acres of Affected Habitat on Public Lands	Season of Use	Active Animal Unit Months
Applewhite	120	Yearlong	562
Ash Flat	187	May 1 to Mar 24	74
Breedlove	209	Yearlong	698
Caliente	1	Yearlong	40
Cottonwood	11	May 1 to Oct 31	1,296
Henrie Complex	587	Nov 1 to Apr 30	1,373
Meadow Valley	135	Cattle Nov 1 to Apr 30 Horses Yearlong	56
Oak Springs	139	Yearlong	9,268
Peck	7	Yearlong	397
Pennsylvania	97	May 1 to Oct 31	588
Rainbow	7	Yearlong	665
Rox-Tule	98	Closed	0
Schlarman	105	Nov 1 to Apr 30	240

BLM proposes measures to minimize the potential effects to listed species that may result from implementation of the Livestock Grazing Management Program (BLM 2007a). Within approximately 2 years from the date of this biological opinion, BLM will conduct assessments of all grazing allotments and will propose to issue term livestock grazing permits. During these assessments, BLM and the Service will consult on the proposed grazing program at the allotment level. Issuance of term permits will require BLM to append those actions to this biological opinion and additional measures may apply.

Minimization Measures (*Decisions*) *Proposed by BLM for the Livestock Grazing Program:*

BLM proposes to monitor and evaluate allotments (**LG-4**) and include the option of retiring vacant allotments (**LG-7**). Management decision **LG-8** provides measures that would further minimize potential effects to listed species which include: restrict vehicle use to existing roads and trails; move tortoises out of harm's way; prohibit use of hay or grains as feeding supplement; conduct regular site visits to each allotment; adjust livestock levels in response to negative events or conditions; and require the permittee to remove straying livestock.

9. Geology and Mineral Extraction (Formal: DT, SWWF; Informal: BSSD)

Leasable minerals are those minerals on public lands where the land is leased to individuals for their exploration and development. The leasable minerals have been subdivided into two classes, *fluid* and *solid*. Fluid minerals include oil and gas; geothermal resources and associated by-products; and oil shale, native asphalt, oil impregnated sands, and any other material in which oil is recoverable only by special treatment after the deposit is mined or quarried. Solid leasable minerals include specific minerals such as coal and phosphates.

Geothermal development potential is moderate in the valley areas and low in the mountain areas. The moderate potential areas cover about 49 percent of the planning area. As of March 2004, the geothermal leasehold in the planning area is approximately 1,000 acres in a single lease. Geothermal leasing in the future is not expected to greatly increase in the short-term, but potential exists for a variety of low-temperature geothermal uses.

a. Fluid Leaseable Minerals

The proposed action for fluid mineral development potential in the planning area is based on reasonable foreseeable development scenarios for oil and gas and geothermal energy. Fluid mineral exploration and development could occur throughout the Mormon Mesa and Beaver Dam Slope ACECs, outside designated wilderness areas. Future oil and gas activity within ACECs will be managed as no surface occupancy. Existing oil and gas leases cover approximately 34,580 acres within the Beaver Dam Slope ACEC and 9,625 acres within the Mormon Mesa ACEC (BLM 2008). New lease areas will be managed as "no surface occupancy." Wildcat wells (exploratory oil wells drilled on lands of unknown potential) and an estimated one oil or gas field could occur during the life of the RMP. No habitat disturbance from seismic activities would occur within ACECs, since these activities will be restricted to existing roads and trails. Outside ACECs, existing leases cover approximately 28,740 acres in desert tortoise critical habitat and 43,422 acres of non-critical habitat. Habitat disturbance associated with fluid mineral activities

outside the ACECs would take place in three phases: exploration, well drilling, and oil field production.

This consultation is based on BLM's expectation that one wildcat well per year could occur during the life of the Ely RMP and disturb up to 5 acres and one oil and gas field could occur disturbing up to 500 acres outside desert tortoise critical habitat and sensitive habitat for other listed species.

The Condor Canyon ACEC will be either closed to leasable development or restricted to no surface occupancy. The Shoshone Ponds and Lower Meadow Valley Wash ACECs will be restricted to no surface occupancy. BLM is proposing to withdraw 80 acres adjacent to Ash Springs from all forms of mineral and agricultural entry, which will restrict fluid minerals development to no surface occupancy.

b. Solid Leasable Minerals

All three desert tortoise ACECs will be closed to solid mineral leasing (BLM 2008). Some areas within non-critical desert tortoise habitat outside of the ACECs will remain open to leasing subject to stipulations, conditions, and measures developed through project-level section 7 consultation. However, based on the low potential for solid leasable minerals, BLM considers development unlikely. There is a small probability that solid leasable minerals are present in commercially-exploitable deposits. Any solid leasable actions proposed by BLM that would result in adverse effects to listed species will require some level of modification to this programmatic consultation to include such actions.

The Condor Canyon ACEC will be either closed to leasable development or restricted to no surface occupancy. The Shoshone Ponds and Lower Meadow Valley Wash ACECs will be restricted to no surface occupancy. BLM is proposing to withdraw 80 acres adjacent to Ash Springs from all forms of mineral entry, which will close the area to solid leasable development.

c. Locatable Minerals

Surface mining is expected to remain the primary method of locatable mineral resource extraction in the planning area. Underground methods would be used to mine deeper deposits. New ore bodies would continue to be developed to replace reserves as they are mined out through both the discovery and development of new mines and expansions of existing mines. Total disturbance from locatable mining development associated with the above operations would be approximately 7,500 acres or 0.07 percent of the planning area. Reclamation of post-mining disturbance areas will be required under both Federal and State regulations.

This consultation is based on BLM's expectation that the following actions for locatable mineral may occur during the next 20 years.

- One large open-pit mine will be developed or undergo a major expansion. A large open-pit mine often consists of either one large pit or a number of smaller pits in close proximity to one another. The mine may encompass about 3,000 acres.
- Three medium-sized open-pit mines will be developed or undergo moderate expansion. The mines will consist of pits, waste rock piles, processing facilities, roads, exploration drill pads, and operations facilities. Each medium-sized open-pit mine will disturb about 700 acres resulting in a total disturbance of 2,100 acres.
- Six small mines will be developed or undergo minor expansion. Each mine will consist of small pits, waste rock piles, processing facilities, roads, exploration drill pads, and operations facilities covering up to 400 acres and total disturbance of up to 2,400 acres.
- BLM anticipates that exploration will continue at a rate of from 8 to 10 activities per year, for all types of locatable minerals within the entire planning area. The operations will consist of small exploration projects that could disturb an estimated 5 acres per project.
- Exploration and mineral developments may occur throughout the proposed Mormon Mesa and Beaver Dam Slope ACECs on valid existing claims and outside designated wilderness areas. Less than 10 acres of authorized mining plans and notices exist within the Mormon Mesa and Beaver Dam Slope ACECs. Disturbance could include approximately 70 acres within the Mormon Mesa ACEC and approximately 24 acres within the Beaver Dam Slope ACEC.

Outside ACECs, the impacts described above for locatable minerals could occur within desert tortoise habitat during exploration under notices for disturbances less than 5 acres. BLM estimates that disturbance could include approximately 32 acres within critical habitat outside ACECs.

The Condor Canyon, Shoshone Ponds, and Lower Meadow Valley Wash ACECs are proposed for withdrawal for locatable minerals development. BLM is proposing to withdraw 80 acres adjacent to Ash Springs from all forms of mineral and agricultural entry, which will also close this area to locatable minerals development.

d. Mineral Materials (Salable Minerals)

The demand for mineral materials, such as sand, gravel, and decorative rock is expected to increase as a result of growth in the planning area and Clark County. In spite of the long haulage distances, mineral materials from the planning area will be competitive with

sources closer to Las Vegas. In the near term, the most likely areas to have development of mineral material deposits will be in southern Lincoln County and the larger rural communities. The Nevada Department of Transportation (NDOT) will continue to mine gravel resources for road maintenance and construction. Additional community pits will be developed for the needs of expanding local communities. Current development of mineral materials is estimated at approximately 2,200 acres in approximately 400 existing pits. Projected additional development during the next 10 years is estimated at 1,000 acres.

The Lincoln County Road Department may need three new material pits along the Kane Springs and Carp-Elgin roads. These material sites must be at least 10 miles apart. The majority of the required mineral material pits will be located along US 93; the NDOT will continue to operate 14 material site rights-of-way (4 within the ACECs and 10 in desert tortoise habitat outside the ACECs), with the possibility of 3 more being developed (1 within and 2 outside the ACECs).

In addition to material pits required by Lincoln County, BLM estimates that one new pit will be established outside ACECs, every 2 to 5 years to meet demand. Each pit would result in 20 to 80 acres of disturbance within desert tortoise habitat over the life of the plan. Between free-use permits and NDOT rights-of-way there, BLM anticipates an additional long-term disturbance of approximately 500 acres of desert tortoise habitat during the life of the plan. Up to 120 acres of additional habitat loss could occur from these pits within the proposed ACECs, primarily within critical habitat, and up to approximately 380 acres in desert tortoise habitat outside the ACECs, primarily in non-critical habitat.

Federal Highway material site rights-of-way will be restricted to a 1-mile-wide corridor along US 93 and Kane Springs Road within the Kane Spring ACEC, and the Carp-Elgin Road within the Mormon Mesa ACEC. The majority of the required mineral material pits would be located along US 93; NDOT will continue to operate their existing material site rights-of-way. The Lincoln County Road Department also may have the need for additional free use pits along the Kane Springs and Carp-Elgin roads. However, material sites will be restricted to not less than 10-mile separations. Over the next 10 years, BLM estimates that no more than 500 acres of additional desert tortoise habitat loss will occur as a result of these pits, primarily in non-critical habitat outside of the ACECs.

The Condor Canyon and Shoshone Ponds ACECs will be closed to mineral materials development. The Lower Meadow Valley Wash ACEC will be open to mineral materials development with special stipulations, which will include controlled surface use, seasonal timing restrictions, restricted or no uses in avoidance areas (*e.g.*, riparian areas, live water, areas with special wildlife or plant features, and sensitive view sheds), additional NEPA analysis, and project-level section 7 consultation. BLM is proposing to withdraw 80 acres adjacent to Ash Springs from all forms of mineral entry, which will close this area to mineral materials development. BLM anticipates that a total of 30 acres of

flycatcher habitat may be disturbed or removed as a result of mineral extraction activities (Table 4).

General Minimization Measures (Decisions) Proposed by BLM for the Geology and Mineral Extraction Program:

BLM decision **MIN-1** will restrict exploration to existing roads and trails; contain drilling fluids; avoid impacts to tortoise burrows that may result from vibriosis and drill hole or surface shots; and require conservation fees. Decision **MIN-3** imposes timing restrictions. Decision **MIN-6** applies a no surface occupancy restriction for fluid mineral leasing within the proposed Ash Springs withdrawal and the Beaver Dam Slope, Mormon Mesa, Condor Canyon, Lower Meadow Valley Wash, and Shoshone Ponds ACECs, Decision **MIN-7** closes Kane Spring ACEC, Condor Canyon ACEC, and 6,200 acres of leased public lands in Coyote Spring Valley to fluid mineral leasing, and **MIN-9** applies special management actions for leasing within desert tortoise habitat, including timing stipulations. Decision **MIN-12** closes the Ash Springs proposed withdrawal area; the Coyote Springs leased public lands; and all ACECs established for tortoise, Big Spring spinedace, Pahrump poolfish, and flycatcher to solid leasable, locatable, and mineral materials extraction, with exceptions and special stipulations. Decision **MIN-13** closes all three desert tortoise ACECs to solid mineral leasing. Decisions **MIN-16** and **MIN-21** impose closures of the three desert tortoise ACECs to locatable minerals and mineral materials disposals (with exceptions).

10. *Fire Management (Formal: DT, BSSD, WRSF, PAPO, SWWF)*

Fire management will involve fuels management, fire suppression, and emergency stabilization and rehabilitation. In general, fuels management would result in a more widespread treatment in upland areas to prevent heavy fuel accumulation in comparison to current management and achieve vegetation goals. Treatment will include prescribed fire, wildland fire management, mechanical thinning, and herbicide application.

Management actions for fire suppression will be initiated on wildland fires. Activities associated with fire suppression could include the removal of vegetation with hand tools, burning out, bulldozers, and other heavy equipment; water removal by engines, portable pumps, or helicopter; and water and fire retardant drops from helicopters and air tankers. In general, these types of activities will be avoided except during suppression.

Following fire, the burned areas will be stabilized and rehabilitated through treatment actions that could include seedbed preparation (if necessary), seeding, and erosion control measures including water bars, contour furrows, and mulching.

Minimization Measures (*Decisions*) *Proposed by BLM for the Fire Management Program:* BLM's decision **FM-3** provides for emergency stabilization and rehabilitation following a wildfire. Specific measures to minimize impacts to the desert tortoise are in

decision **FM-7** which include: initiate full-suppression activities; assign a resource advisor to inform fire crews about the desert tortoise; do not burn unburned fingers or islands of vegetation; use previously disturbed areas where possible; restrict off-road travel to the minimal extent necessary; brief firefighters and support staff on the desert tortoise; control vehicular speeds as appropriate; rehabilitate habitat damaged by fire suppression activities; and locate tortoise mortalities post-fire

11. Special Designations (Areas of Critical Environmental Concern)

BLM is proposing to continue management of the Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs primarily for the recovery of the desert tortoise **(SD-1)**. These three ACECs encompass approximately 203,670 acres of desert tortoise habitat, most of which is designated critical habitat. These three ACECs were previously designated through the Approved Caliente MFP Amendment and Record of Decision for the Management of Desert Tortoise Habitat and corresponding biological opinion (Service File No. 1-5-99-F-450). Table 8 lists the management activities and associated management prescriptions for each of these ACECs.

Table 8. Management activities and prescriptions for desert tortoise ACECs[1]

	Management Prescriptions		
Management Activities	Beaver Dam Slope 36,800 acres	Kane Springs 57,190 acres	Mormon Mesa 109,680 acres
Land Use Authorization	Limited[2]/Avoidance Area[3]	Limited[2]/Avodance[3]/Exclusion Area	Limited[2]/Avoidance[3]/Exclusion Area
OHV Use	Closed/Limited[4]	Closed/Limited[4]	Closed/Limited[4]
Visual Resource Mgt Class	IV	I, II, III, IV	I, II, III, IV
Plant Collecting	Limited[5]	Limited[5]	Limited[5]
Road Maintenance	Limited[6]	Limited[6]	Limited[6]
Leasable Minerals	No Surface Occupancy with Exception[7]	Closed	No Surface Occupancy with Exception[7]
Locatable Minerals	Closed[8]	Closed[8]	Closed[8]
Mineral Materials	Closed	Limited[11]	Limited[11]
Land Disposals	No Disposal	No Disposal	No Disposal
Fire Management	Limited[9]	Limited[9]	Limited[9]
Transportation	Limited	Limited	Limited
Livestock Mgt	Unavailable	Unavailable	Unavailable
Fuelwood Cutting	Not Applicable	Not Applicable	Not Applicable
Renewable Energy	Closed[10]	Closed[10]	Closed[10]

1 Acres within the existing Beaver Dam Slope, Kane Springs, and Mormon Mesa ACECs are those within the planning area.

2 Rights-of-way: Authorization of future communication sites limited to existing established rights-of-way unless technically unfeasible; use of existing corridors for all future rights-of-way encouraged when possible.

3 Avoidance: Rights-of-way (surface, subsurface, aerial) within the area should be avoided, but may be granted if there is minimal conflict with identified resource values and impacts can be mitigated.

4 Off-highway vehicle use will be limited to designated roads and trails. Areas within ACECs designated as wilderness will be closed to off-highway vehicle use.

5 Plant materials, including common species, may be collected by permit only.

[6] Road maintenance will be limited to the designated roadway; shoulder barrow/ditch construction will be limited to only that necessary to ensure public safety and serviceability of the road.
[7] Exception requires a no adverse impact conclusion, with Service concurrence.
[8] Subject to exception for existing valid claims.
[9] Limits could be placed on fire management activities.
[10] Closed to renewable energy facilities; avoidance area for ancillary rights-of-way for access roads, transmission lines, and pipelines.
[11] Closed except for free use permits and federal highway material site rights-of-way within a 1-mile corridor, 0.5 mile on each side of road on three designated roads with spacing of at least 10 miles between adjacent sites.

BLM is proposing to designate 17 new ACECs, 3 of which will benefit the Big Spring spinedace, Pahrump poolfish, and southwestern willow flycatcher. Table 9 lists the management actions and associated management prescriptions for these three ACECs.

Table 9. Management activities and associated prescriptions for the Condor Canyon, Shoshone Ponds, and Lower Meadow Valley Wash Areas of Critical Environmental Concern.

	Management Prescriptions		
Management Activities	Condor Canyon 4,500 acres	Shoshone Ponds 1,240 acres	Lower Meadow Valley Wash 25,000 acres
Land Use Authorizations	Avoidance Area[1]	Exclusion Area; rights-of-way will not be granted within the area	Avoidance Area[1]
OHV Use	Limited[2]	Limited[2]	Limited[2]
Visual Resource Mgt Class	II, III	III	II, III, IV
Plant Collecting	Limited[3]	Closed	Closed
Road Maintenance	Limited[4]	Limited[4]	Limited[4]
Leasable Minerals	No Surface Occupancy/Closed	No Surface Occupancy	No Surface Occupancy
Locatable Minerals	Closed	Closed	Closed
Mineral Materials	Closed	Closed	Open[10]
Land Disposals	No Disposal	No Disposals	No Disposals
Fire Management	Limited[8]	Limited[8]	Limited[8]
Transportation	No New Roads	Limited	No New Roads
Livestock Mgt	Available[7]	Available[7]	Available[7]
Fuelwood Cutting	Open[5]	Closed	Closed
Renewable Energy	Closed[6]	Closed[6]	Closed[6]

[1] Avoidance area; granting rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with identified resource values and impacts can be mitigated.
[2] Off-highway vehicle use would be limited to designated roads and trails.
[3] Plant materials, including common species, may be collected by permit only.
[4] Road maintenance will be limited to the designated roadway; shoulder barrow/ditch construction will be limited to only that necessary to ensure public safety and serviceability of the road.
[5] The activity is allowed in the area. NEPA compliance and clearances for cultural resources and threatened and endangered species required for some activities.
[6] Closed to renewable energy facilities; avoidance area for ancillary rights-of-way for access roads, transmission lines, and pipelines.
[7] Livestock grazing will be controlled through terms and conditions on the grazing permit.
[8] Limits could be placed on fire management activities.

9 Open with special stipulations. Open to mineral material activities subject to controlled surface use, seasonal timing restrictions, restricted or no uses in avoidance areas (e.g., riparian areas, live water, areas with special wildlife or plant features, and sensitive view sheds), additional NEPA analysis and project-specific section 7 consultation.

D. Status of the Species/Critical Habitat- Rangewide

1. Desert Tortoise - Rangewide Status

a. Listing History

On August 20, 1980, the Service published a final rule listing the Beaver Dam Slope population of the desert tortoise in Utah as threatened (45 FR 55654). In the 1980 listing of the Beaver Dam Slope population, the Service concurrently designated 26 square miles of BLM-administered land in Utah as critical habitat. The reason for listing was population declines because of habitat deterioration and past over-collection. Major threats to the tortoise identified in the rule included habitat destruction through development, overgrazing, and geothermal development; collection for pets, malicious killing, road kills, and competition with grazing or feral animals.

On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 FR 42270). On April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 FR 12178). Reasons for the determination included significant population declines, loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture. Livestock grazing and off-highway vehicle (OHV) activity have degraded additional habitat. Also cited as threatening the desert tortoise's continuing existence were illegal collection by humans for pets or consumption, upper respiratory tract disease (URTD), predation on juvenile desert tortoises by common ravens, coyotes (*Canis latrans*), and kit foxes (*Vulpes macrotis*), fire, and collisions with vehicles on paved and unpaved roads.

On February 8, 1994, the Service designated approximately 6.45 million acres of critical habitat for the Mojave population of the desert tortoise in portions of California (4.75 million acres), Nevada (1.22 million acres), Arizona (339 thousand acres), and Utah (129 thousand acres) (59 FR 5820-5846, also see corrections in 59 FR 9032-9036), which became effective on March 10, 1994.

b. Species Account

The desert tortoise is a large, herbivorous reptile found in portions of California, Arizona, Nevada, and Utah. It also occurs in Sonora and Sinaloa, Mexico. The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Sonoran Desert in California.

Desert tortoises reach 8 to 15 inches in carapace length and 4 to 6 inches in shell height. Hatchlings emerge from the eggs at about 2 inches in length. Adults have a domed carapace and relatively flat, unhinged plastron. Their shells are high-domed, and greenish-tan to dark brown in color with tan scute centers. Desert tortoises weigh 8 to 15 pounds when fully grown. The forelimbs have heavy, claw-like scales and are flattened for digging. Hind limbs are more stumpy and elephantine.

Optimal habitat for the desert tortoise has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, where a diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner 1982, Turner and Brown 1982). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. Desert tortoises occur from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982).

Desert tortoises are most commonly found within the desert scrub vegetation type, primarily in creosote bush scrub. In addition, they occur in succulent scrub, cheesebush scrub, blackbrush scrub, hopsage scrub, shadscale scrub, microphyll woodland, Mojave saltbush-allscale scrub and scrub-steppe vegetation types of the desert and semidesert grassland complex (Service 1994). Within these vegetation types, desert tortoises potentially can survive and reproduce where their basic habitat requirements are met. These requirements include a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter (Appendix B); and adequate area for movement, dispersal, and gene flow. Throughout most of the Mojave Region, tortoises occur most commonly on gently sloping terrain with soils ranging from sandy-gravel and with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Throughout their range, however, tortoises can be found in steeper, rockier areas (Gardner and Brodie 2000).

The size of desert tortoise home ranges varies with respect to location and year. Tortoise activities are concentrated in overlapping core areas, known as home ranges. Because tortoises do not defend a specific, exclusive area, they do not maintain territories. In the West Mojave Desert, Harless *et al* (2007) estimated mean home ranges for male desert tortoises to be 111 acres and 40 acres for females. Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and make forays of more than 7 miles

at a time (Berry 1986). In drought years, the ability of tortoises to drink while surface water is available following rains may be crucial for tortoise survival. During droughts, tortoises forage over larger areas, increasing the likelihood of encounters with sources of injury or mortality including humans and other predators.
Desert tortoises are most active during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rainstorms. Desert tortoises spend most of the remainder of the year in burrows, escaping the extreme conditions of the desert. However, desert tortoises may be aboveground any month of the year. In Nevada and Arizona, tortoises are considered to be most active from approximately March 1 through October 31.

Tortoise activity patterns are primarily controlled by ambient temperature and precipitation (Nagy and Medica 1986, Zimmerman *et al*. 1994). Desert tortoises are active for approximately 6 weeks to 5 months of the year, depending on annual variations of temperature and rainfall. Deserts are characterized by prolonged periods of barely measurable rainfall. In much of the winter-rainfall Mojave Desert, droughts of 8 months or more occur regularly. At such times, the desert is virtually devoid of food for tortoises except for cacti and dried grasses (Oftedal 2002). In the East Mojave and Colorado Deserts, annual precipitation occurs in both summer and winter, providing food and water to tortoises throughout much of the summer and fall. Most precipitation occurs in winter in the West Mojave Desert resulting in an abundance of annual spring vegetation, which dries up by late May or June. Tortoises in the West Mojave are primarily active in May and June, with a secondary activity period from September through October.

Tortoises may also be active during periods of mild or rainy weather in summer and winter. During inactive periods, tortoises rest in subterranean burrows or caliche caves, and spend approximately 98 percent of the time in these shelter sites (Nagy and Medica 1986). During active periods, they usually spend nights and the hotter part of the day in their burrow; they may also rest under shrubs or in shallow burrows (pallets). Tortoises may use an average of 7 to 12 burrows at any given time (Bulova 1994, TRW Environmental Safety Systems Inc.1997).

Walde *et al* (2003) observed that desert tortoises retreated into burrows when air temperature reached 91.0˚ F ± 3.55˚ F and ground temperatures reached 94.6˚ F ± 6.05˚ F; 95 percent of desert tortoise observations of desert tortoises above ground occurred at air temperature less than 91˚ F. The body temperature at which desert tortoises become incapacitated ranges from 101.5˚ F to 113.2˚ F (Naegle 1976, Zimmerman *et al.* 1994).

Desert tortoise research in the Mojave Desert has identified nutritional constraints that may limit utilization of potential food plants. The kidney structure of the desert tortoise cannot concentrate electrolytes such as potassium as does the mammalian kidney (Maloiy 1979). Thus, the desert tortoise must rely on urine to excrete potassium resulting in more water loss in urine than it obtains in its food (Oftedal 2002). Tortoises produce uric acid

as a normal end product of protein metabolism. However, when tortoises ingest high levels of potassium without an increase in protein intake, both the amounts of urate precipitated in the bladder and the concentration of potassium in these precipitates increase (Oftedal 2003). Because urates contain approximately 30 percent nitrogen, a critical side effect of urate production is the removal of nitrogen from the body.

The amount of nitrogen excreted in urates increase dramatically as dietary potassium levels increase, with the net effect that animals on high potassium intake cannot retain nitrogen for growth even though the protein level is high. The amount of potassium that could potentially be excreted, potassium excretion potential (PEP), can be estimated based on the amount of water and nitrogen in the food, compared with the amount of potassium in the food (Oftedal 2002). A positive PEP index indicates there is more water and nitrogen in the food than is needed to excrete potassium whereas a negative PEP index indicates there is insufficient water and nitrogen in the food to excrete the potassium. Physiological responses of desert plants to low soil moisture appear to result in plants with a low PEP index that are poor food for tortoises. If high PEP index plants only germinate and grow in wet years, selective foraging by desert tortoises during these times may provide the greatest nutrition. Thus, nutritional status of wild tortoises may depend more on availability of plant species of high nutritional quality than on overall amounts of annual vegetation (Oftedal 2002).

Although desert tortoises eat alien plants, they generally prefer native forbs when available (Jennings 1993, Avery 1998). Consumption of alien plants may place them at a nitrogen and water deficit (Henen 1997). Droughts frequently occur in the desert, resulting in extended periods of low water availability. Periods of extended drought place tortoises at even greater water and nitrogen deficit than during moderate or high rainfall years (Peterson 1996, Henen 1997). During a drought, more nitrogen than normal is required to excrete nitrogenous wastes, thus more rapidly depleting nitrogen stored in body tissues. Plants also play important roles in stabilizing soil and providing cover for protection from predators and heat.

Tortoises primarily eat annual herbs in the spring and switch to grasses, perennial succulents (cacti), and dried annuals later in spring and early summer (Avery 1998). Succulent green forage of spring is essential to the growth, reproduction, and survivorship of the desert tortoise. Growth of individual tortoises is directly correlated to the amount and quality of forage available in any given spring. The size and number of egg clutches correlates with the quality and quantity of the spring diet. If spring forage is not available, the opportunity for the tortoise to meet its nutritional needs cannot be met until the next year. Important forage species for the desert tortoise can be found in Appendix B.

Further information on the range, biology, and ecology of the desert tortoise can be found in Berry and Burge (1984), Brooks *et al.* 2003, Burge (1978), Burge and Bradley (1976), Bury *et al*. (1994), Gardner and Brodie 2000; Germano *et al*. (1994), Hovik and

Hardenbrook (1989), Jennings (1997), Karl (1981, 1983a, 1983b), Luckenbach (1982), Oftedal 2002; Service (1994), Tracy *et al.* 2004; and Weinstein *et al*. (1987).

c. Recovery Plan

On June 28, 1994, the Service approved the final Desert Tortoise (Mojave Population) Recovery Plan (Recovery Plan) (Service 1994). The Recovery Plan divides the range of the desert tortoise into 6 recovery units and recommends establishment of 14 desert wildlife management areas (DWMAs) throughout the recovery units. Within each DWMA, the Recovery Plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of DWMAs should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, the Recovery Plan recommends that land management within all DWMAs should restrict human activities that negatively impact desert tortoises (Service 1994). The DWMAs/areas of critical environmental concern (ACECs) have been designated by BLM through development or modification of their land-use plans in Arizona, Nevada, Utah, and parts of California.

The U.S. General Accounting Office (GAO) Report, *Endangered Species: Research Strategy and Long-Term Monitoring Needed for the Mojave Desert Tortoise Recovery Program* (GAO 2002), directed the Service to periodically reassess the Recovery Plan to determine whether scientific information developed since its publication could alter implementation actions or allay some of the uncertainties about its recommendations. In response to the GAO report, the Service initiated a review of the existing Recovery Plan in 2003. In March 2003, the Service impaneled the Desert Tortoise Recovery Plan Assessment Committee (Committee) to assess the Recovery Plan. The Committee was selected to represent several important characteristics with particular emphasis on commitment to solid science. The charge to the Committee was to review the entire Recovery Plan in relation to contemporary knowledge to determine which parts of the recovery plan will need updating. The recommendations of the Committee were presented to the Service and Desert Tortoise Management Oversight Group on March 24, 2004 (Tracy *et al.* 2004). The recommendations will be used as a guide by a recovery team of scientists and stakeholders to modify the Recovery Plan.

The Committee recognized that the distribution and abundance data indicate trends leading away from recovery goals in some parts of the species' range. These results indicate a need for more aggressive efforts to facilitate recovery. Many of the original prescriptions of the Recovery Plan were never implemented although these prescriptions continue to be appropriate. New prescriptions should be prioritized to assess redundancies and synergies within individual threats.

Federal, State, and local agencies and non-governmental organizations have undertaken numerous activities to attempt to recover the desert tortoise. Agencies and others have

modified grazing procedures, retired livestock allotments, fenced highways, removed burros, and restored disturbed habitat, among other activities in an attempt to recover the desert tortoise. The extent that these efforts will benefit the desert tortoise will be difficult to measure because of the slow reproductive rate of the species and other factors, such as disease, drought, and predation that may be affecting the number of individuals in a region.

On November 3, 2004, the Service announced the formation of the Desert Tortoise Recovery Office (DTRO) and plans to coordinate with regional recovery implementation work groups to develop 5-year recovery action plans as the basis for revising the 1994 recovery plan. A draft revision of the Recovery Plan is anticipated for release to the public in 2008.

d. Recovery Units

The **Northeastern Mojave Recovery Unit** occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this recovery unit, the northern portion of which represents the northernmost distribution of the species, are typically found in low densities (about 10 to 20 adults per square mile).

The Northeastern Mojave Recovery Unit includes the Mormon Mesa, Coyote Spring, Piute-Eldorado DWMAs; and a portion of the Beaver Dam Slope and Gold Butte-Pakoon DWMAs. These areas generally overlap the Mormon Mesa, Piute-Eldorado, Beaver Dam Slope, and Gold Butte-Pakoon critical habitat units.

The **Eastern Mojave Recovery Unit** is situated primarily in California, but also extends into Nevada in the Amargosa, Pahrump, and Piute valleys. In the Eastern Mojave Recovery Unit, desert tortoises are often active in late summer and early autumn in addition to spring because this region receives both winter and summer rains and supports two distinct annual floras on which they can feed. Desert tortoises in the Eastern Mojave Recovery Unit occupy a variety of vegetation types and feed on summer and winter annuals, cacti, perennial grasses, and herbaceous perennials. They den singly in caliche caves, bajadas, and washes. This recovery unit is isolated from the Western Mojave Recovery Unit by the Baker Sink, a low-elevation, extremely hot and arid strip that extends from Death Valley to Bristol Dry Lake. The Baker Sink area is generally not considered suitable for desert tortoises. Desert tortoise densities in the Eastern Mojave

Recovery Unit can vary dramatically, ranging from 5 to as much as 350 adults per square mile (Service 1994).

The Ivanpah, Piute-Eldorado, and Fenner DWMAs are included in the Eastern Mojave Recovery Unit which generally overlaps the Ivanpah and Piute-Eldorado critical habitat units in California.

The **Northern Colorado Recovery Unit** is located completely in California. The 874,843-acre Chemehuevi DWMA is the sole conservation area for the desert tortoise in this recovery unit. Desert tortoises in this recovery unit are found in the valleys, on bajadas and desert pavements, and to a lesser extent in the broad, well-developed washes. They feed on both summer and winter annuals and den singly in burrows under shrubs, in intershrub spaces, and rarely in washes. The climate is somewhat warmer than in other recovery units, with only 2 to 12 freezing days per year. The tortoises have the California mitochondrial DNA (mtDNA) haplotype and phenotype. Allozyme frequencies differ significantly between this recovery unit and the Western Mojave, indicating some degree of reproductive isolation between the two.

The **Eastern Colorado Recovery Unit is** also located completely in California. The Chuckwalla DWMA and critical habitat unit; and a portion of the Joshua Tree DWMA and Pinto Basin critical habitat unit occur in this recovery unit. This recovery unit occupies well-developed washes, desert pavements, piedmonts, and rocky slopes characterized by relatively species-rich succulent scrub, creosote bush scrub, and Blue Palo Verde-Ironwood-Smoke Tree communities. Winter burrows are generally shorter in length, and activity periods are longer than elsewhere due to mild winters and substantial summer precipitation. The tortoises feed on summer and winter annuals and some cacti; they den singly. They also have the California mtDNA haplotype and shell type.

Approximately 187,046 acres of critical habitat unit lie within the Chocolate Mountains Aerial Gunnery Range. The Marine Corps primarily uses the Chocolate Mountains Aerial Gunnery Range to support target sites for aircraft and, to a lesser degree, ground-based artillery; maintenance of the targets is the other primary activity in this area. Target areas cover approximately 2,095 acres and forward arming and refueling points occupy 161 acres. Approximately 202.8 miles of roads cross this portion of the critical habitat unit.

The **Western Mojave Recovery Unit** occurs completely in California and is exceptionally heterogeneous and large. It is composed of the Western Mojave, Southern Mojave, and Central Mojave regions, each of which has distinct climatic and vegetational characteristics. The most pronounced difference between the Western Mojave and other recovery units is in timing of rainfall and the resulting vegetation. Most rainfall occurs in fall and winter and produces winter annuals, which are the primary food source of tortoises. Above ground activity occurs primarily in spring, associated with winter annual production. Thus, tortoises are adapted to a regime of winter rains and rare

summer storms. Here, desert tortoises occur primarily in valleys, on alluvial fans, bajadas, and rolling hills in saltbrush, creosote bush, and scrub steppe communities. Tortoises dig deep burrows (usually located under shrubs on bajadas) for winter hibernation and summer aestivation. These desert tortoises generally den singly. They have a California mtDNA haplotype and a California shell type.

Four DWMAs occur wholly or partially within the Western Mojave Recovery Unit: Fremont-Kramer, Ord-Rodman, Superior-Cronese, and Joshua Tree. These areas approximate the Fremont-Kramer, Ord-Rodman, Superior-Cronese, and Pinto Basin critical habitat units.

The **Upper Virgin River Recovery Unit** encompasses all desert tortoise habitat in Washington County, Utah, except the Beaver Dam Slope, Utah population. Only the Upper Virgin River DWMA and critical habitat unit occur in this recovery unit. The desert tortoise population in the area of St. George, Utah is at the extreme northeastern edge of the species' range and experiences long, cold winters (about 100 freezing days) and mild summers, during which the tortoises are continually active. Here the animals live in a complex topography consisting of canyons, mesas, sand dunes, and sandstone outcrops where the vegetation is a transitional mixture of sagebrush scrub, creosote bush scrub, blackbush scrub, and a psammophytic community. Desert tortoises use sandstone and lava caves instead of burrows, travel to sand dunes for egg-laying, and use still other habitats for foraging. Two or more desert tortoises often use the same burrow. Shell morphology and mtDNA have not been studied in this recovery unit, but allozyme variation is similar to that found in the Northeastern Mojave Recovery Unit.

e. Distribution

The 1994 Recovery Plan conceived desert tortoises to be distributed in large populations that required large areas and large densities to recover. However, existing data are consistent with the possibility that tortoises have evolved to exist in *metapopulations*. Metapopulation theory conceives that tortoises are distributed in metapopulation patches connected with corridors that allow inefficient and asynchronous movements of individuals among the patches (Hanski 1999, Levins and Culver 1971, Levin *et al*. 1984). This paradigm conceives that some habitat patches within the range of the desert tortoise will have low population numbers or no tortoises at all, and others will have higher population numbers. Movement among the patches is necessary for persistence of the "system." If desert tortoises evolved to exist in metapopulations, then long-term persistence requires addressing habitat fragmentation caused by highways and "satellite" urbanization. Satellite urbanization occurs when blocks of habitat become developed which are substantially disjunct from existing developments (leap-frog development) resulting in a greater edge effect and creating an area of habitat between the developments which becomes degraded over time. Ensuring the integrity and function of natural corridors among habitat patches might require active management of tortoise densities in habitat patches and associated corridors.

The prescriptions for recovery in the Recovery Plan were for individual populations and assumed that preserving large blocks of habitat and managing threats in that habitat would be principally all that would be necessary to recover the species. However, that original paradigm, and the prescriptions made within that paradigm, may be wrong. Existing data have revealed population crashes that have occurred asynchronously across the range. There are reports that some populations, which have crashed previously, have subsequently increased in population density. Additionally, all known dense populations of desert tortoises have crashed. This suggests that density-dependent mortality occurs in desert tortoise populations, and that population dynamics may be asynchronous.

The genetic distinctness of tortoise populations and their pathogens should be assessed to guide all manipulative management actions (*e.g.*, head starting, translocation, habitat restoration, and corridor management). The Committee proposed a revision to the previous delineation of recovery units, or Distinct Population Segments (DPSs) based on new scientific information. The recommended delineations reflect the prevailing concepts of subpopulation "discreteness," and "significance," and incorporate morphological, behavioral, genetic, and environmental information. The Committee's recommendation reduces the number of DPSs from six to five by leaving the original Upper Virgin River and Western Mojave units intact and recombining the four central units into three reconfigured units: Lower Virgin River Desert, Northeastern Mojave Desert (including Amargosa Valley, Ivanpah Valley, and Shadow Valley), and Eastern Mojave and Colorado Desert. These recommended DPSs are based largely on the best resolving biochemical/genetic data of Rainboth *et al*. (1989), Lamb *et al*. (1989), Lamb and Lydehard (1994), and Britten *et al*. (1997). Because these delineations are general and not definitive at this time, more data and analyses are required which may result in additional modification. Although DPSs have been proposed by the Committee, no DPSs have been officially designated by the Service.

The 1994 Recovery Plan conceived desert tortoises to be distributed in large populations that required large areas and large densities to recover. However, existing data are consistent with the possibility that tortoises have evolved to exist in *metapopulations*. Metapopulation theory conceives that tortoises are distributed in metapopulation patches connected with corridors that allow inefficient and asynchronous movements of individuals among the patches. This paradigm conceives that some habitat patches within the range of the desert tortoise will have low population numbers or no tortoises at all, and others will have higher population numbers. Movement among the patches is necessary for persistence of the "system." If desert tortoises evolved to exist in metapopulations, then long-term persistence requires addressing habitat fragmentation caused by highways and satellite urbanization. Ensuring the integrity and function of natural corridors among habitat patches might require active management of tortoise densities in habitat patches and associated corridors.

Threats

The Service identified key threats when the Mojave population of the desert tortoise was emergency listed as endangered and subsequently listed as a threatened species, which remain valid today. The Recovery Plan discusses threats and developed recovery objectives to minimize their effects on the desert tortoise and allow the tortoise to recover. Since becoming listed under the Act, more information is available on threats to the desert tortoise with some threats such as wildfires and alien plants affecting large areas occupied by tortoises.

Alien plants continue to contribute towards overall degradation or habitat quality for the desert tortoise. Land managers and field scientists identified 116 species of alien plants in the Mojave and Colorado Deserts (Brooks and Esque 2002). The proliferation of non-native plant species has also contributed to an increase in fire frequency in tortoise habitat by providing sufficient fuel to carry fires, especially in the intershrub spaces that are mostly devoid of native vegetation (Service 1994; Brooks 1998; Brown and Minnich 1986). Changes in plant communities caused by alien plants and recurrent fire may negatively affect the desert tortoise by altering habitat structure and species composition of their food plants (Brooks and Esque 2002).

Changing ecological conditions as a result of natural events or human-caused activities may stress individual tortoises and result in a more severe clinical expression of URTD (Brown *et al*. 2002). For example, the proliferation of non-native plants within the range of the tortoise has had far-reaching impacts on tortoise populations. Tortoises have been documented to prefer native vegetation over non-natives (Tracy *et al*. 2004). Non-native annual plants in desert tortoise critical habitat in the western Mojave Desert were identified to compose over 60 percent of the annual biomass (Brooks 1998). The reduction in quantity and quality of forage may stress tortoises and make them more susceptible to drought- and disease-related mortality (Brown *et al*. 1994). Malnutrition has been associated with several disease outbreaks in both humans and turtles (Borysenko and Lewis 1979).

Numerous wildfires occurred in desert tortoise habitat across the range of the desert tortoise in 2005 due to abundant fuel from the proliferation of non-native plant species after a very wet winter. These wildfires heavily impacted two of the six desert tortoise recovery units, burning less than 19 percent of desert tortoise habitat in the Upper Virgin River and 10 percent in the Northeastern Mojave (Table 10). In the Upper Virgin River Recovery Unit, 19 percent of the Upper Virgin River critical habitat unit (CHU) burned. In the Northeastern Mojave Recovery Unit, three CHUs were impacted: about 23 percent of the Beaver Dam Slope CHU burned, 13 percent of the Gold Butte-Pakoon CHU, and 4 percent of the Mormon Mesa CHU. Although it is known that tortoises were burned and killed by the wildfires, tortoise mortality estimates are not available at this time.

Table 10. Acres of desert tortoise habitat burned in each recovery unit during 2005.

Recovery Unit	Habitat Burned (acres)	% Habitat Burned	CH* Burned (acres)	% CH Burned
Upper Virgin River**	10,446	< 19	10,446	19
Northeastern Mojave***	500,000	10	124,782	11
Eastern Mojave	6,000	< 1	1,219	<1
Western Mojave	0	0	0	0
Northern Colorado	0	0	0	0
Eastern Colorado	0	0	0	0
Total	**516,446**	**-**	**136,447**	**-**

* CH – critical habitat
** Estimates only for Upper Virgin River; needs GIS analysis.
*** Potential habitat was mapped and calculated as Mojave Desert less than 4,200 feet in elevation minus playas, open water, and developed and agricultural lands.

Disease and raven predation have been considered important threats to the desert tortoise since its emergency listing in 1989. What is currently known with certainty about disease in the desert tortoise relates entirely to individual tortoises and not populations; virtually nothing is known about the demographic consequences of disease (Tracy *et al*. 2004). Disease was identified in the 1994 Recovery Plan as an important threat to the desert tortoise. Disease is a natural phenomenon in wild populations of animals and can contribute to population declines by increasing mortality and reducing reproduction. However, URTD appears to be a complex, multi-factorial disease interacting with other stressors to affect desert tortoises (Brown *et al*. 2002; Tracy *et al*. 2004). The disease occurs mostly in relatively dense desert tortoise populations, as mycoplasmal infections are dependent upon higher densities of the host (Tracy *et al*. 2004).

From 1969 to 2004 the numbers of common ravens in the west Mojave Desert increased approximately 700 percent (Boarman and Kristan 2006). Population increases have also been noted at other locations particularly in the California Desert. This many-fold increase above historic levels and a shift from a migratory species to a resident species is due in a large part to recent human subsidies of food, water, and nest sites (Knight *et al*. 1993, Boarman 1993, Boarman and Berry 1995). While not all ravens may include tortoises as significant components of their diets, these birds are highly opportunistic in their feeding patterns and concentrate on easily available seasonal food sources, such as juvenile tortoises.

Boarman (2002a) identified the following major categories of threats: Agriculture, collection by humans, construction activities, disease, drought, energy and mineral development, fire, garbage and litter, handling and deliberate manipulation of tortoises, invasive [alien] plants, landfills, livestock grazing, military operations, noise and vibration, off-road [OHV] activities, predation, non-off-road vehicle recreation, roads,

highways and railroads, utility corridors, vandalism, and wild horses and burros. For additional information on threats to the desert tortoise refer to Boarman (2002a), Tracy *et al.* (2004), Service 1994.

f. Reproduction

Desert tortoises possess a combination of life history and reproductive characteristics that affect the ability of populations to survive external threats. Tortoises grow slowly, require 15 to 20 years to reach sexual maturity, and have low reproductive rates during a long period of reproductive potential (Turner *et al*. 1984; Bury 1987; Tracy *et al*. 2004).

Choice of mate is mediated by aggressive male-male interactions and possibly by female choice (Niblick *et al*. 1994). Tortoises in the West Mojave Desert may exhibit pre-breeding dispersal movements, typical of other vertebrates, ranging from 1 to 10 miles in a single season (Sazaki *et al*. 1995). The advantage of pre-breeding dispersal may be to find a more favorable environment in which to reproduce. However, the risk is increased mortality from predation, exposure, starvation, or anthropogenic factors (*e.g*., motor vehicle mortality).

The average clutch size is 4.5 eggs (range 1 to 8), with 0-3 clutches deposited per year (Turner *et al*. 1986). Clutch size and number probably depend on female size, water, and annual productivity of forage plants in the current and previous year (Turner *et a*l. 1984, 1986; Henen 1997). The ability to alter reproductive output in response to resource availability may allow individuals more options to ensure higher lifetime reproductive success. The interaction of longevity, late maturation, and relatively low annual reproductive output causes tortoise populations to recover slowly from natural or anthropogenic decreases in density. To ensure population stability or increase, these factors also require relatively high juvenile survivorship (75 to 98 percent per year), particularly when adult mortality is elevated (Congdon *et a*l. 1993). Most eggs are laid in spring (April through June) and occasionally in fall (September to October). Eggs are laid in sandy or friable soil, often at the entrance to burrows. Hatching occurs 90 to 120 days later, mostly in late summer and fall (mid-August to October). Eggs and young are untended by the parents.

Tortoise sex determination is environmentally controlled during incubation (Spotila *et al*. 1994). Hatchlings develop into females when the incubation (*i.e.*, soil) temperature is greater than 88.7° F) and males when the temperature is below that (Lance 2006). Mortality is higher when incubation temperatures are greater than 95.5° F or less than 78.8° F. The sensitivity of embryonic tortoises to incubation temperature may make populations vulnerable to unusual changes in soil temperature (*e.g*., from changes in vegetation cover).

At Yucca Mountain, Nye County Nevada (Northeastern Mojave Recovery Unit), Mueller *et al*. (1998) estimated that the mean age of first reproduction was 19 to 20 years; clutch

size (1 to 10 eggs) and annual fecundity (0 to 16 eggs) were related to female size but annual clutch frequency (0 to 2) was not. Further, Mueller suggested that body condition during July to October may determine the number of eggs a tortoise can produce the following spring. McLuckie and Friedell (2002) determined that the Beaver Dam Slope desert tortoise population, within the Northeastern Mojave Recovery Unit, had a lower clutch frequency (1.33 ± 0.14) per reproductive female and fewer reproductive females (14 out of 21) when compared with other Mojave desert tortoise populations. In the 1990's, Beaver Dam Slope experienced dramatic population declines due primarily to disease and habitat degradation and alteration (Service 1994). The number of eggs that a female desert tortoise can produce in a season is dependent on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological condition (Henen 1997; McLuckie and Fridell 2002).

g. Numbers

Long-term monitoring of desert tortoise populations is a high priority recovery task as identified in the Recovery Plan. From 1995 to 1998, pilot field studies and workshops were conducted to develop a monitoring program for desert tortoise. In 1998, the Desert Tortoise Management Oversight Group identified line distance sampling as the appropriate method to determine rangewide desert tortoise population densities and trends. Monitoring of populations using this method is underway across the range of the desert tortoise. Successful rangewide monitoring will enable managers to evaluate the overall effectiveness of recovery actions and population responses to these actions, thus guiding recovery of the Mojave desert tortoise. Rangewide tortoise population monitoring began in 2001 and is conducted annually.

Declines in tortoise abundance appear to correspond with increased incidence of disease in tortoise populations. The Goffs permanent study plot in Ivanpah Valley, California, suffered 92 to 96 percent decreases in tortoise density between 1994 and 2000 (Berry 2003). The high prevalence of disease in Goffs tortoises likely contributed to this decline (Christopher *et al*. 2003). Upper respiratory tract disease has not yet been detected at permanent study plots in the Colorado Desert of California, but is prevalent at study plots across the rest of the species' range (Berry 2003) and has been shown to be a contributing factor in population declines in the western Mojave Desert (Brown *et al*. 2002; Christopher *et al*. 2003). High mortality rates at permanent study plots in the northeastern and eastern Mojave appear to be associated with incidence of shell diseases in tortoises (Jacobson *et al*. 1994). Low levels of shell diseases were detected in many populations when the plots were first established, but were found to increase during the 1980s and 1990s (Jacobson *et al*. 1994; Christopher *et al*. 2003). A herpesvirus has recently been discovered in desert tortoises, but little is known about its effects on tortoise populations at this time (Berry *et al*. 2002; Origgi *et al*. 2002).

The general trend for desert tortoises within the California Desert is one of decline. Transects in the Western Mojave Recovery Unit that did not detect any sign over large

areas of previously occupied habitat and the numerous carcasses found on permanent study plots provide evidence of a decline. During line distance sampling conducted in 8 DWMAs in California in 2003, 930 carcasses and 438 live desert tortoises were detected; more carcasses than live animals were detected in every study area (Woodman 2004). In 2004, workers conducting line distance sampling in California detected 1,796 carcasses and 534 live desert tortoises; more carcasses were detected than live animals in every study area (Woodman 2005).

There are many natural causes of mortality, but their extents are difficult to evaluate and vary from location to location. Native predators known to prey on tortoise eggs, hatchlings, juveniles, and adults include: coyote, kit fox, badger (*Taxidea taxus*), skunks (*Spilogale putorius*), common ravens, golden eagles (*Aquila chrysaetos*), and Gila monsters (*Heloderma suspectum*). Additional natural sources of mortality to eggs, juvenile, and adults may include desiccation, starvation, being crushed (including in burrows), internal parasites, disease, and being turned over onto their backs during fights or courtship (Luckenbach 1982, Turner *et al*. 1987). Free-roaming dogs cause mortality, injury, and harassment of desert tortoises (Evans 2001). Population models indicate that for a stable population to maintain its stability, on average, no more than 25 percent of the juveniles and 2 percent of the adults can die each year (Congdon *et al*. 1993, Service 1994). However, adult mortality at one site in the West Mojave was 90 percent over a 13-year period (Berry 1997). Morafka *et al*. (1997) reported 32 percent mortality over 5 years among free-ranging and semi-captive hatchling and juvenile tortoises (up to 5 years old) in the West Mojave. When the 26 that were known to have been preyed on by ravens were removed from the analysis, mortality dropped to 24 percent. Turner *et al*. (1987) reported an average annual mortality rate of 19 to 22 percent among juveniles over a 9-year period in the East Mojave.

Northeastern Mojave Recovery Unit. A kernel analysis was conducted in 2003-2004 for the desert tortoise (Tracy *et al*. 2004) as part of the reassessment of the 1994 Recovery Plan. The kernel analyses revealed several areas in which the kernel estimations for live tortoises and carcasses did not overlap. The pattern of non-overlapping kernels that is of greatest concern is those in which there were large areas where the kernels encompassed carcasses but not live animals. These regions represent areas within DWMAs where there were likely recent die-offs or declines in tortoise populations. The kernel analysis indicated large areas in the Piute-Eldorado Valley where there were carcasses but no live tortoises. For this entire area in 2001, there were 103 miles of transects walked, and a total of 6 live and 15 dead tortoises found, resulting in a live encounter rate of 0.06 tortoises per mile of transect for this area. This encounter rate was among the lowest that year for any of the areas sampled in the range of the Mojave desert tortoise (Tracy *et al*. 2004).

Results of desert tortoise surveys at three survey plots in Arizona indicate that all three sites have experienced significant die-offs. Six live tortoises were located in a 2001 survey of the Beaver Dam Slope Exclosure Plot (Walker and Woodman 2002). Three

had definitive signs of URTD, and two of those also had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 31 live tortoises in 1996, 20 live tortoises in 1989, and 19 live tortoises in 1980. The 2001 survey report indicated that it is likely that there is no longer a reproductively viable population of tortoises on this study plot. Thirty-seven live tortoises were located in a 2002 survey of the Littlefield Plot (Young *et al*. 2002). None had definitive signs of URTD. Twenty-three tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 80 live tortoises in 1998 and 46 live tortoises in 1993. The survey report indicated that the site might be in the middle of a die-off due to the high number of carcasses found since the site was last surveyed in 1998. Nine live tortoises were located during the mark phase of a 2003 survey of the Virgin Slope Plot (Goodlett and Woodman 2003). The surveyors determined that the confidence intervals of the population estimate would be excessively wide and not lead to an accurate population estimate, so the recapture phase was not conducted. One tortoise had definitive signs of URTD. Seven tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 41 live tortoises in 1997 and 15 live tortoises in 1992. The survey report indicated that the site may be at the end of a die-off that began around 1996-1997.

Eastern Mojave Recovery Unit. The permanent study plot in the Ivanpah Valley is the only such plot in this DWMA; consequently, we cite information from that plot herein, although it is located within the Mojave National Preserve. Data on desert tortoises on a permanent study plot in this area were collected in 1980, 1986, 1990, and 1994; the densities of desert tortoises of all sizes per square mile were 386, 393, 249, and 164, respectively (Berry 1996).

The Shadow Valley DWMA lies north of the Mojave National Preserve and west of the Clark Mountains. It occupies approximately 101,355 acres. Data on desert tortoises on a permanent study plot in this area were collected in 1988 and 1992; the densities of desert tortoises of all sizes per square mile were 50 and 58, respectively (Berry 1996).

The Piute-Fenner DWMA lies to the east of the southeast portion of the Mojave National Preserve. It occupies approximately 173,850 acres. The permanent study plot at Goffs is the only such plot in this DWMA; consequently, we cite information from that plot herein, although it is located within the Mojave National Preserve. Data on desert tortoises on the permanent study plot were collected in 1980, 1990, and 1994; Berry (1996) estimated the densities of desert tortoises of all sizes at approximately 440, 362, and 447 individuals per square mile, respectively. As Berry (1996) noted, these data seem to indicate that this area supported “one of the more stable, high density populations” of desert tortoises within the United States. Berry (1996) also noted that “a high proportion of the animals (had) shell lesions.” In 2000, only 30 live desert tortoises were found; Berry (2000) estimated the density of desert tortoises at approximately 88 animals per square mile. The shell and skeletal remains of approximately 393 desert tortoises were collected; most of these animals died between 1994 and 2000. Most of the desert tortoises exhibited signs of shell lesions; three salvaged desert tortoises showed

abnormalities in the liver and other organs and signs of shell lesions. None of the three salvaged desert tortoises tested positive for upper respiratory tract disease.

Ivanpah and Piute-Eldorado valleys contained study plots that were analyzed in the Eastern Mojave Recovery Unit analysis. While there was no overall statistical trend in adult density over time, the 2000 survey at Goffs and the 2002 survey at Shadow Valley indicate low densities of adult tortoises relative to earlier years. Unfortunately, there are no data in the latter years for all five study plots within this recovery unit, and therefore, while there is no statistical trend in adult densities, we cannot conclude that tortoises have not experienced recent declines in this area. The probability of finding a carcass on a distance sampling transect was considerably higher for Ivanpah, Chemehuevi, Fenner, and Piute-Eldorado, which make up the Eastern Mojave Recovery Unit.

Northern Colorado Recovery Unit. Two permanent study plots are located within the Chemehuevi DWMA. At the Chemehuevi Valley and Wash plot, 257 and 235 desert tortoises were registered in 1988 and 1992, respectively (Berry 1999). During the 1999 spring survey, only 38 live desert tortoises were found. The shell and skeletal remains of at least 327 desert tortoises were collected; most, if not all, of these animals died between 1992 and 1999. The frequency of shell lesions and nutritional deficiencies appeared to be increasing and may be related to the mortalities.

The Upper Ward Valley permanent study plot was surveyed in 1980, 1987, 1991, and 1995; Berry (1996) estimated the densities of desert tortoises of all sizes at approximately 437, 199, 273, and 447 individuals per square mile, respectively.

Eastern Colorado Recovery Unit. This recovery unit is also located completely in California. Desert tortoises occupy well-developed washes, desert pavements, piedmonts, and rocky slopes characterized by relatively species-rich succulent scrub, creosote bush scrub, and Blue Palo Verde-Ironwood-Smoke Tree communities. Winter burrows are generally shorter in length, and activity periods are longer than elsewhere due to mild winters and substantial summer precipitation. The tortoises feed on summer and winter annuals and some cacti; they den singly. They also have the California mtDNA haplotype and shell type.

Two permanent study plots are located within this DWMA. At the Chuckwalla Bench plot, Berry (1996) calculated approximate densities of 578, 396, 167, 160, and 182 desert tortoises per square mile in 1979, 1982, 1988, 1990, and 1992, respectively. At the Chuckwalla Valley plot, Berry (1996) calculated approximate densities of 163, 181, and 73 desert tortoises per square mile in 1980, 1987, and 1991, respectively. Tracy *et al*. (2004) concluded that these data show a statistically significant decline in the number of adult desert tortoises over time; they further postulate that the decline on the Chuckwalla Bench plot seemed to be responsible for the overall significant decline within the recovery unit.

The kernel analysis of the Eastern Colorado Recovery Unit shows that the distributions of the living tortoises and carcasses overlap for most of the region. The Chuckwalla Bench study plot occurs outside the study area, which creates a problem in evaluating what may be occurring in that area of the recovery unit. However, the few transects walked in that portion of the DWMA yielded no observations of live or dead tortoises. This illustrates our concern for drawing conclusions from areas represented by too few study plots and leaves us with guarded concern for this region. The percentage of transects with live animals was relatively high for most DWMAs within the Eastern Colorado Recovery Unit. In addition, the ratio of carcasses to live animals was low within this recovery unit relative to others.

Western Mojave Recovery Unit. This recovery unit includes the proposed Pinto Mountains, Ord-Rodman, Superior-Cronese, and Fremont-Kramer DWMAs. Heaton *et al*. (2004) estimated that 20,420 to 41,224 adult desert tortoises reside in the Western Mojave Recovery Unit; this range was based on extrapolation of data collected during line distance sampling.

The proposed 117,120-acre Pinto Mountains DWMA is located in the southeastern portion of the Western Mojave Recovery Unit. No permanent study plots are located in this proposed DWMA. Little information exists on the densities of desert tortoises in this area. Tracy *et al*. (2004) noted that the distribution of carcasses and live desert tortoises appeared to be what one would expect in a "normal" population of desert tortoises; that is, carcasses occurred in the same areas as live animals and were not found in extensive areas in the absence of live desert tortoises.

The proposed Ord-Rodman DWMA is located to the southeast of the city of Barstow. As proposed, it would cover approximately 248,320 acres. The recovery plan notes that the estimated density of desert tortoises in this area is 5 to 150 animals per square mile (Service 1994). Three permanent study plots are located within and near this proposed DWMA.

The proposed Superior-Cronese DWMA is located north of the Ord-Rodman DWMA; two interstate freeways and rural, urban, and agricultural development separate them. This proposed DWMA covers 616,320 acres. No permanent study plots have been established in this area; the density of desert tortoises has been estimated through numerous triangular transects and line distance sampling efforts. This DWMA supports densities of approximately 20 to 250 desert tortoises per square mile (Service 1994).

The proposed Fremont-Kramer DWMA is located west of the Superior-Cronese DWMA; the two DWMAs are contiguous. This proposed DWMA covers approximately 494,720 acres. The recovery plan notes that the estimated density of desert tortoises in this area was 5 to 100 animals per square mile (Service 1994).

Berry (1996) notes that the overall trend in this proposed DWMA is "a steep, downward decline" and identifies predation by common ravens and domestic dogs, off-road vehicle activity, illegal collecting, upper respiratory tract disease, and environmental contaminants as contributing factors.

During the summers of 1998 and 1999, BLM funded surveys of over 1,200 transects over a large area of the western Mojave Desert. These transects failed to detect sign of desert tortoises in areas where they were previously considered to be common. Although these data have not been fully analyzed and compared with previously existing information, they strongly suggest that the number of desert tortoises has declined substantially over large areas of the western Mojave Desert. The Desert Tortoise Recovery Plan Assessment Committee also noted that the Western Mojave Recovery Unit has experienced declines in the number of desert tortoises (Tracy *et al*. 2004).

The Western Mojave has experienced marked population declines as indicated in the Recovery Plan and continues today. Spatial analyses of the Western Mojave show areas with increased probabilities of encountering dead rather than live animals, areas where kernel estimates for carcasses exist in the absence of live animals, and extensive regions where there are clusters of carcasses where there are no clusters of live animals. Collectively, these analyses point generally toward the same areas within the Western Mojave, namely the northern portion of the Fremont-Kramer DWMA and the northwestern part of the Superior-Cronese DWMA. Together, these independent analyses, based on different combinations of data, all suggest the same conclusion for the Western Mojave. Data are not currently available with sufficient detail for most of the range of the desert tortoise with the exception of the Western Mojave (Tracy *et al*. 2004).

Upper Virgin River Recovery Unit. The recovery plan states that desert tortoises occur in densities of up to 250 adult animals per square mile within small areas of this recovery unit; overall, the area supports a mosaic of areas supporting high and low densities of desert tortoises (Service 1994). The Utah Division of Wildlife Resources (UDWR) has intensively monitored desert tortoises, using a distance sampling technique, since 1998. Monitoring in 2003 indicated that the density of desert tortoises was approximately 44 per square mile throughout the reserve. This density represents a 41 percent decline since monitoring began in 1998 (McLuckie *et al.* 2006). The report notes that the majority of desert tortoises that died within one year (n=64) were found in areas with relatively high densities; the remains showed no evidence of predation.

In the summer of 2005, approximately 10,446 acres of desert tortoise habitat burned in the Red Cliffs Desert Reserve. UDWR estimated that as many as 37.5 percent of adult desert tortoises may have died as a direct result of the fires (McLuckie *et al.* 2006).

Rangewide Population Monitoring Results: 2001-2005

Rangewide tortoise population monitoring began in 2001 and is conducted annually (Table 11). Rangewide sampling of desert tortoises consisted of 4,986 transects totaling 15,957 miles which is the most comprehensive attempt undertaken to date to establish the density of this species (Service 2006). The rangewide monitoring program is designed to detect long-term population trends. However, density estimates from any brief window of time (*e.g*., 2001-2005) would be expected to detect only catastrophic declines or remarkable population increases. Therefore, following the first 5 years of the long-term monitoring project, the goal is not to document trends within this time period, but to gather information on baseline densities, and year-to-year and recovery unit-to-recovery unit variability. This information will also reflect transect-to-transect variability in observations as well as regional variability in detection functions.

Rangewide sampling was initiated during a severe drought that intensified in 2002 and 2003, particularly in the western Mojave Desert in California. At the time the Recovery Plan was written, there was less consideration of the potentially important role of drought in the desert ecosystem, particularly regarding desert tortoises. In the meantime, studies have documented vulnerability of juvenile (Wilson *et al*. 2001) and adult tortoises (Peterson 1994, Peterson 1996, Henen 1997, Longshore *et al*. 2003) to drought.

Considerable decreases in density were reported in 2003 in the Eastern Colorado and Western Mojave recovery units, with no correspondingly large rebound in subsequent estimates. Desert tortoise densities reported in these recovery units were approximately eight to nine tortoises per square mile.

The status and trends of desert tortoise populations are difficult to determine based only upon assessment of tortoise density due largely to their overall low abundance, subterranean sheltering behavior, and cryptic nature of the species. Thus, monitoring and recovery should include a comprehensive assessment of the status and trends of threats and habitats as well as population distribution and abundance.

For more information on desert tortoise or expanded discussions on recovery units and recommended DPSs, please refer to the Recovery Plan (Service 1994) and report prepared by the Committee (Tracy *et al*. 2004).

Table 11. Summary of Desert Tortoise Densities by Recovery Unit

	Year	# of Transects	Length (mi)	# of Adult Tortoises Located	Density (mi^2)	95 percent Confidence Interval Low	95 percent Confidence Interval High
Recovery Units (5)	2001	1,631	1,653	279	9.40	8.02	11.0
	2002	1,010	2,490	289	8.95	7.35	10.9
	2003	990	2,407	354	8.19	6.77	9.90
	2004	610	4,086	445	8.05	6.97	9.29
	2005	745	5,321	489	8.76	7.66	10.0
Upper Virgin River[1]	2001	159	195	168	48.6	37.0	63.7
	2002	–	–	–	–	–	–
	2003	157	192	96	27.2	21.1	35.0
	2004	–	–	–	–	–	–
	2005	155	189	136	35.1	26.4	46.7

[1]Data from McLuckie *et al.* (2006)

2. Desert Tortoise Critical Habitat- Rangewide Status

Desert tortoise critical habitat was designated by the Service to identify the key biological and physical needs of the desert tortoise and key areas for recovery, and focuses conservation actions on those areas. Desert tortoise critical habitat is composed of specific geographic areas that contain the primary constituent elements of critical habitat, consisting of the biological and physical attributes essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. The specific primary constituent elements of desert tortoise critical habitat are:

1. sufficient space to support viable populations within each of the six recovery units, and to provide for movement, dispersal, and gene flow;
2. sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species;
3. suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites;
4. sufficient vegetation for shelter from temperature extremes and predators; and
5. habitat protected from disturbance and human-caused mortality.

CHUs were based on recommendations for DWMAs outlined in the *Draft Recovery Plan for the Desert Tortoise (Mojave Population)* (Service 1993 Table 12). These DWMAs

are also identified as desert tortoise ACECs by BLM. Because the critical habitat boundaries were drawn to optimize reserve design, the critical habitat unit may contain both "suitable" and "unsuitable" habitat. Suitable habitat can be generally defined as areas that provide the primary constituent elements.

Although recovery of the tortoise will focus on DWMAs/ACECs, section II.A.6. of the Recovery Plan and section 2(b) of the Act provide for protection and conservation of ecosystems on which federally-listed threatened and endangered species depend, which includes both recovery and non-recovery areas. The Mojave Desert ecosystem, of which the desert tortoise and its habitat are an integral part, consists of a dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit (Noss and Cooperrider 1994). Actions that adversely affect components of the Mojave Desert ecosystem may directly or indirectly affect the desert tortoise. The Recovery Plan further states that desert tortoises and habitat outside recovery areas may be important in recovery of the tortoise. Healthy, isolated tortoise populations outside recovery areas may have a better chance of surviving catastrophic effects such as disease, than large, contiguous populations (Service 1994).

The Recovery Plan recommended DWMAs and subsequently the Service designated CHUs based on these proposed DWMAs (Service 1993). When designated, desert tortoise critical habitat contained all the primary constituent elements of desert tortoise critical habitat. The following seven principles of conservation biology serve as the standards by which the Service determines whether or not the CHUs are functioning properly:

(1) *Reserves should be well-distributed across the species' range*. The entire range of the Mojave desert tortoise occurs within one of the six recovery units identified in the Recovery Plan and at least one DWMA and CHU occurs within each recovery unit. The reserves remain well-distributed across the range of the desert tortoise.

(2) *Reserves should contain large blocks of habitat with large populations of target species*. The desert tortoise requires large, contiguous areas of habitat to meet its life requisites. Each DWMA and its associated CHUs that were designated to conserve contiguous blocks of habitat that exceed 500,000 acres, with the exception of the Upper Virgin River Recovery Unit (Table 12). The Upper Virgin River Recovery Unit does not meet the minimum size requirement identified in the Recovery Plan, however the Service anticipates that reserve-level management will adequately conserve the desert tortoise within this recovery unit Designation of CHUs were based largely on transect data and included areas with the largest populations of desert tortoises.

(3) *Blocks of habitat should be close together*. This principle was met when CHUs were designated and remains valid.
(4) *Reserves should contain contiguous rather than fragmented habitat.* This principle was met when CHUs were designated and generally continue to be met. Desert tortoise-

proof fencing has been constructed along major roads and highways that traverse critical habitat including Interstate 15 in Nevada and California (Ivanpah Valley DWMA/CHU), U.S. Highway 95 (US 95) in Nevada (Piute-Eldorado DWMA/CHU), and Highway 58 in California (Fremont-Kramer DWMA/CHU). Major roads and highways alone constitute a barrier to tortoise movements without fencing; however, the fencing minimized take of tortoises and culverts or underpasses allow for limited tortoise movement across the road or highway.

(5) *Habitat patches should contain minimal edge-to-area ratios*. This principle was met when CHUs were designated and generally continue to be valid. Notable exceptions include the northern Gold Butte-Pakoon CHU, and the southern termini of the Mormon Mesa, Ivanpah Valley, and Chuckwalla CHUs which have large edge-to-area rations and further compromised by highways that traverse these relatively narrow areas within the CHUs. Pending development of private lands in Coyote Springs Valley would substantially increase the edge-to-area ratio in the southwestern section of the Mormon Mesa CHU.

(6) *Blocks should be interconnected by corridors or linkages connecting protected, preferred habitat for the target species.* Most CHUs are contiguous with another CHU with the exception of Ord-Rodman, Ivanpah Valley, Gold Butte Pakoon, and Upper Virgin River CHUs. Interstate 15 and the Virgin River separate the Gold Butte-Pakoon CHU from other CHUs in the Northeastern Mojave Recovery Unit. Similarly, Interstate 40 separates the Piute-Eldorado and Chemehuevi CHUs, and Ord Rodman and Superior-Cronese CHUs. Pending development in Coyote Springs Valley may fragment the Mormon Mesa DWMA by restricting tortoise movements between the Kane Springs ACEC to the north and Coyote Springs ACEC to the south which is dependant upon the extent of development.

(7) *Blocks of habitat should be roadless or otherwise inaccessible to humans*. Achieving this principle is the most problematic. A 2001 inventory of roads in the Western Mojave suggests that road density increased from the mid-1980's. Further evaluation should be conducted as some of the recently mapped roads were actually historical roads especially with the advent of effective mapping capabilities (Tracy *et al* 2004). Roads proliferate desert tortoise habitat rangewide and may be increasing in density (Tracy *et al.* 2004).

The recommendations for desert tortoise critical habitat in the Recovery Plan include elimination of specified activities that are incompatible with desert tortoise conservation including habitat destruction that diminishes the capacity of the land to support desert tortoises, and grazing by livestock, and feral burros and horses. Since approval of the Recovery Plan, livestock grazing in desert tortoise critical habitat has been substantially reduced. BLM and NPS manage for zero burros in Nevada and the California Desert Managers Group developed a burro management plan in 2004.

Table 12. Desert Tortoise CHUs, DWMAs, and Recovery Units - Size and Location

CHU	SIZE (ac.)	STATE	DWMA	RECOVERY UNIT
Chemehuevi	937,400	CA	Chemehuevi	Northern Colorado
Chuckwalla	1,020,600	CA	Chuckwalla	Eastern Colorado
Fremont-Kramer	518,000	CA	Fremont-Kramer	Western Mojave
Ivanpah Valley	632,400	CA	Ivanpah Valley	Eastern Mojave
Pinto Mtns.	171,700	CA	Joshua Tree	Western Mojave/ Eastern Colorado
Ord-Rodman	253,200	CA	Ord-Rodman	Western Mojave
Piute-Eldorado- CA Piute-Eldorado- NV	453,800 516,800	CA NV	Fenner Piute-Eldorado	Eastern Mojave Northeastern & Eastern Mojave
Superior-Cronese	766,900	CA	Superior-Cronese Lakes	Western Mojave
Beaver Dam:	87,400 74,500 42,700	NV UT AZ	Beaver Dam Beaver Dam Beaver Dam	Northeastern Mojave (all)
Gold Butte-Pakoon	192,300 296,000	NV AZ	Gold Butte-Pakoon Gold Butte-Pakoon	Northeastern Mojave (all)
Mormon Mesa	427,900	NV	Mormon Mesa Coyote Spring	Northeastern Mojave
Upper Virgin River	54,600	UT	Upper Virgin River	Upper Virgin River

The status of the desert tortoise and its critical habitat has been impacted by decades of human activities. In their 1991 report, the GAO found that livestock grazing practices of the late 1880s and early 1990s badly damaged desert lands in the southwest. Domestic livestock grazing on BLM's hot desert allotments continue to pose the greatest risk of long-term environmental damage to a highly fragile resource. The GAO offered several options for consideration by Congress including the discontinuation of livestock grazing in hot desert areas. They concluded that BLM did not have the resources to properly manage the intensity of livestock grazing in hot deserts. Without sufficient monitoring data, BLM will not have the necessary data to change active preference levels and overgrazing may occur (GAO 1991).

Further information on desert tortoise critical habitat can be found in the following documents:

- Desert Tortoise Recovery Plan Assessment Report (Tracy *et al*. 2004)- all CHUs
- Final Environmental Impact Report and Statement for the West Mojave Plan (BLM 2005b)- Fremont-Kramer CHU, Superior-Cronese CHU, Ord-Rodman CHU, and Pinto Mountains CHU
- Mojave National Preserve General Management Plan (National Park Service 2002) - Ivanpah Valley CHU and Piute-Eldorado CHU
- Northern and Eastern Colorado Coordinated Management Plan (BLM 2002a)- Chemehuevi CHU, Pinto Mountains CHU, and Chuckwalla CHU
- Northern and Eastern Mojave Desert Management Plan (BLM 2002b)- Ivanpah Valley CHU, Piute-Eldorado CHU, and Chemehuevi CHU

- Clark County Multiple Species HCP (RECON 2000)- Beaver Dam Slope CHU, Mormon Mesa CHU, Gold Butte-Pakoon CHU, and Piute-Eldorado CHU
- Washington County HCP (Washington County Commission 1995)
- Biological Assessment for the Proposed Addition of Maneuver Training Land at Fort Irwin, CA (U.S. Army National Training Center 2005)- Superior-Cronese CHU
- Desert Tortoise (Mojave Population) Recovery Plan and Proposed DWMAs for Recovery of the Mojave Population of the Desert Tortoise (companion document to the Desert Tortoise Recovery Plan) (Service 1994)

3. Big Spring Spinedace- Rangewide Status

a. Listing History

The Big Spring spinedace was included in the Service's Notice of Review of Vertebrate Wildlife published December 30, 1982 (47 FR 58454). The Service received a petition from the Desert Fishes Council on April 12, 1983, to add the Big Spring spinedace to the List of Endangered and Threatened Species. The petition was evaluated and found to present substantial information supporting the petitioned action, and a notice of finding to this effect was published on June 14, 1983 (50 FR 27273). On November 30, 1983, the Service published a proposal to list the Big Spring spinedace as threatened with critical habitat (50 FR 54082). The Big Spring spinedace was listed as threatened with critical habitat on April 29, 1985 (50 FR 12298). The species was listed because one of the two existing populations was extirpated, and the remaining population was threatened by habitat alteration and the possible introduction of nonnative species. The listing included a special rule allowing take of the species for certain purposes in accordance with state laws and regulations.

b. Species Account

Big Spring spinedace is one of three native fishes occupying the stream habitat of Meadow Valley Wash in Lincoln County, Nevada. It historically occupied the Panaca (Big) Spring outflow stream, which flows into Meadow Valley Wash below Condor Canyon. The species was extirpated from Big Spring in 1959, and now only occurs in the stream segment of the Meadow Valley Wash that flows through Condor Canyon.

Big Spring spinedace is a member of the Plagopterini tribe of cyprinid fishes. Members of this tribe are distinguished from other cyprinids by the spine-like character of the pelvic and pectoral fin rays and the two anterior dorsal fin rays, a membranous connection between the innermost ray of the pelvic fins and the belly, bright silver coloration, and the absence or diminutive development of body scales (Miller and Hubbs 1960).

Big Spring spinedace were described by Miller and Hubbs (1960) following a review of the previous classification of the genus *Lepidomeda*. Big Spring spinedace are

differentiated from Virgin River spinedace (*Lepidomeda mollispinis mollispinis*) by a higher, more pointed dorsal fin, longer pelvic fins, and a smaller, more oblique mouth (Miller and Hubbs 1960).

Big Spring spinedace are bright silver in color, with some individuals having yellow to orange at the axils of paired fins, base of the anal fin, upper edge of the shoulder girdle, vertical arm of the preopercular bone, and above the mouth. Specimens collected from the outflow of Big Spring in 1938 ranged from 1.9 to 2.2 inches total length (Miller and Hubbs 1960). Big Spring spinedace captured from Meadow Valley Wash in Condor Canyon varied from 1.9 to 3.7 inches total length (Allan 1985). Two male Big Spring spinedace collected from Condor Canyon in 1986 exceeded 4.3 inches total length (Withers 1986).

Big Spring spinedace life history and habitat requirements are poorly understood. Some information is available from field observations made during collecting efforts or status surveys. Big Spring spinedace collected in 1938 occupied the outflow stream and associated marsh areas below Big Spring, but not the spring pool (Miller and Hubbs 1960). Water temperature of the stream within the meadow was 84ºFahrenheit (F), and the channel was 1 to 3 feet wide and up to 2 feet deep. Stream bottom substrate consisted of firm to soft clay with some gravel. Aquatic vegetation included watercress (*Rorippa* sp.), pondweed (*Potamogeton* sp.), and bulrushes (*Scirpus* sp.). By 1959, when Big Spring spinedace was reported as extirpated from Panaca Spring, the spring outflow stream was clogged with silt and a variety of submergent and emergent vegetation, conditions different than those in 1938.

Flows at Panaca Spring decreased from 31.3 cubic yards per minute (yd^3/m) recorded in 1946, to 24.3 yd^3/m recorded in 1963 (Garside and Schilling 1979). Spring discharge continued to decline such that between 1989 and 1990 it varied from a low of 0.9 yd^3/m in November to a high of 3.9 yd^3/m in March (Pupacko *et* al. 1989; Bostic *et al*. 1990; Garcia *et al*. 1991; Hess *et al*. 1992). Currently, all water from Panaca Spring is captured and used for agricultural purposes.

Delmue Springs, just above the northern end of Condor Canyon, provides a base flow of approximately 1.0 yd^3/m (Garside and Schilling 1979). Above Delmue Springs, Meadow Valley Wash flows intermittently and is interrupted by two reservoirs. Additional springs within Condor Canyon add to the stream's total volume. Flow measurements taken at Condor Canyon in 1987 ranged from 5.0 to 15.4 yd^3/m (BLM 1990).

Big Spring spinedace collected in Condor Canyon in 1981 and 1984 were found in areas 1 to 3 feet deep, with moderate to slow currents, undercut banks, and floating aquatic vegetation (Allan 1985). Spawning behavior has never been observed and spawning habitat requirements are unknown. Spawning condition has been observed most frequently in late May and early June (Langhorst 1991).

Food preferences and feeding habits are unknown. The closely related Virgin River spinedace are opportunistic drift feeders, feeding primarily on aquatic insect larvae but consuming algae and other plant material when insects are scarce (Rinne 1971; Minckley 1973). Allan (1985) suggested that vegetation, especially watercress, is important in providing habitat for aquatic insect and invertebrate foods for Big Spring spinedace.

c. Distribution

The Big Spring spinedace historically occurred at Big Spring in Panaca, Lincoln County, Nevada, but was extirpated from this location in 1959 due to the introduction of nonnative aquatic species, the diversion of water, and occasional desiccation of both the original outflow and the diversion ditch. Currently, the species is only known to exist in a 0.5 mile stretch of the Meadow Valley Wash that flows through Condor Canyon northeast of Panaca in Lincoln County. They were discovered in 1977, in the plunge pool beneath a 49 foot waterfall in Condor Canyon, approximately 3.8 miles north of Panaca Spring (Allan 1985). In 1980, larval Big Spring spinedace were transplanted from the waterfall plunge pool to small, instream pools 0.9 mile above the waterfall.

d. Survival and Recovery Needs

Big Spring spinedace may be proposed for delisting when a self-sustaining population exists in Meadow Valley Wash at Condor Canyon for at least 5 consecutive years and its habitat is secured from all known threats. The recovery plan recommends protecting the population in Condor Canyon and restoring habitat between Condor Canyon and Panaca Spring to allow Big Spring spinedace to expand into historic habitat. Since completion of the recovery plan, the habitat in this area has become increasingly degraded and is located entirely on private land. Restoring the habitat and reestablishing a population in this portion of the stream may no longer be feasible.

The recovery plan also recommends establishing one or more self-sustaining refugia populations to prevent the extinction of the species should unforeseen catastrophic events severely impact or eliminate the Condor Canyon population (Service 1993). Recovery actions for the spinedace include: (1) securing, enhancing, and maintaining the Big Spring spinedace population; and (2) establishing one or more refugia populations.

e. Abundance and Population Trends

Big Spring spinedace are considered to be relatively abundant in Condor Canyon, but the actual population size is unknown. During 1984, five sites within Condor Canyon were sampled, but Big Spring spinedace were present only at the transplant site (Allan 1985). In May of 1986, a total of 204 spinedace were collected from 11 of 15 sites sampled along approximately 7 km of Meadow Valley Wash, above and within Condor Canyon (Withers 1986). Big Spring spinedace were most abundant in and near the transplant site, where 97 individuals were captured. A total of 546 Big Spring spinedace were captured from 13 sample sites within Condor Canyon during November 1990 (Langhorst 1991).

Surveys for Big Spring spinedace are conducted annually by NDOW. The latest information available on population size is from surveys conducted in 2006. Seven 25-meter plots were sampled to provide an index of population size, which ranged from approximately zero individuals per square meter at the base of the canyon to six individuals per square meter at locations above the waterfall. Numbers of spinedace within these plots were stable compared with previous years (NDOW 2006).

f. Threats

The Service listed the Big Spring spinedace in 1985 because one of the two known populations of this species was extirpated and the remaining population was potentially threatened by habitat alteration and introduction of nonnative species. In addition, the limited distribution of the one population at Condor Canyon makes the spinedace vulnerable to extirpation from a catastrophic event.

The population at Panaca (Big) Spring was extirpated due to a combination of decline in spring flow, clogging of the natural channel with silt and vegetation, and the invasion of mosquitofish and bullfrogs (*Rana catesbiana*). At the time the spinedace was listed, nonnative species were not known to occur at Condor Canyon. Since then, surveys have detected the establishment of an unknown nonnative crayfish species, and limited numbers of largemouth bass (*Micropterus salmoides)*, rainbow trout (*Oncorhynchus mykiss*), and white crappie (*Poxomis annularis*) (Withers 1986, 1987a, 1987b, 1988). Livestock grazing also occurs at Condor Canyon. Poorly managed grazing practices can lead to increased sedimentation and erosion, resulting in degraded aquatic habitat.

Water flow in the stream channel through Condor Canyon originates from a series of springs located in the Condor Canyon area. Therefore, future groundwater depletion due to development of water wells within the groundwater system supporting the Condor Canyon springs could adversely affect the aquatic ecosystem.

4. Big Spring Spinedace Critical Habitat- Status

Critical habitat for the spinedace was designated when the species was listed (50 FR 12298). It encompasses 4 miles of Meadow Valley Wash and a 50-foot riparian zone along each side of the stream as it flows through Condor Canyon (Figure 2). Critical habitat begins at the north end of the canyon and continues downstream to the terminus of the canyon. Critical habitat does not include all stream habitat currently or historically occupied by Big Spring spinedace. The primary constituent elements of Big Spring spinedace critical habitat include: (1) clean, permanent, flowing, spring-fed stream habitat with deep pool areas and shallow marshy areas along the shore; and (2) the absence of nonnative fishes.

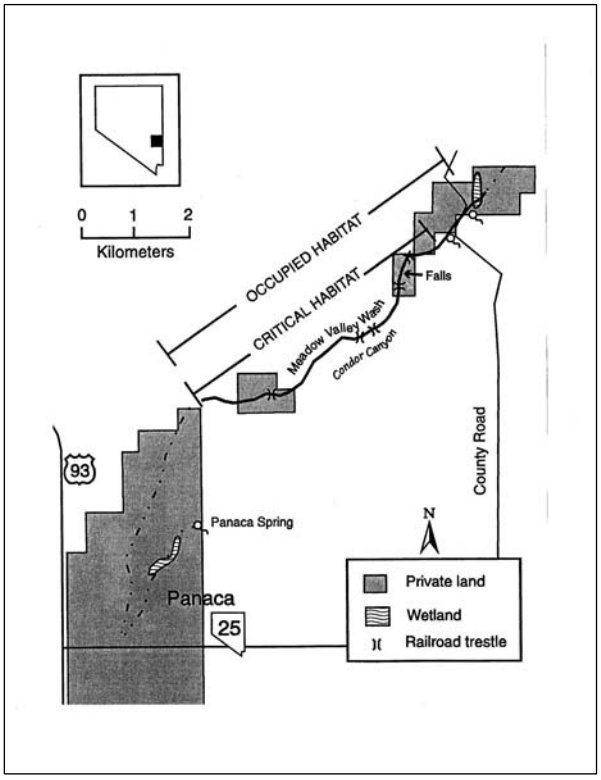


Figure 2. Big Spring spinedace historic habitat (Panaca Spring outflow stream, designated critical habitat, and currently occupied habitat in Meadow Valley Wash, near Panaca, Lincoln County, Nevada.

5. White River Springfish- Rangewide Status

a. Listing History

On September 27, 1985, the White River springfish was listed as endangered with critical habitat (50 FR 39123). The common name of the species is the same as that of the listed subspecies found at Ash Springs. This document refers to the listed subspecies as White River springfish, whereas references to the species will use the scientific name *C. baileyi* to avoid confusion.

b. Species Account

White River springfish were originally described as a subspecies of *Cyprinodon macularius*, but were later considered to be a distinct species (Gilbert 1893; Jordan and Evermann 1896). Springfish of the White River flow system were assigned to the genus *Crenichthys* in 1932 with the description of Railroad Valley springfish (*C. nevadae*) (Hubbs 1932; Sumner and Sargent 1940; La Rivers 1962). The genus *Crenichthys* is closely associated with the killifish genus *Empetrichthys*, and was originally assigned the common name of "killifish". In 1980, the common name of the genus *Crenichthys* was changed to "springfish" to reflect its occurrence in spring habitats (Hubbs 1932; Bailey *et al.* 1970; Robins *et al*. 1980; Williams and Wilde 1981). Williams and Wilde (1981) further refined White River springfish taxonomy by describing the following five subspecies based on significant morphological differences among populations from isolated springs along the pluvial White River in Nevada: (1) Preston White River springfish (*C. baileyi albivallis*), Moorman White River springfish (*C. b. thermophilus*), Hiko White River springfish (*C. b. grandis*), Moapa White River springfish (*C. b. moapae*), and White River springfish.

Very little information is available on the life history and habitat requirements of the White River springfish. However, more information is available for other *Crenichthys* subspecies, and because of the close relationship among the springfish subspecies, it is assumed that life history requirements and habitat needs for the White River springfish are similar to those of the other subspecies.

Adult White River springfish are found at varying depths, from 1.3 to 5.6 feet, but prefer deeper water at about 3.6 feet. Juvenile springfish will also use all depths, but generally occur in shallower water at about 2.1 feet and are more vertically dispersed. Larval springfish restrict their movement to the top of the water column from 0 to 2 feet and are found most frequently at 1.1 feet. All age classes are present in areas of calm water (Tuttle *et al*. 1990).

White River springfish are feeding generalists (Deacon and Minckley 1974; Williams and Williams 1982; Wilde 1989). Invertebrates, especially amphipods, are the most

important items in their diets (Wilde 1989). Williams and Williams (1982) found Preston White River springfish to be predominantly herbivorous, although some individuals consumed large quantities of midges and caddisfly larvae. Differences in diet probably result from differences in habitat that dictate food item availability. Wilde (1989) noted a shift in diet to herbivory in the winter when invertebrates were not abundant. Springfish forage along the substrate and in plants. They are active only during the daytime, with peaks occurring in the morning and afternoon.

Springfish spawning is asynchronous, where individual females will spawn at different times of the year (Deacon and Minckley 1974). Most females average two spawning periods a year, while the spawning season of the entire population extends over a long period of time each year. The period of spawning activity may be regulated by the primary productivity in the spring system (Schoenherr 1981).

c. Distribution

Ash Springs is located in Pahranagat Valley approximately 100 miles northwest of Las Vegas, Nevada, and 9 miles north of the community of Alamo in Lincoln County, Nevada. White River springfish are found throughout the Ash Springs pool. They are also found infrequently in the outflow stream (Tuttle *et a*l. 1990). Historically, White River springfish were considered common in the Ash Springs area. With the introductions of mosquitofish in 1963, and convict cichlid (*Cichlasoma nigrofasciatum*), shortfin molly (*Poecilia mexicana*) and sailfin molly (*P. latipinna*) in 1964, White River springfish experienced a population decline (Service 1998). Additionally, Ash Springs is a popular recreational swimming area. From 1986 through 1989, the pool was drained annually to control algal growth, keeping White River springfish numbers low. The pool is no longer drained, although swimming continues primarily in the northern and southern ends of the spring pool, allowing the springfish to maintain a stable population in the pool.

d. Survival and Recovery Needs

A recovery plan for three listed fish species in Pahranagat Valley was completed in 1998. The recovery plan includes objectives and recovery actions for the Pahranagat roundtail chub (*Gila robusta jordani*), White River springfish, and Hiko White River springfish. The Pahranagat roundtail chub and Hiko White River springfish occur only on private land; the White River springfish occurs both on private and BLM-administered land.

The White River springfish may be considered for delisting when (1) a self-sustaining population comprising three or more age classes, a stable or increasing population size, and documented reproduction and recruitment is present in the spring pools of Ash Spring for three complete generations or a minimum of 6 consecutive years; and (2) impacts to the species and its habitat have been reduced or modified to a point where they no longer represent a threat of extinction or irreversible population decline. To meet

these criteria, the following recovery actions were identified in the recovery plan: (1) maintain and enhance aquatic and riparian habitats in the Pahranagat Valley; (2) develop and implement monitoring plans; (3) provide public information and education; and (4) establish and maintain refugia populations.

e. Abundance and Population Trends

Estimates of population size prior to 1998 varied between 1,200 individuals in 1986 to over 46,000 individuals in 1994 (Service 1998). Numbers were consistently lower (357 to 1,705 individuals) between 1986 and 1989 because the pool was drained annually to control algal growth. Once draining of the pool ceased, the population size improved (6,400 in 1991 to 46,275 in 1994). There are no current population estimates; however, based on observations it appears to be similar to pre-1998 estimates.

f. Threats

Reasons for listing the White River springfish include habitat alteration and the presence of nonnative species, which compete and prey upon the springfish. The use of water from the White River flow system for irrigation purposes has been ongoing for more than a century. Also, the Ash Spring pool is used for recreational swimming, although swimming does not necessarily preclude recovery of the springfish as long as areas are designated solely for springfish. Previous draining of the pool to control algal growth negatively affected population size in the 1980s, but this practice no longer occurs. Future development of groundwater resources to support population growth in the area may have an effect on the flows at Ash Springs.

Nonnative species such as shortfin molly and convict cichlids are considered a threat to the springfish. Mollies and cichlids, as well as springfish, are thermophilic; therefore, mollies and cichlids are abundant in areas occupied by springfish. In laboratory experiments, both the convict cichlid and shortfin molly were found to be extremely adept at larval predation. Competition for food between mollies and springfish was minimal, but greater between cichlids and springfish as cichlids are both omnivorous and thermophilic.

6. White River Springfish Critical Habitat- Status

Ash Springs is the southernmost, largest, and warmest of the three major spring systems found in Pahranagat Valley. Ash Springs consists of at least seven springs which originate from a contact between alluvium and bedrock (Garside and Shilling 1979). The springs have a common outflow stream, which has been impounded by construction of U.S. Highway 93, and now forms a large pool. The spring pool provides good stream flow when the gate controlling the water level is open. Ash Springs was historically a stream with continuous flow before it was modified into the existing deep convoluted pool. Below the highway, the outflow stream flows southwest to join the outflow stream

from Crystal Spring. From this point on, the stream is referred to as the Pahranagat River (also known as the ditch).

The Ash Springs pool occupies a surface area less than 2 acres in size, and is approximately 0.2 mile long and 1.6 to 6.6 feet deep (Tuttle *et al*. 1990). The bottom consists of sand and silt with locally dense submergent vegetation and algal mats. A thick canopy of willow (*Salix* sp.) and ash trees (*Fraxinus* sp.) border the eastern bank while the west side is more sparsely vegetated with willow, ash, and grasses.

Critical habitat at Ash Springs encompasses approximately 12 acres, of which 11.9 acres are located on private land and 0.1 acre is located on land administered by BLM. Critical habitat includes the springs and associated outflows, as well as the surrounding land that supports vegetative cover that contributes to the uniform water conditions preferred by the springfish and provides habitat for insects and other invertebrates which constitute a substantial portion of their diet.

7. Pahrump Poolfish- Rangewide Status

a. Listing History

On March 11, 1967, the Service published a final rule listing the Pahrump killifish as endangered (32 FR 4001). Reasons for the listing included declines of the population and significant threats to its remaining habitat. On September 22, 1993, the Service published a proposed rule to reclassify the killifish from endangered to threatened status (58 FR 49279). On April 2, 2005, a notice was published withdrawing the proposed rule to reclassify the killifish to threatened status (69 FR 17383). The April 2 notice also recognized a change in the taxonomic status of the killifish from a subspecies to a species, based on the extirpation of all related subspecies. The fish is now known as the Pahrump poolfish (*E. latos*).

b. Species Account

The Pahrump poolfish is endemic to the Pahrump Valley in southern Nye County, Nevada. Three subspecies of *E. latos* historically occurred in Pahrump Valley, each existing in a separate spring – *E. l. latos*, *E. l. concavus*, and *E. l. pahrump*. The last two fish are now extinct and *E. l. latos* disappeared from its native habitat at Manse Spring in August of 1975. It is now the last representative of the genus *Empetrichthys* and only exists in transplanted populations.

The Pahrump poolfish is a small fish that obtains an average maximum length of 3 inches, with females generally larger than males (Service 1980; Deacon 1984a, 1984b, 1984c). The poolfish has a slender, elongate body with dorsal and anal fins placed far back, a broad upturned mouth, a dark longitudinal streak (which tends to disappear in older, larger individuals), and an orange ring around the eyes. On average, there are 30 to 32 scales in the lateral series (scales found along the lateral line, which is a series of pore-like openings along the sides of a fish), but the number may vary from as low as 29 to a high of 33 scales (Sigler and Sigler 1987; La Rivers 1994). Poolfish lack pelvic fins, but the dorsal, anal, and caudal fins are bright orange-yellow when the fish are in an environment of optimal temperature and dissolved oxygen (Selby 1977; Soltz and Naiman 1978). The pectoral fins of the species typically have 16 to 18 rays (Sigler and Sigler 1987). The body of the poolfish is generally greenish-brown with black mottling, but males may be silver-blue without mottling during the spawning season (Soltz and Naiman 1978; Service 1980).

Poolfish are opportunistic omnivores, eating a wide variety of available animal and plant material (Deacon *et al*. 1980; NDOW 1999). Dietary studies have shown that debris, insects, snails, zooplankton and plants comprise the majority of their diet (Deacon *et* al. 1980; NDOW 1999; Hobbs *et al*. 2003, in prep.). Poolfish utilize all portions of the pool, with larger adults in the open, deeper waters and smaller adults and juveniles in shallow, vegetated areas (Deacon *et al*. 1980; Service 1980). Given the partitioning of habitat by age class, it is likely that different food resources are available to and consumed by adults and juveniles.

Poolfish have a fairly broad thermal tolerance. Despite the fact that the native habitat of the poolfish remained nearly constant at 75.2° F, the transplanted populations have demonstrated the ability to withstand a wider range of water temperatures. At Corn Creek Springs, poolfish survived in waters covered by ice at 39.2° F (Selby 1977). At another site, the species withstood temperatures ranging from below 50.9° to 77° F for 5 years (Selby 1977).

Spawning occurs from January to July, with a peak in April (D. Selby, *in litt*. 1976; Baugh *et al*. 1987). In transplanted populations, breeding periods are delayed (breeding typically occurs in late May or early June), possibly due to cooler water temperatures. Females measuring 1.8 to 1.9 inches total length lay an average of 14 eggs per female (Baugh *et al*. 1987). Development of poolfish eggs occur over a period of 2 to 3 weeks (D. Selby, *in litt*. 1976).

c. Distribution

Currently, poolfish are located at Corn Creek Spring refugium on the Desert National Wildlife Range northwest of Las Vegas, Clark County, Nevada; Shoshone Ponds Natural Area on lands managed by BLM southeast of Ely, White Pine County, Nevada; and in an

irrigation reservoir at the State of Nevada's Spring Mountain Ranch State Park (SMRSP), west of Las Vegas in Clark County, Nevada (Figure 3).

Historically, Pahrump poolfish only occurred in an isolated spring, Manse Spring, on private property known as Manse Ranch in the Pahrump Valley, southern Nye County, Nevada. In 1975, poolfish were extirpated from Manse Spring as a result of desiccation of the spring from groundwater pumping and competition from nonnative goldfish (Deacon *et al*. 1964; J. Deacon, *in litt*. 1970). Anticipating the loss of flow at Manse Spring (Minckley and Deacon 1968), poolfish were removed from the spring during the early 1970s and transplanted into three locations in Nevada: (1) Los Latos Pool; (2) Corn Creek Spring; and (3) Shoshone Ponds Natural Area. Transplanted poolfish at Los Latos Pool were lost during floods in the late 1970s, and individuals were never replaced at this location. Poolfish at Shoshone Ponds were lost to vandalism in 1974 when the water source was intentionally turned off. Modifications were made to the ponds' water system to try to prevent future vandalism, and the poolfish were replaced in August 1976 with fish from Corn Creek (L. McLelland, Nevada Division of Fish and Game (NDFG), *in litt*. 1976; Logan 1977; M. Barber *in litt*. 1987). In June 1983, a third population of poolfish was established in the irrigation reservoir at SMRSP to replace the population lost at Los Latos Pool, using poolfish from the Corn Creek Spring refugium (Richard Haskins, NDFG, *in litt*. 1983).

All three transplanted populations of poolfish reproduced successfully and thrived in their new habitats between 1986 and 1993 (NDOW 1988a, 1988b; Sjoberg 1989; Heinrich 1991a, 1991b, 1993). In the late 1990s, the population at Corn Creek was lost to illegally introduced nonnative crayfish (*Procambarus clarkii*) (NDOW 1999). The last three poolfish were found at Corn Creek during summer surveys in 1998 and no other poolfish were captured during surveys in subsequent years (NDOW 1999, 2000). A new, isolated refugium for the poolfish was built at Corn Creek in 2002 and poolfish were transplanted to the refugium in 2003.

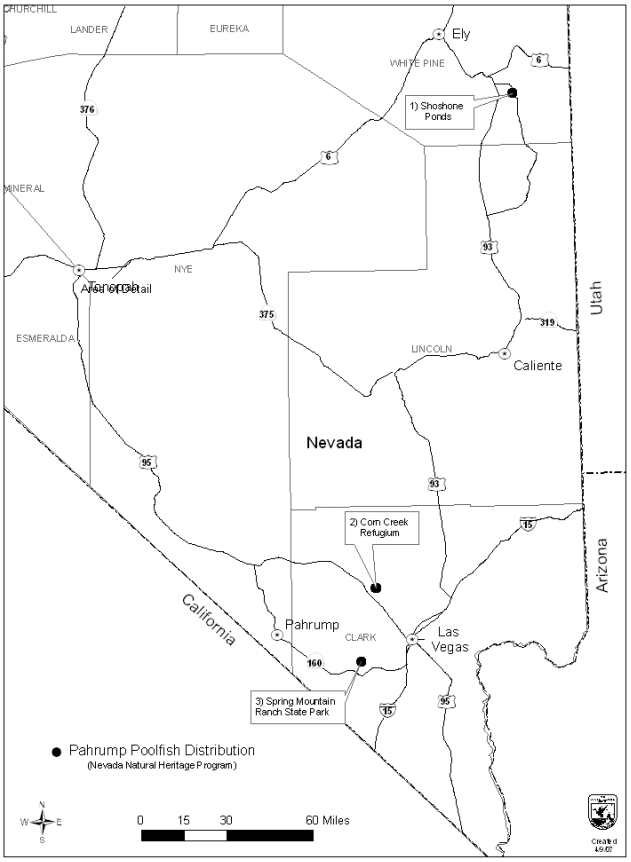


Figure 3. Present distribution of Pahrump poolfish. The three locations are: (1) Shoshone Ponds; (2) Corn Creek Refugium on the Desert National Wildlife Range; and (3) in an irrigation reservoir at Spring Mountain Ranch State Park. Distribution data provided by the Nevada Natural Heritage Program.

d. Survival and Recovery Needs

When the Pahrump killifish was listed in 1967 under the Endangered Species Preservation Act, the species was not subject to the same listing process used under the current Act. Upon authorization of the Act, the Pahrump poolfish was grandfathered in as an endangered species; and the five-factor threats assessment required for listings under the Act was not conducted. In 1980, the Service completed a recovery plan for the Pahrump poolfish, which includes recovery objectives and downlisting and delisting goals for the species. Under current policy, recovery plans must identify criteria for downlisting and delisting a species; however, under the 1980 poolfish recovery plan, downlisting and delisting goals are discussed as part of the rationale for the recovery objectives (Service 1980). The recovery plan includes the best scientific and commercial

data available at the time of publication; however, portions of the plan are now significantly outdated.

Since Pahrump poolfish no longer occur in their natural habitat, recovery objectives in the recovery plan focus on the protection and management of poolfish populations in their transplanted habitats, namely Corn Creek Spring, Shoshone Ponds, and SMRSP. The primary recovery goal identified in the recovery plan is to successfully establish and maintain at least three viable, reproducing populations. Each of the populations should maintain a minimum of 500 adults. If each of the populations maintains this number for 3 years, the species may then be considered for reclassification to threatened status. The habitat must be free of immediate and potential threats to permit the change in status. The recovery plan suggests that a 3-year period, with a minimum adult population of 500 fish in each location each year, be considered an evaluation interval. If, after an additional 3-year interval, the population continues to sustain 500 adults per year per location count, consideration should be given to delist the species. Prior to 1995 this objective had been met, but due to a proposed renovation project at SMRSP and loss of an entire population at Corn Creek Spring, the status of Pahrump poolfish was not changed.

Other recovery objectives for the poolfish include: (1) preserving and protecting existing transplanted Pahrump poolfish; (2) establishing and protecting viable self-sustaining Pahrump poolfish populations in suitable new or restored habitats; (3) conducting ecological studies and applying findings to management of Pahrump poolfish and its habitats; (4) delineating essential habitat for species preservation; (5) enforcing laws and regulations protecting Pahrump poolfish and its essential habitat; and (6) informing the public of Pahrump poolfish status and recovery plan objectives.

e. Abundance and Population Trends

Surveys are being conducted annually by NDOW to monitor the status of Pahrump poolfish populations at Shoshone Ponds, SMRSP, and Corn Creek as part of the recovery objectives identified in the recovery plan. Poolfish are trapped using standard minnow traps and marked before release. Population estimates are calculated using a mark-recapture method.

Shoshone Ponds: Shoshone Ponds is a series of three small excavated ponds (north, middle, and south) fed by an artesian well, one large spring-fed stock pond, and one artesian well outflow. Poolfish inhabit the north, middle and stock pools. Since the 1980s, poolfish populations have remained stable with only natural population fluctuations affecting their status (NDOW *in litt*. 2003b). However, surveys in 2003 detected a significant decrease in the population to less than 1,000 fish (NDOW *in litt*. 2003b). The cause for the decline is unknown; however, it was likely that the decline stemmed from degradation of the pond banks and sheet flows allowing for the dispersal of fish. Subsequent surveys in July 2004 and August 2005 detected substantial increases

in the populations (NDOW 2004, 2005a, 2005b). Poolfish were also found in the outflow of the artesian well in 1999 and 2004, indicating the poolfish populations at Shoshone Ponds may be higher than estimated (NDOW 1999, 2004). In 2005, NDOW concluded that poolfish populations at Shoshone Ponds are stable and healthy (NDOW 2005b).

Spring Mountain Ranch State Park: Poolfish are currently the only fish in the irrigation reservoir at SMRSP. In 1983, 426 poolfish were introduced into the reservoir after exotic fishes were eradicated from the site (Haskins, NDFG, *in litt*. 1983). Poolfish populations have fluctuated since being introduced, decreasing from a high of almost 60,000 fish in 2002 to a low of just under 10,000 in 2006 (NDOW 2006). Despite these fluctuations, the population at SMRSP is the largest and most stable of the transplanted poolfish populations.

Corn Creek Refugium: Poolfish are found in two separated tanks (north and south) in an isolated refuge at Corn Creek. In 2003, 120 adult poolfish were transferred to observation tanks at the Corn Creek refugium from the SMRSP population. Visual surveys conducted by the Service in 2003 after the fish were introduced revealed 8 young poolfish. Surveys completed in 2004 and 2005 yielded 142 and 186 fish (NDOW 2005b), and observations of many larval fish by Service personnel during June of 2006 suggest that there is a large rate of reproduction. In late summer of 2006, surveys revealed that the population had decreased to 76 fish. Because the observation tanks at the refugium are likely not large enough to support a viable self-sustaining population, NDOW recommends attempting to rehabilitate and introduce poolfish into the adjacent ponds with the expectation of creating a population that would persist into the future.

f. Threats

Historically, the primary threat to the poolfish has been the loss of habitat due to groundwater withdrawals. Both *E. l. concavus* and *E. l. pahrump* were extirpated due to desiccation of their native habitat caused by groundwater withdrawals in Pahrump Valley, and the Pahrump poolfish no longer exists in its native habitat due to the loss of flows at Manse Spring. Adequate, reliable water sources are necessary to ensure that currently occupied ponds provide suitable habitat for the poolfish. The potential for long-term declines in spring flows due to groundwater pumping from areas in the vicinity of existing poolfish habitat remains a threat to all populations. Threats to water sources necessary for poolfish habitat have been minimized to the extent possible by state and Federal agencies who administer the land within which poolfish habitat occurs by acquiring water rights that will secure the water supply for poolfish populations. However, all of the groundwater rights held by other local water agencies are not currently being utilized, and increasing demand for water to accommodate growing human populations and expanding urban development in the arid southwest will likely encourage the full utilization of these unused water rights (Southern Nevada Water Authority 2008).

Predation by introduced nonnative aquatic species has likely contributed to the decline of poolfish in their native habitats. In 1975, the population of poolfish at Corn Creek Springs experienced a rapid reduction as a result of unauthorized introduction of nonnative mosquitofish (*Gambusia affinis*). A coordinated effort among State agencies, academic institutions, and the Service successfully eradicated the mosquitofish (Selby 1977). The stability of this population was again threatened when nonnative crayfish were illegally introduced into the ponds at Corn Creek Springs. Surveys first noted the presence of crayfish in 1993, and thereafter the poolfish population rapidly declined (NDOW 1999). Despite attempts to eliminate crayfish, the poolfish population was extirpated by 1999. Nonnative common goldfish were also discovered at Corn Creek Springs in 1998 (NDOW 1999). The presence of competing and predatory goldfish may have compounded the problem of an already declining population of poolfish. Efforts by state agencies and volunteers to eradicate crayfish from Corn Creek Springs have been unsuccessful (NDOW in litt. 2001a). Subsequently, an isolated refugium for the poolfish was constructed at Corn Creek Springs in 2002, and poolfish taken from SMRSP were transplanted into the refugium in June and July of 2003 (NDOW *in litt*. 2003a). Currently, populations at SMRSP and Shoshone Ponds have not been significantly affected by nonnative aquatic species. However, the recent loss of the population at Corn Creek Springs illustrates that the poolfish is vulnerable to extinction as a result of predation by aquatic nonnative species.

8. Southwestern Willow Flycatcher- Rangewide Status

a. Listing History

The flycatcher was listed as endangered without critical habitat on February 27, 1995 (60 FR 10694). Critical habitat was originally designated on July 22, 1997 (62 FR 39129) and redesignated on October 19, 2005 (70 FR 60886). A total of 737 river miles in southern California, Arizona, New Mexico, southern Nevada, and southern Utah were included in the final designation. A final recovery plan for the flycatcher was completed in March 2003 (Service 2002).

b. Species Account

The southwestern willow flycatcher (flycatcher) is a small grayish-green passerine bird (Family Tyrannidae) measuring approximately 5.75 inches. The song is a sneezy “fitz-bew” or a “fit-a-bew,” the call is a repeated “whitt.” It is one of four currently recognized willow flycatcher subspecies (Phillips 1948, Unitt 1987, Browning 1993).

The flycatcher breeds in dense riparian habitat from sea level in California to approximately 8,500 feet in Arizona and southwestern Colorado. Historical egg/nest collections and species descriptions throughout its range describe widespread use of willow (*Salix* spp.) for nesting (Phillips 1948, Phillips *et al*. 1964, Hubbard 1987, Unitt

1987, San Diego Natural History Museum 1995). Currently, flycatchers primarily use Geyer willow (*Salix geyeriana*), coyote willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), boxelder (*Acer negundo*), salt cedar (*Tamarix* sp.), Russian olive (*Elaeagnus angustifolia*), and live oak (*Quercus agrifolia*) for nesting. Other plant species less commonly used for nesting include: buttonbush (*Cephalanthus* sp.), black twinberry (*Lonicera involucrata*), cottonwood (*Populus* spp.), white alder (*Alnus rhombifolia*), blackberry (*Rubus ursinus*), and stinging nettle (*Urtica* spp.).

Throughout its range the southwestern willow flycatcher arrives on breeding grounds in late April and May (Sogge and Tibbitts 1992, Sogge and Tibbitts 1994, Sferra *et al*. 1997). Nesting begins in late May and early June and young fledge from late June through mid-August (Willard 1912, Ligon 1961, Brown 1988, Sogge and Tibbitts 1992, Muiznieks *et al*. 1994). Southwestern willow flycatchers typically lay three to four eggs per clutch (range 1-5). Eggs are laid at one-day intervals and are incubated by the female for about 12 days (Bent 1960, Walkinshaw 1966, McCabe 1991). Young fledge about 12 to 13 days after hatching (King 1955, Harrison 1979). Typically one brood is raised per year, but birds have been documented raising two broods during one season and renesting after a failure (Whitfield 1990, Sogge *et al*. 1993, Whitfield and Strong 1995). The entire breeding cycle, from egg laying to fledging, is about 28 days.

Southwestern willow flycatcher territory size likely fluctuates with population density, habitat quality, and nesting stage. Territories are established within a larger patch of appropriate habitat sufficient to contain several nesting pairs of flycatchers. Cardinal and Paxton (2005) found that the home ranges of telemetered flycatchers at Roosevelt Lake, Arizona, varied from 0.37 to 890 acres. Birds were found using a variety of riparian habitat in a variety of conditions (open, young mature, exotic, mixed, etc.) and the distances moved indicate that birds can occupy a larger area and use more types of habitat than previously believed (Cardinal and Paxton 2005).

Salt cedar is an important component of the flycatcher's nesting and foraging habitat in Arizona and other parts of the bird's range. In 2001 in Arizona, 323 of the 404 (80 percent) known flycatcher nests (in 346 territories) were built in a salt cedar tree (Smith *et al*. 2002). Salt cedar is considered by some to be a habitat type of lesser quality for the southwestern willow flycatcher, however comparisons of reproductive performance (Service 2002), prey populations (Durst 2004), and physiological conditions (Owen and Sogge 2002) of flycatchers breeding in native and exotic vegetation has revealed no difference.

Open water, cienegas, marshy seeps, or saturated soil are typically in the vicinity of flycatcher territories and nests; flycatchers sometimes nest in areas where nesting substrates are in standing water (Maynard 1995, Sferra *et al*. 1997). Hydrological conditions at a particular site can vary remarkably in the arid Southwest within a season and among years. At some locations, particularly during drier years, water or saturated soil is only present early in the breeding season (*i.e*., May and part of June). However,

the total absence of water or visibly saturated soil has been documented at several sites where the river channel has been modified (*e.g*. creation of pilot channels), where modification of subsurface flows has occurred (*e.g.* agricultural runoff), or as a result of changes in river-channel configuration after floods (Spencer *et al*. 1996).

c. Distribution

The flycatcher is a neotropical migrant that breeds in the southwestern U.S. and migrates to Mexico, Central America, and possibly northern South America during the non-breeding season (Phillips 1948, Stiles and Skutch 1989, Peterson 1990, Ridgely and Tudor 1994, Howell and Webb 1995). The historical breeding range of the flycatcher included southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern Utah, extreme southern Nevada, and extreme northwestern Mexico (Sonora and Baja) (Unitt 1987). The flycatcher's distribution is confined to riparian areas along waterways within the range of the species.

The site and patch fidelity, dispersal, and movement behavior of adult, nestling, breeding, non-breeding, and migratory southwestern willow flycatchers are just beginning to be understood (Kenwood and Paxton 2001, Koronkiewicz and Sogge 2001). Most southwestern willow flycatchers return to former breeding sites, although flycatchers can regularly move among sites within and between years (Kenwood and Paxton 2001). Within-drainage movements are more common than between-drainage movements (Kenwood and Paxton 2001). Year-to-year movements of birds have been detected between the San Pedro/Gila river confluence and Roosevelt Lake, the Verde River near Camp Verde and Roosevelt Lake, and the Little Colorado River near Greer and Roosevelt Lake (Kenwood and Paxton 2001). Typical distances moved range from 1.2 to 18 miles. However, long-distance movements of up to 137 miles have been observed on the lower Colorado River and Virgin River (McKernan and Braden 2001). Breeding groups of southwestern willow flycatchers act as a meta-population (Busch *et al*. 2000).

d. Survival and Recovery Needs

There are no extensive records for the actual causes of adult southwestern willow flycatcher mortality. Incidents associated with nest failures, human disturbance, and nestlings are typically the most often recorded due to the static location of nestlings, eggs, and nests. As a result, nestling predation and brood parasitism are the most commonly recorded causes of southwestern willow flycatcher mortality. Band returns at Roosevelt Lake determined that the average adult return rate from 1998 to 2004 was 60 percent with survivorship estimated at 65 percent (Newell *et a*l. 2005). From 1998 to 2004, the average nestling return rate was 28 percent and survivorship estimated at 35 percent (Newell *et al*. 2005).

Intensive nest monitoring efforts in California, Arizona, and New Mexico have shown that cowbird parasitism and predation can result in the following: failure of the nest;

reduced fecundity in subsequent nesting attempts; delayed fledging; and reduced survivorship of late-fledged young. Cowbirds have been documented at more than 90 percent of sites surveyed (Sogge and Tibbitts 1992, Camp Pendleton 1994, Sogge and Tibbitts 1994, Holmgren and Collins 1995, Maynard 1995, San Diego Natural History Museum 1995, Sogge 1995b, Skaggs 1996, Whitfield and Enos 1996, Tomlinson 1997, McCarthey *et al*.1998). The probability of a southwestern willow flycatcher successfully fledging its own young from a cowbird parasitized nest is low (*i.e*., <5 percent). Also, nest loss due to predation appears consistent from year to year and across sites, generally in the range of 30 to 50 percent.

A final recovery plan for the southwestern willow flycatcher was signed in 2002 (Service 2002a). The Plan describes the reasons for endangerment and current status of the flycatcher, addresses recovery actions, includes detailed papers on management issues, and provides recovery goals. The recovery plan divides the range of the flycatcher into six recovery units, which were further divided into management units. Recovery is based on reaching numerical and habitat-related goals for each specific management unit established throughout the subspecies range and establishing long-term conservation plans (Service 2002a). Flycatcher habitat within the proposed action area occurs within the Lower Colorado recovery unit and the Pahranagat management unit (Figure 4).

e. Abundance and Population Trends

Unitt (1987) documented the loss of more than 70 southwestern willow flycatcher breeding locations rangewide estimating the rangewide population at 500 to 1000 pairs. Since 1993, a total of 122 sites once known to have breeding flycatchers are no longer occupied by nesting birds. Numbers have increased since the bird was listed and some habitat remains unsurveyed; however, after more than a decade of intense surveys, the existing known numbers are just past the upper end of Unitt's 1987 estimate.

Rangewide, the population is comprised mostly of extremely small, widely-separated breeding groups including unmated individuals. However, across the bird's range, 3 percent of all sites support greater than 50 territories (Durst *et al.* 2005).

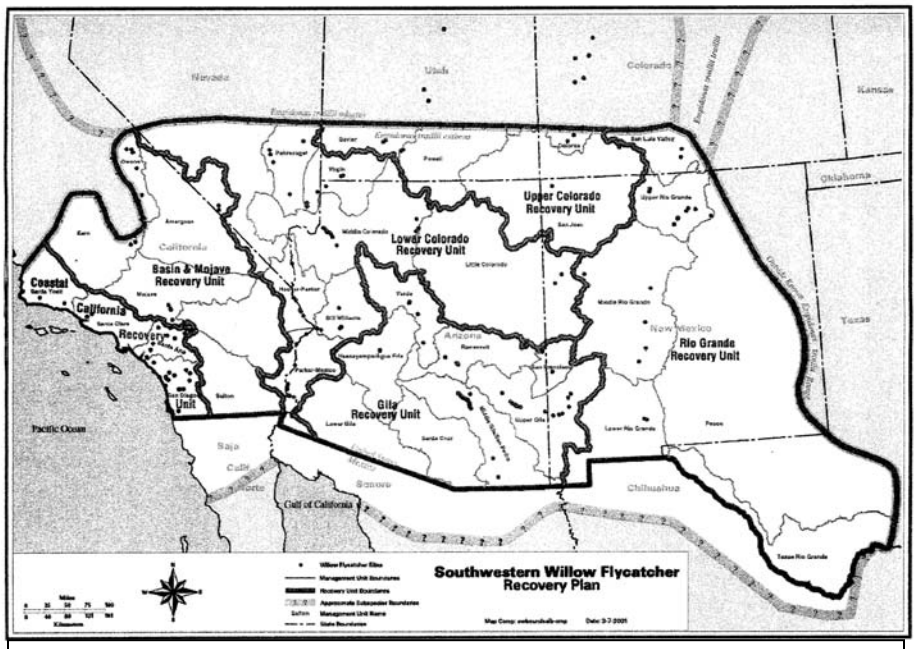


Figure 4. Southwestern willow flycatcher recovery and management units.

There are currently 284 known flycatcher breeding sites in California, Nevada, Arizona, Utah, New Mexico, and Colorado (all sites from 1993 to 2006 where a resident flycatcher has been detected) holding an estimated 1,262 territories (Durst *et al*. 2007). Approximately 50 percent of the 1,262 territories currently estimated throughout the range of the species are located at four general locations (Cliff/Gila Valley, New Mexico; Roosevelt Lake, Arizona; San Pedro River/Gila River confluence, Arizona; Middle Rio Grande, New Mexico).

The distribution of breeding groups is highly fragmented, often separated by considerable distance. In Arizona, about a 55-mile straight-line distance exists between breeding flycatchers at Roosevelt Lake and the next closest territories on the San Pedro River or Verde River. Long distances between breeding groups and small size of those populations reduces meta-population stability and increases the risks of local extirpation due to stochastic events, predation, cowbird parasitism, and other factors (Service 2002a). Conversely, having about 50 percent of the entire subspecies at four locations can also create instability should catastrophic events occur that would remove or significantly reduce habitat suitability at those places. The survival and recovery of the flycatcher is not dependent on having a few locations with large numbers of birds, but rather properly distributed populations throughout the subspecies' range placed close together (Service 2002a).

f. Threats

Reasons for decline of flycatcher populations have been attributed primarily to loss, modification, and fragmentation of riparian breeding habitat, along with a host of other factors including loss of wintering habitat and brood parasitism by the brown-headed cowbird (Sogge *et al*. 1997; McCarthey *et al*. 1998). Habitat loss and degradation are caused by a variety of factors, including urban, recreational, and agricultural development, water diversion and groundwater pumping, channelization, dams, and livestock grazing. Fire is an increasing threat to willow flycatcher habitat (Paxton *et al*. 1996), especially in monotypic salt cedar vegetation (DeLoach 1991) and where water diversions and groundwater pumping desiccates riparian vegetation (DeLoach 1991) and where water diversions and groundwater pumping desiccates riparian vegetation (Sogge *et al*. 1997). Willow flycatcher nests are parasitized by brown-headed cowbirds, which lay their eggs in the host's nest. Feeding sites for cowbirds are enhanced by the presence of livestock and range projects such as waters and corrals; agriculture; urban areas; golf courses; bird feeders; and trash areas. When these feeding areas are in or near flycatcher breeding habitat, especially coupled with habitat fragmentation, cowbird parasitism of flycatcher nests may increase (Hanna 1928; Mayfield 1977; Tibbitts *et al*. 1994).

Many activities continue to adversely affect the distribution and extent of all stages of flycatcher habitat throughout its range (development, urbanization, grazing, recreation, native and non-native habitat removal, dam operations, river crossings, ground and surface water extraction, etc.). Stochastic catastrophic events also continue to change the distribution, quality, and extent of flycatcher habitat.

E. Environmental Baseline

1. Desert Tortoise

a. Status of the Desert Tortoise in the Action Area

Desert tortoises occur in the planning area primarily in the Sonora-Mojave Creosotebush-White Bursage Desert Scrub (Creosote-Bursage) and Mojave Mid-Elevation Mixed Desert Scrub (Mixed Desert Scrub) ecological systems. The Creosote-Bursage ecological system forms the vegetation matrix in broad valleys, lower bajadas, plains and low hills in the Mojave and lower Sonoran deserts. This desert scrub is characterized by a sparse to moderately dense layer (2-50 percent cover) of xeromorphic microphyllous and broad-leaved shrubs. Creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) are typical dominants with many different shrubs, dwarf-shrubs, and cacti that co-dominate or form sparse understories.

The Mixed Desert Scrub ecological system represents the extensive desert scrub in the transition zone above the Creosote-Bursage ecological system. This community is also

common on lower piedmont slopes in the transition zone into the southern Great Basin. The vegetation in this ecological system is quite variable.

There are approximately 1.2 million acres of potentially suitable desert tortoise habitat in the planning area. Desert tortoises may occur wherever suitable habitat is available. For analysis purposes, the Service assumes that most desert tortoise habitat consists of Mojave Desert scrub vegetation and occurs below 4,200 feet elevation. Approximately 265,742 acres have been designated as critical habitat. Desert tortoise sign have been found in the planning area from Ash Springs southward. Desert tortoises occur in scattered patches of suitable habitat throughout southern Lincoln County with areas of concentration occurring along Kane Springs Wash, Meadow Valley Wash, and the region just south of the Tule Springs Hills. Approximately 5 adult/subadult tortoises occur per square mile within the Northeast Mojave Recovery Unit (Service 2006) which includes the Mormon Mesa and Beaver Dam Slope ACECs and CHUs.

Three ACECs (Kane Springs, Mormon Mesa, and Beaver Dam Slope) were designated by BLM to assist in the recovery of the desert tortoise within the planning area. These ACECs encompass the best available habitat in the vicinity and include 212,500 acres or approximately 80 percent of the designated critical habitat for the desert tortoise in the planning area (BLM 2000). Portions of three wilderness areas overlap the Kane Springs and Mormon Mesa ACEC and desert tortoise habitat north of the ACECs. The remaining 20 percent or approximately 53,242 acres, of desert tortoise critical habitat occurs outside these three ACECs within the planning area.

The kernel analysis conducted by the Desert Tortoise Recovery Plan Assessment Committee (Tracy *et al.* 2004) which included the Coyote Springs DWMA showed areas where the distributions of carcasses and living tortoises do not overlap; however, densities of adult tortoises for the region do not show a statistical trend over time. Thus, while there may be a local die-off occurring in the northern portion of this DWMA, this does not appear to influence the overall trend in the region as interpreted by study plot data. Large regions of non-overlapping carcass and live tortoise kernels in the regions were not identified adjacent to the Coyote Springs DWMA. The probability of finding either a live tortoise or a carcass was relatively very low for Beaver Dam Slope and moderately low for Mormon Mesa/Coyote Springs.

b. Factors Affecting the Desert Tortoise in the Action Area

Wildfires. The 2005 wildfires burned approximately 309,155 acres of desert tortoise habitat which includes 44,872 acres of desert tortoise critical habitat. Desert tortoise mortality/injury estimates are not available for the wildfires. Wildfire occurred in desert tortoise habitat in years before and after 2005 but were relatively minor in their effect to the desert tortoise.

On April 12, 2006, the Service issued a biological opinion (File No. 1-5-05-F-526) to BLM for the Southern Nevada Fire Complex Fire Suppression Actions and Proposed Burned Area Emergency Response Treatments, in Clark and Lincoln counties, Nevada, and Washington County, Utah. BLM fire suppression actions that resulted in adverse effects to the desert tortoise and its habitat included fireline construction, off-road travel, air operations, burnouts and backfires, and base and spike camps. Habitat stabilization and rehabilitation efforts include seeding native species.

On October 30, 2006, the Service issued a biological opinion (File No. 1-5-06-F-551) to BLM's Ely and Las Vegas districts for conducting emergency stabilization treatments on areas burned in the 2005 wildfires. Treatments in desert tortoise habitat include: seeding of native plants on approximately 3,000 acres of designated critical habitat for the desert tortoise; horse and burro removal; repairing damaged livestock fencing to protect seeded areas; constructing 33 miles of fencing to protect burned areas; placing safety signs to warn of flood danger; temporarily closing and increasing patrols on undesignated motorized routes; and installing protective cages around emerging and remaining Joshua trees (*Yucca brevifolia*) and yuccas to protect them from grazing and browsing. Many of these treatments are complete but seeding treatments will continue.

Roads. A major highway, US 93, connects Interstate 15 (I-15) in northern Clark County with communities in eastern and northern Nevada. Major unpaved roads also connect to I-15 and provide access into the planning area which includes Toquop Wash Road, Carp-Elgin Road, and Halfway Wash Road. State Route 168 connects US 93 with I-15 and also connects with Meadow Valley Wash Road which parallels the Union Pacific Railroad line and travels north into the planning area. Kane Springs Road is a major unpaved road which connects US 93 in Coyote Springs Valley with Meadow Valley Wash Road near Elgin.

A road network exists in the planning area which provides public access to desert tortoise habitat otherwise generally inaccessible by vehicles. Existing roads and trails within critical habitat and all but approximately 70,000 acres of non-critical habitat have been inventoried. Approximately 516 miles of roads occur in non-critical habitat and 463 miles occur within critical habitat (BLM 2008).

Mineral Extraction/Mining. Existing oil and gas leases cover approximately 34,580 acres within the Beaver Dam Slope ACEC and 9,625 acres within the Mormon Mesa ACEC (BLM 2008). Outside ACECs, existing leases cover approximately 28,740 acres in desert tortoise critical habitat and 43,422 acres of non-critical habitat.

Grazing. Grazing by cattle and sheep has occurred in the planning area since the mid-1800s, increasing in intensity near the turn of the 19th century. All grazing allotments in the planning area are classified as perennial allotments with term permits issued by BLM to authorize grazing use based on perennial vegetation. The Beacon, Sand Hollow, and Rox-Tule grazing allotments, and portions of the Breedlove, Delamar, Gourd Springs,

Mormon Peak, Grapevine, and Lower Lake East allotments that occur within desert tortoise ACECs were closed under the Caliente MFP Amendment. Livestock grazing continued outside ACECs including areas within critical habitat but outside ACECs. After the wildfires of 2005, BLM issued partial and full temporary burn closures or reduced grazing for all but one allotment (Lower Lake West). To date, no monitoring data are available to the Service for livestock grazing in desert tortoise habitat that would provide the basis for assessing the status of desert tortoise on each grazing allotment in tortoise habitat.

During tortoise surveys conducted in 1980, Karl (1982) observed that livestock grazing became noticeably heavier at the southwest entrance to Kane Springs Valley than in Coyote Springs Valley, as evident by many well-chewed perennial grasses, herds of up to 50 cattle, and the presence of red brome (*Bromus madritensis ssp. rubens*), an introduced non-native grass. Karl further observed that tortoise sign decreased to zero where grazing pressure became heavier in comparison to observations in Coyote Springs Valley where she estimated densities up to 100 tortoises per square mile.

Under the CMFP Amendment, wild horses were managed outside ACECs on approximately 32,200 acres of desert tortoise habitat within the Blue Nose Peak HMA. Emergency wild horse gathers occurred within desert tortoise habitat in 2000, 2002, and 2006 to remove stray animals. BLM does not manage wild horse HMAs in desert tortoise habitat.

Rights-of-Way. On December 21, 1990, the Service issued a biological opinion (File No. 1-1-87-F-36R to the Federal Energy Regulatory Commission (FERC) for construction of the Kern River and Mojave gas pipeline projects. The biological opinion evaluated the potential effects that may result from proposed activities on the federally-listed species including the desert tortoise. The Service concluded that 45 desert tortoises may be killed or injured; 424 desert tortoises harassed; and 93 desert tortoise nests destroyed. As of June 24, 1991, approximately 23 deaths and 253 harassments of desert tortoise were recorded by Kern River along the pipeline right-of-way. Problems associated with vehicular traffic on the right-of-way and access roads may have contributed to the mortalities in combination with high desert tortoise activity levels that were not anticipated. Consequently, on June 24, 1991, FERC requested reinitiation of formal consultation for the project based on a high incidence of desert tortoise mortality and harassment on the Kern River pipeline project, which may exceed those limits established in the incidental take statement. The Service responded by letter dated June 28, 1991, and imposed additional minimization measures, and increased the harassment limits for desert tortoise from 294 to an unlimited number and injury/mortality limits from 25 to 35 for only the Kern River segment of the project.

On April 28, 1998, the Service issued a biological opinion (File Nos. 1-5-98-F-032 and 6-UT-98-001) to BLM for issuance of a right-of-way for the FTV Western Build for construction of a buried fiber-optic cable within an existing right-of-way for the Kern

River gas transmission pipeline in Nevada and Utah. In Nevada, the project occurs over 95.5 miles in Clark and Lincoln counties. The project disturbed 153 acres of non-critical habitat and 142 acres of critical habitat in the Mormon Mesa and Beaver Dam Slope CHUs.

On December 8, 1999, the Service issued a biological opinion (File No. 1-5-99-F-411) to BLM for construction of the Level-3 fiber-optic line. The project disturbed 119 acres in the Mormon Mesa CHU along US 93 and 39 acres of non-critical habitat north and south of the Mormon Mesa CHU.

On July 9, 2003, the Service issued a biological opinion to the FERC for their approval of the Kern River 2003 Expansion Project which involved construction of an underground natural gas pipeline (File No. 1-5-02-F-476) approximately parallel to the 1991 Kern River project. The pipeline traversed the planning area and disturbed 1,007 acres of non-critical habitat and 542 acres of critical habitat for the desert tortoise. The Mormon Mesa and Beaver Dam Slope CHUs were impacted by the project. Only one desert tortoise was killed as a result of this project.

On December 20, 2007, the Service issued a biological opinion (File No. 84320-2008-F-0066) to BLM-Las Vegas for their proposal to amend an existing right-of-way for construction, operation, and maintenance of a single-circuit, overhead 500 kV transmission line (Southwest Intertie Project). The southern portion of the project begins at the Harry Allen Substation in Clark County, Nevada, crossing through the planning area, and ending approximately 34 miles north of Ely in White Pine County, Nevada. The project would disturb 231 acres of non-critical and 365 acres of critical desert tortoise habitat.

Land Disposals and Urbanization. On September 7, 2001, the Service issued a biological opinion to BLM for Phase I of the Lincoln County Land Act (LCLA) disposal (File No. 1-5-01-F-517). Under the LCLA, 13,500 acres of public lands would become available for disposal by BLM. The LCLA directs BLM to dispose of 4,817 acres of land not later than one year (Phase I), and 8,683 acres of land not later than 5 years (Phase II), after enactment of this law, for a total of 13,500 acres. As part of Phase I, BLM proposes to transfer 6,478 acres of public land to private ownership by competitive sale within one year.

BLM proposes to sell through a land disposal action, 640 acres of desert tortoise habitat which would be used to construct and operate the natural gas-fired Toquop Energy plant. On May 1, 2002, BLM requested formal consultation for their proposed disposal of 640 acres for development of the Toquop Energy Project. On June 11, 2002, the Service issued a biological opinion for the land disposal and construction of a gas-fired power plant (File No. 1-5-02-F-494). Subsequently, BLM discovered that the land proposed for the disposal was not identified within proposed disposal areas in the Caliente MFP Amendment, thus additional consultation was required. The Service determined that the

consultation should occur through reinitiation of consultation of the biological opinion for the Caliente MFP Amendment. On June 13, 2003, the Service issued a biological opinion (File No. 1-5-99-F-450.R) concluding reinitiation of consultation on the Caliente MFP Amendment which included the proposed 640-acre land disposal action for the Toquop Energy Project.

On July 13, 2007, the Service issued a biological opinion (File No. 1-5-07-F-487) to BLM for the proposed Alamo land sale. The disposal involves 855 acres of desert tortoise habitat. The Service estimates that 20 desert tortoises may be adversely affected by the land sale.

The human population has exploded in the communities adjacent to the Beaver Dam Slope CHU such as St. George and Mesquite. In 2005, St. George was considered to be the second-fastest-growing city in the U.S. The population of St. George in 2003 was 104,000 which is an increase of 15.2 percent since 2000. Similarly, the 2005 population of Mesquite, Nevada was 21,600 which represent an increase of approximately 39 percent since 2000 when the population was 15,500. The projected population of Mesquite in 2010 is 30,500. BLM land disposals in Lincoln County have facilitated community growth in southeastern Lincoln County which will result in increased use of public lands in the area and impacts to the desert tortoise and other species of concern.

Recreation. Under the biological opinion for the Caliente MFP Amendment, BLM authorized the Yuccachucker Motorcycle Race annually from 2000 through 2007; the Nevada 2000 Race (2000); the Nevada 1000 (2002); the Vegas to Reno Race (2003, 2006); and the Harden Dual Sport Motorcycle Ride (2007). BLM land is used by the public for casual recreation purposes including hunting, camping, hiking, and off-highway travel.

Geology and Mineral Extraction. Historically, most of Lincoln County has been leased for oil and gas resources (6,285,603 Acres). Currently there are 150,203 acres of active leases within desert tortoise habitat (some of these leases are in the Beaver Dam and Mormon Mesa ACECs).

c. Status and Factors Affecting the Species' Critical Habitat in the Action Area

The action area includes both critical and non-critical desert tortoise habitat. The action area occurs within the Northeastern Mojave Recovery Unit in the northern portion of the Mormon Mesa CHU, and western portion of the Beaver Dam Slope CHU. The Northeastern Mojave Recovery Unit occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona.

The status of the primary constituent elements (PCE) of desert tortoise critical habitat is described below. Effects to the PCEs that are anticipated to occur as a result of the

proposed action are not discussed here. Refer to the *Effects of the Action* section of this biological opinion for a discussion of anticipated effects to critical habitat as a result of the proposed action.

- PCE: *Sufficient space to support viable populations within each of the six recovery units, and to provide for movement, dispersal, and gene flow.*

  In 2005, wildfires burned approximately 46,757 acres (23 percent) of the Beaver Dam Slope CHU (Nevada and Utah) and 15,559 acres (4 percent) of the Mormon Mesa CHU. Although efforts are underway to rehabilitate these burned areas, it is unlikely that these acres will return to functional desert tortoise habitat for decades, thus reducing the space available for tortoises in these CHUs.

  Ongoing residential and commercial development associated with the Coyote Springs Investment project south of the planning area in Clark County but within the Mormon Mesa CHU, has resulted in loss of 7,550 acres of desert tortoise critical habitat. Desert tortoise movement and dispersal is currently limited in this area and will be further restricted as development proceeds northward into Lincoln County. Long-term effects of the development including gene flow are not known.

  Infrastructure such as power transmission lines and towers constructed in support of development has resulted in additional loss of critical habitat further reducing the amount of space available for the desert tortoise. For example, the Southwest Intertie electrical transmission project will adversely affect this PCE by disturbing or destroying 365 acres of critical desert tortoise habitat in the Mormon Mesa CHU.

  The extent of contiguous or large blocks of desert tortoise habitat in the Mormon Mesa and Beaver Dam Slope CHUs is reduced by railroads, major utility corridors, and major roads and highways such as I-15, US 93, SR 168, and Union Pacific railroad.

- PCE: *Sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species.*

  Although the additive effects of 100 years of livestock grazing have been substantial, some of the changes have occurred so slowly that they are almost imperceptible over a span of a few years. Plant communities with a short evolutionary history with grazing such as the Mojave Desert, are more likely to change when grazed by domestic animals than those communities with a long evolutionary history of grazing. The decline in native perennial grasses and their replacement with nonnative annual grasses over vast areas of the Midwest and West are associated with the introduction of large numbers of livestock following European settlement.

Grazing can affect soils by increasing soil compaction and decreasing infiltration rate, the capacity of the soil to absorb water. A lower infiltration rate means less water will be available for plants and more surface erosion may occur. In a review of studies investigating the hydrologic effect of grazing on rangelands, Gifford and Hawkins (1978) concluded that grazing at any intensity reduces the infiltration rate of the soil. Heavy grazing reduced infiltration rate by 50 percent and light to moderate intensities reduced infiltration by 25 percent over un-grazed areas. These differences are statistically significant.

Agriculture, including livestock grazing, is the principle source of nonnative plant introductions. Invasive weeds continue to affect this PCE by reducing the quality of forage available to the desert tortoise and facilitating wildfires. Wildfires in 2005 burned approximately 46,757 acres of critical habitat in the Mormon Mesa and Beaver Dam Slope CHUs. Nonnative grasses dominate burned areas in the CHUs affected by the 2005 wildfires. Forage for desert tortoises with home ranges that overlap burned areas will have reduced diversity and quantity of forage available.

Soil conditions may also be degraded locally, particularly in areas of livestock concentration. Cryptobiotic soil crusts in the CHUs are mostly impacted by livestock grazing and OHV activity. Removal or damage of the cryptobiotic crusts can have significant adverse effects on desert soils and nutrient cycling (Donahue 1999).

The Desert Tortoise Recovery Team determined that livestock grazing in DWMAs is not compatible with recovery (Service 1994). BLM allows livestock grazing on 46,663 acres in the Mormon Mesa and Beaver Dam Slope DWMAs/CHUs. The Service determined that livestock grazing contributes to an overall reduction in both the quality and quantity of forage for the desert tortoise, thus adversely affecting this PCE (refer to section on effects of livestock grazing for additional information).

- PCE: *Suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites.*

  Many large-scale disturbances such as mineral material sites, utility construction, and development have reduced the burrowing, sheltering, and nesting substrates for the desert tortoise. Wildfires have greatly reduced the availability of shrubs which serve as shelter sites for tortoises as discussed below. An unknown number of desert tortoise burrows have been damaged or destroyed by livestock.

- PCE: *Sufficient vegetation for shelter from temperature extremes and predators*.

  The Meadow Valley, Halfway, Garnet, Dry Middle, and Dry Rock fires of 2005 occurred in the Mormon Mesa CHU. These wildfires have effectively removed the shrub component over large areas which may not return or may require decades to recover and provide shelter for desert tortoises. In their monitoring plots, USGS

researchers determined that burned areas had a reduction of perennial cover from 31 percent to 12 percent. In the spring of 2006, nonnative annual grass production was significantly higher in burned areas, often three to five times higher, as compared with nearby unburned reference sites for all but one fire monitored including, Meadow Valley, Halfway, Dry Middle, Dry Rock and Garnet. This pattern of greater production of invasive annuals in burned areas persisted in 2007. Tortoises living in this landscape are faced with an altered environment including a lack of shrub cover.

Rights-of-way, particularly for linear projects such as power transmission lines, have removed the vegetative shelter for tortoises and provide a swath of bare ground across the landscape. Desert tortoises that cross, or attempt to cross these areas are highly visible to predators, particularly avian predators such as the common raven or red-tailed hawk (*Buteo jamaicensis*).

- PCE: *Habitat protected from disturbance and human-caused mortality.*

The Caliente MFP Amendment provided a level of protection to the desert tortoise within that portion of the DWMA that overlaps the Mormon Mesa, Kane Springs, or Beaver Dam Slope ACECs which would continue through the proposed action of this consultation. However, BLM's enforcement of protective measures is sporadic due to limited law enforcement staff. Any public assess into desert tortoise habitat provides the opportunity for human-caused mortality including vandalism, trash dumping, poaching or killing of tortoises, and habitat degradation by traveling off road.

Critical habitat within the planning area and outside ACECs has been open to all forms of mineral extraction subject to section 7 consultation. The Beaver Dam Slope and Mormon Mesa ACECs/CHUs are open to fluid mineral leasing with no surface occupancy. Grazing on public lands continues on most of the Beaver Dam Slope CHU in Arizona and Utah.

Protected habitat for the desert tortoise (*i.e.* ACECs) continue to be affected by activities associated with mineral extraction, utility corridors which also serve as public roads, livestock grazing, and OHV use.

ACECs are protected from potential transfer to private ownership and subsequent development and habitat loss/degradation, livestock and wild horse grazing, and restrictions on potential mineral extraction activities. Portions of the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness Areas overlap the Mormon Mesa CHU as well as the Kane Springs and Mormon Mesa ACECs which provide additional protection.

2. Big Spring Spinedace

a. Status of the Big Spring Spinedace in the Action Area

The range of the Big Spring spinedace occurs entirely within the planning area of the RMP. The species exists within a 5-mile stretch of the Meadow Valley Wash that flows through Condor Canyon northeast of Panaca in Lincoln County. Riparian vegetation consists primarily of box elder, Gooddings willow, sandbar or coyote willow, and salt cedar. Cottonwoods are also present. Common herbaceous riparian species include cattails (*Typha domingensis* and *T. latifolia*), redtop (*Agrostis stolonifera*), sedges (*Carex* sp.), and rushes (*Juncus* sp.). Water cress (*Nasturtium* sp.) occurs in patches within the stream channel. Adjacent upland areas contain pinyon-juniper vegetation typical of the Great Basin ecological system.

Aquatic habitat within the canyon has been altered, likely due primarily to historic mining and railroad development. In general, the channel is highly incised and filled with sediment. Daytime aquatic habitat conditions are relatively turbid. Dissolved oxygen averages 7.5 mg/L, and water temperature from May to September averages 50 to 72ºF, with daily fluctuations of about 16º. The substrate is predominantly sand/silt and gravel (NDOW 2006).

The most current information on population status is from surveys conducted by NDOW in 2006. Seven 25-meter plots were sampled using a triple-pass depletion model to provide an index of population size. Estimates ranged from approximately zero individuals per square meter at the base of the canyon to six individuals per square meter at locations above the waterfall. Compared to previous years' surveys, the population appears to be stable (NDOW 2001, 2002, 2004, 2005).

No quantitative information is available on water quality or water flow levels.

b. Factors Affecting the Big Spring Spinedace in the Action Area

Invasive Species

Invasive species negatively impact the Big Spring spinedace. Aquatic invasive plant species are common. Cattails bind silt substrate, creating habitat for other non-native aquatic species by removing gravel substrate that was used for reproduction and as a source of invertebrates for food. Both non-native crayfish and rainbow trout, which prey on spinedace, are very abundant and persist throughout the system.

Salt cedar has invaded the riparian area in the canyon. Salt cedar reduces aquatic habitat quality for native fish, alters fire regimes, and out-competes native vegetation. A large fire in the early 2000s substantially reduced upland and riparian vegetative cover, which

facilitated increased siltation of the aquatic habitat, and also enhanced the productivity of fire-adapted salt cedar and cattails.

Invasive Species Control

Weed control treatments have occurred in Condor Canyon since 2004. A small amount of Dalmatian toadflax (*Linaria dalmatica*) was removed, as well as approximately 1.3 acres of hoary cress (*Lepidium draba*) and 9.5 acres of salt cedar. Removal of salt cedar and other invasive aquatic plants may have short term adverse effects on the spinedace in the form of mortality from trampling in the stream during plant control activities, inadvertent introduction of chemical herbicides, and short term increases in sedimentation from bank instability as a result of salt cedar removal. Long-term benefits from removal of invasive species should include increased bank stability as native vegetation replaces nonnatives, decreased sedimentation, and less frequent incidence of wildfire.

Roads and Recreational Use

One main route, a one-track dirt road following an historic railroad bed, crosses private and BLM-administered lands through Condor Canyon. Damage to bridge structures, as well as erosion and lack of maintenance, has made a portion of the road unusable. The main road is most often used by OHVs. Additional spur trails originate from the road; however, they appear to be infrequently used. BLM visitor use records for 2007 estimated approximately 1,564 visitors to the area for that year.

No permitted or organized events currently occur within Condor Canyon. On average, one competitive OHV event per year utilizes existing roads and trails within the Condor Canyon watershed. Based on BLM post-use reports, the average number of participants for these events is 240.

Livestock grazing

Four livestock grazing allotments overlap the Condor Canyon area (Highland Peak, Black Hills, Condor Canyon, and N4/N5). Of these allotments, data for evaluating rangeland health standards have been collected only for N4/N5. The outcome of the evaluation is yet to be determined. N4/N5 is 43,500 acres in size, and is grazed year-long at an assigned use level of 825 AUMs. Black Hills is 3,610 acres in size, and is grazed yearlong at an assigned use level of 156 AUMs. Condor Canyon is 44,035 acres in size and is grazed from March 1 to January 24 at an assigned use level of 676 AUMs. Highland Peak is 45,542 acres in size, and is grazed from October 16 to May 15 at an assigned use level of 3,704 AUMs. Ongoing livestock grazing may result in mortality of fish and loss of eggs to trampling in the stream. Indirect effects to habitat quality such as siltation, loss of shading through removal of riparian vegetation, and water quality degradation may be occurring.

Mining

Past impacts from mineral extraction resulted from three mining claims which exist in the immediate vicinity of Condor Canyon and overlap with Big Spring spinedace critical habitat. Impacts from these mining activities included loss or alteration of habitat, sedimentation, and removal of riparian vegetation. These claims were closed in 1986. One active claim exists in the southwestern quarter of section 23, which encompasses a portion of the habitat in Condor Canyon.

c. Status and Factors Affecting the Species' Critical Habitat in the Action Area

Critical habitat for the Big Spring spinedace encompasses 4 miles of Meadow Valley Wash and a 50-foot riparian zone along each side of the stream as it flows through Condor Canyon. The primary constituent elements of Big Spring spinedace critical habitat include (1) clean, permanent, flowing, spring-fed stream habitat with deep pool areas and shallow marshy areas along the shore; and (2) the absence of nonnative fish.

The status of contaminates in the water is unknown, and to our knowledge has not been measured or monitored. General water parameters appear to be suitable for spinedace. Turbidity may be higher than historic conditions, but it is unknown how this may affect spinedace. The turbidity releases sediments, filling in deep pool areas, resulting in shallow, vegetated runs. Therefore, deep pools are probably less abundant or smaller in scale compared to historic conditions.

Nonnative species.

At the time the spinedace was listed, nonnative species were not known to occur at Condor Canyon. Since then, surveys have detected the establishment of one crayfish species and rainbow trout. Warm water game fish, including crappie and largemouth bass are occasionally present; however, they do not persist due to habitat conditions unsuitable for warm water fish. It is likely these fish are washed downstream from reservoirs during temporary connections from rain events. Specific effects to Big Spring spinedace from these non-native species are unknown; however, based on known effects to other species, Big Spring spinedace are most likely negatively affected by the presence of non-native species by way of predation and competition for food resources.

Crayfish are known to consume fish eggs and larvae, and capture and kill adult fish. Crayfish also increase turbidity, remove native vegetation, and eliminate macroinvertebrate communities that fish may use as a food resource. The occurrence of substantial numbers of crayfish in the Condor Canyon system likely limits the spinedace population.

Rainbow trout are trophically and behaviorally similar to spinedace, and these species likely compete for limited food resources. In addition to the trout's diet of invertebrates,

they are also piscivorous and may predate on spinedace. However, trout are not ideally suited to the habitat in Condor Canyon, and since they occur in low densities, their overall effect to the spinedace is most likely negligible.

3. White River Springfish

a. Status of the White River Springfish in the Action Area

White River springfish occurs entirely within the planning area of the RMP. The species exists in the Ash Springs pool, which was formed when US 93 was constructed and impounded the flow from a series of springs originating from a contact between the alluvium and bedrock. The Ash Springs pool occupies a surface area of about 2 acres, and is approximately 0.2 mile long and 1.6 to 6.6 feet deep. A thick canopy of willow and ash trees borders the eastern bank while the west side is more sparsely vegetated with willow, ash, and grasses. Adjacent upland habitat is typical of the Mojave Desert scrub ecological system.

The population is not regularly surveyed; however, NDOW reported 470 individuals within the pool area during a snorkeling event in 2006 (B. Hobbs, NDOW, pers. comm., 2008). This estimate does not include individuals that occur in the pool's outflow.

From 1993 to 1995, Tuttle and Weimeyer (1999) measured water conditions at Ash Springs during spring through fall. Conditions varied, possibly due to time of year and sampling location. Temperature ranged from 86 to 93ºF, pH was 6.9 to 7.4, conductivity was 550 to 600 µS per centimeter, salinity was 0.0 to 0.4 ppt, and dissolved oxygen was 4.0 to 4.5 mg/L. USGS manual flow measurements obtained between 2006 and 2008 estimated an average flow of approximately 3.2 cubic feet per second, ranging from 1.7 to 7.6 (USGS 2008).

b. Factors Affecting the White River Springfish in the Action Area

Habitat alteration

Springfish habitat has been altered by widening of the spring pool and placement of a culvert for the stream to pass under US 93. The upper portion of the springpool was also converted to a cinderblock-lined pool. Past disturbance included periodic draining for maintenance, leaving only the base streamflow in the pool. The effects of this habitat manipulation on the species are unknown; however, the species has persisted despite these perturbations to its habitat.

Nonnative species

Non-native species are prevalent in Ash Springs. These species include convict cichlid (*Archocentrus nigrofasciatus*), shortfin molly, and mosquitofish. Common carp

(*Cyprinus carpio*) are present in the extreme downstream portion of springfish habitat. Crayfish are also abundant. Due to the proximity of a main road and the attraction of the springs as a recreational swimming site, this habitat has a high risk of non-native species introduction. The population size of the springfish is most likely constrained by the presence of non-native species.

Recreational swimming

Recreational swimming affects the springfish mostly from disturbance of the substrate and bank disturbance. Springfish typically forage and spawn on algae mats. Disruption of these mats by swimming may destroy eggs and larvae, and may affect the periphyton composition, which is used as a food source. Swimming and algae disruption also may disturb bottom sediments, which may impact benthic macroinvertebrates and cause siltation of spawning habitat. Easy accessibility to the site has also facilitated water contamination and vandalism, including the intentional release of diesel fuel into the springhead. The species has persisted despite these activities, but it is unknown as to the extent that these activities limit population size.

c. Status and Factors Affecting the Species' Critical Habitat in the Action Area

Critical habitat for the White River springfish includes Ash Springs and its associated outflow in Pahranagat Valley. Critical habitat also includes the adjacent riparian areas immediately surrounding the pool and outflow, which provides vegetative cover that contributes to the uniform water conditions preferred by the springfish and provides habitat for insects and other invertebrates that constitute a substantial portion of the springfish's diet. The most critical elements to survival of the springfish is the consistent quality and quantity of springflows. Critical habitat encompasses a total of 12 acres at Ash Springs, of which most (11.9 acres) occurs on private land. The remaining 0.1 acre is located on land administered by BLM.

Water conditions (pH, conductivity, dissolved oxygen, and temperature) are within normal range suitable for the springfish, and show no sign of degradation (Tuttle and Weimeyer 1999). Several metals of concern were present in Ash Springs, mostly elevated in the sediments but also present in algae, fish tissue, invertebrates, and water. Arsenic and selenium were detected in concentrations that have been determined to cause effects to sensitive organisms in the laboratory, and mercury was in concentrations that have been shown to affect a broad range of invertebrates. Tuttle and Weimeyer (1999) suggest that selenium and arsenic, were likely to have originated from ground water, and although mercury has a complex cycle, it may have also originated from ground water. If these metals were derived from ground water, then it may be that they are background conditions to which the fish and invertebrates are adapted. However, modern concentrations are likely higher than they were historically.

One key factor that may be affecting the critical habitat is the impoundment of water which entraps sediment and greatly increases the amount of silt in the system. Presumed historic conditions of the spring outflow considered silt as a minor substrate component; however, siltation dominates under current conditions, providing a potential for additional contaminants accumulation and a base for bioaccumulation. Additionally, pedestrian traffic and swimming enhances bank erosion, which may mobilize additional sediment with associated metals into the aquatic environment.

Other effects to critical habitat include the introduction of foreign substances to the springpool, which generally flows downstream and has the potential to accumulate in the pool. The introductions range from illegal activities such as the pouring and ignition of diesel fuel in the spring to the use of soaps in bathing or washing. Substances such as soap often contain musks (fragrances) that may cause endocrine disruption in fish. The effects of introducing foreign substances into springfish habitat have not been determined.

4. *Pahrump Poolfish*

a. Status of the Pahrump Poolfish in the Action Area

The Pahrump poolfish currently occurs in three locations: (1) Corn Creek Spring refugium on the Desert NWR in Clark County, Nevada; (2) Spring Mountain Ranch State Park in Clark County, Nevada; and (3) Shoshone Ponds Natural Area in White Pine County, Nevada. Shoshone Ponds is the only site that occurs within the planning area for the RMP.

Since the poolfish no longer occurs in its natural habitat, recovery objectives focus on protection and management of poolfish in their transplanted habitats. Shoshone Ponds is a series of three small excavated ponds fed by artesian well flows, one large spring-fed stock pool, and one artesian well outflow in pinyon/juniper habitat located approximately 38 miles southeast of Ely in White Pine County, Nevada. The small pools (north, middle, and south) are currently in disrepair, and issue a sheet flow of water that merges with the spring flow. The three small pools are fenced to exclude livestock. Water rights are held by NDOW. The north and middle pools contain poolfish while the south pool contains relict dace (*Relictus solitarius*). The stock pond and spring outflows also contain poolfish. The stock pond and spring outflows are not fenced to exclude livestock. Water rights to the spring outflows are held by BLM. The population experiences natural fluctuations but has been stable overall since the 1980s. Surveys conducted in 2006 (NDOW 2007) estimated a population size of approximately 6,700 individuals. Water chemistry characteristics of the spring outflow are unknown. Table 13 shows water quality characteristics of the Shoshone Ponds. Poolfish are also occasionally found in the artesian well outflow.

Table 13. Select water chemistry and population estimates of Pahrump poolfish at Shoshone Ponds, White Pine County, Nevada, August 2005

Location	Dissolved Oxygen (mg/L)	Temperature (C)
North Pond	5.67	26.5
Middle Pond	2.77	23.9
Stock Pond	7.98	21.0

The vegetation surrounding Shoshone Ponds consists of swamp cedar (q unique ecotype of rocky mountain juniper). There are two main gravel roads that lead to the ponds and several two-track trails in the area. Camping occurs in the area, mainly during hunting season, because swamp cedars provide shade and the ground is flat.

Shoshone Ponds is located within the 17,322-acre Scotty Meadows livestock grazing allotment. The allotment is grazed from June 1 to September 30 at an assigned use level of 1,227 AUMs. This allotment has not yet been evaluated for meeting rangeland health standards. However, the small ponds are fenced to keep livestock out of the immediate vicinity of the habitat. The stock pond, which is not fenced, sustains the greatest intensity of livestock grazing. This pool appears to support the best poolfish habitat. Grazing of emergent vegetation by cattle eliminates habitat for ambush predators such as dragonflies, and also opens the habitat to solar radiation that encourages primary productivity and increased fish growth. The small ponds were overgrown with aquatic vegetation, and in 2005 fish appeared to be in poor condition, likely due to energy constraints. A fifth pond is proposed to be developed using the spring outflow, which would consist of two sections, one available to cattle and the other to some extent unavailable (permanent closure to seasonal use). Additional studies are needed to identify optimal management of poolfish habitat, and must consider other potential impacts of livestock grazing, such as increased erosion.

b. Factors Affecting the Pahrump Poolfish in the Action Area

Vegetation

Based on casual observation, it appears that overgrowth of wetland vegetation inhibits poolfish condition and abundance. This is evident at the small pools which are fenced to exclude cattle. These ponds are currently undergoing encroachment by rushes. The current artificial environment of the Pahrump poolfish and Shoshone Ponds may benefit from modifications to the area that would promote more open habitat.

Irrigation Runoff

The pools at Shoshone Ponds are located downstream of the pasture, and are impacted to various degrees by irrigation runoff. The scope of the effect is unknown, but obvious

problems related to runoff are not evident. Given the density of wetland vegetation surrounding the small pools, runoff is likely not an issue.

Livestock Grazing

The stock pond is exposed to livestock grazing and poolfish in the pond most likely experience effects from substrate disturbance and trampling. Grazing in the area may also lead to increased sediment input to the pond. However, grazing also keeps vegetation from overtaking the pond, providing a benefit to the poolfish.

5. Southwestern Willow Flycatcher

a. Status of the Southwestern Willow Flycatcher in the Action Area

The Meadow Valley Wash extends 110 miles in a general north-to-south direction from its northern origin in the Wilson Creek Range of eastern Lincoln County to its confluence with the Muddy River in Clark County. The drainage originates within the Great Basin physiographic region, but enters the Mojave Desert approximately 30 miles south in the vicinity of Elgin. Approximately 70 miles of the wash are located in Lincoln County.

The Meadow Valley Wash is an intermittently flowing stream. Stream flows are perennial from Caliente south to about Elgin (the stretch of the stream known as Rainbow Canyon), at which point flows become intermittent depending on where the bedrock interfaces with the alluvium. During the hot summer months, surface water flows may dry up in certain reaches of the stream.

The majority of land in Lincoln County is public land managed by BLM. Overall, approximately 97 percent of the land is in public ownership and 3 percent is privately owned. However, private lands tend to be concentrated within the Meadow Valley Wash floodplain where surface and shallow ground water are more accessible and available. Hence, approximately 25 percent of the land along the wash is in non-Federal ownership and 75 percent is administered by BLM.

Woody riparian vegetation along Meadow Valley Wash and Clover Creek is comprised of a mix of species such as cottonwood, willow, ash, and salt cedar. An ecological assessment of the Meadow Valley Wash was conducted by BioWest in 2003 (BioWest 2005a). As part of the assessment, riparian vegetation types were described and delineated along the wash for the purpose of defining, locating, and quantifying suitable and potentially suitable habitat for the southwestern willow flycatcher. The study identified 12 woody riparian vegetation types comprising approximately 1,430 acres in Lincoln County. Salt cedar-dominated types comprised 54 percent (670 acres) of the total woody riparian vegetation, with the balance dominated by native vegetation (760 acres). Overall, the majority of woody riparian vegetation in Rainbow Canyon is native-dominated, while most of the salt cedar-dominated vegetation occurs from just

north of Lyman Crossing to south of Vigo, and in the vicinity of Rox near the Lincoln/Clark County line.

Of the 1,400 acres of woody riparian vegetation that occurs in Lincoln County, BioWest (2005a) defined approximately 575 acres of suitable flycatcher breeding habitat and 560 acres of potentially suitable breeding habitat. The primary components of suitable breeding habitat were defined as: (1) a stand, or patch size, of 0.25 acre or greater; (2) a vegetation width of more than 30 feet; (3) a dense canopy; (4) dense interior vegetation from ground level up to about 15 feet or dense patches interspersed with openings; and (5) surface water or saturated soils present within the stand or within 125 feet of the stand. Approximately 60 percent (350 acres) of the suitable habitat in Lincoln County is dominated by salt cedar, while 40 percent is predominantly native vegetation.

Southwestern willow flycatchers have been detected infrequently along the Meadow Valley Wash. Surveys have detected flycatchers in or adjacent to areas where the vegetation was defined as suitable breeding habitat (BioWest 2005a). Flycatchers have been observed just north of the south Highway 93 bridge in Caliente (as described in BioWest 2005a), in Rainbow Canyon (San Bernardino County Museum 1999, 2001), and in the vicinity of Rox (NDOW 2003). Breeding was detected in Rainbow Canyon in 1998 (San Bernardino County Museum 1999). The most recent observation was made by NDOW in 2002 (NDOW 2003). Long-term flycatcher surveys have not been conducted consistently in the wash; therefore, current information on flycatcher presence in the wash is lacking.

For the most part, the floodplain of the Meadow Valley Wash is narrow, and the gradient is steep enough to produce flash floods during heavy rains that strip the vegetation and change the location of the main channel. Sediment flows are also very heavy in this drainage. In January of 2005, the Meadow Valley Wash experienced a 100-year flood event that scoured the floodplain, removing much of the habitat for flycatchers. BioWest (2005b) estimated that approximately 50 percent of the suitable flycatcher habitat in the wash was stripped by the flood. The vegetation is expected to resprout and the habitat will likely recover.

The Union Pacific Railroad (UPRR) operates a railroad line along Clover Creek and the Meadow Valley Wash. During the 2005 flood, the track was damaged and UPRR initiated unauthorized construction activities to repair the track and prevent future flooding from damaging the railroad line. Their emergency work resulted in additional damage to riparian vegetation, the stream channel, and the floodplain. UPRR is currently negotiating with the Environmental Protection Agency on a settlement agreement that will address UPRR's unauthorized activities, and will likely include requirements for riparian habitat restoration.

The stretch of the wash that flows through Caliente historically supported vegetation considered suitable for breeding flycatchers. The City periodically clears the vegetation

in an attempt to control flooding that occurs occasionally within the city. BioWest's ecological assessment of the wash (2005a) identified approximately 18 acres of flycatcher habitat within the city. Caliente is planning on implementing a flood control project and constructing a linear park through the city that will effectively reduce the potential of that stretch of the wash to support suitable flycatcher habitat in the future.

Clover Creek is a tributary to the Meadow Valley Wash, and flows from east to west to Caliente, where it joins the Meadow Valley Wash. Clover Creek is mostly dry, but perennially-flowing stretches occur in the vicinity of Big Spring, located approximately 13 miles east of Caliente. Thick riparian vegetation grows along the creek at this location. Although vegetation structure is characteristic of suitable flycatcher habitat, previous surveys conducted by NDOW have not detected flycatchers along Clover Creek.

One of Nevada's largest populations of flycatchers breeds in Pahranagat Valley on the Pahranagat NWR. They also breed in patches of coyote willow along the western edge of Nesbitt Lake on the Key Pittman Wildlife Management Area. Flycatchers have also been detected in clumps of coyote willow scattered throughout the Pahranagat Valley on private lands, but survey data is lacking due to access limitations. Although none of these sites occur on land administered by BLM, they are surrounded by BLM land and are located in the vicinity of proposed land disposal areas.

b. Factors Affecting the Southwestern Willow Flycatcher in the Action Area

Invasive Species Control

BLM has been active in salt cedar control in the Meadow Valley Wash since at least 1999. Prior to 2004, BLM treated salt cedar within a 2,667-acre area. Since 2004, BLM has removed approximately 15 acres of salt cedar along the wash, none of which was considered suitable flycatcher habitat.

Wild Horse Management

Under BLM's Caliente Management Framework Plan, five HMAs for wild horses overlap with the Meadow Valley Wash and Clover Creek areas. These five HMAs covered approximately 563,755 acres, with a combined Appropriate Management Level (AML) of 54 to 115 animals. Under the RMP, these HMAs will be closed and animals will be removed.

Utility, Road, and Railroad Rights-of-Way

State Highway 317 runs from Caliente south along the edge of the Meadow Valley Wash to Elgin, then veers west to join with US 93. NDOT has removed vegetation in the wash to allow for road maintenance and repair activities and to protect bridge integrity. Suitable flycatcher habitat was removed by NDOT in the late 1990s just south of the

US 93 bridge on the southern edge of Caliente. UPRR removes vegetation in the riparian area and manipulates the stream channel to protect the integrity of the railroad line. Other utility lines may be constructed through Rainbow Canyon along the wash requiring vegetation removal.

OHV and Recreational Management

Currently, the Ely District is open to OHV cross-country travel. BLM also authorizes OHV races that cross the Meadow Valley Wash and run adjacent to Clover Creek. BLM permits on average four OHV events per year in this area. In most instances, these events utilize portions of the Clover Creek and Meadow Valley Wash as part of the permitted event. In most years, this includes one motorcycle race, two motorcycle group rides, and one truck race. All of these events start and stage on private land in Caliente, typically running down the wash through the city, and veering off onto adjacent upland areas on BLM land just south of the US 93 bridge south of the city. Approximately 521 people participate in these events in a year, based on figures provided by BLM in post-use reports for 2007. Events begin in late March and continue through the summer and fall season, with the last event usually occurring in late September. BioWest (2005a) noted that stresses to the riparian area from OHV use along the wash were evident, but did not clarify the nature of the impact (crushing of vegetation, erosion of the stream channel, etc.). It is not known to what extent this disturbance is caused by casual use or organized events.

Livestock Grazing

Table 7 lists the livestock grazing allotments that overlap with flycatcher habitat along the Meadow Valley Wash. Data for evaluating rangeland health standards have been collected for the Cottonwood, Henrie Complex, and Schlarman allotments; however, the outcome of the evaluation is yet to be determined. BLM will evaluate the other nine allotments within the next two years to determine if they are meeting or making progress toward achieving rangeland health standards. BioWest (2005a) noted that grazing was a stressor in several stands of suitable and potentially suitable flycatcher habitat. Grazing may reduce understory cover and density, but the extent to which livestock grazing is currently affecting understory density of riparian vegetation along the Meadow Valley Wash is unknown.

Minerals Extraction

There are currently no existing effects to flycatcher habitat along the Meadow Valley Wash from BLM-authorized mineral materials pits. However, indirect effects from the construction of access roads for existing mining operations may occur. An existing gypsum mine located adjacent to the wash in upland habitat is currently proposing to construct an access road that would cross the wash, which would result in the removal of flycatcher habitat.

Fire and Fire Management

Small fires are occasionally started from sparks emitted during track cleaning by the UPRR. The extent that these fires have affected riparian vegetation along the Meadow Valley Wash is unknown. In addition, one of the many wildfires that burned in southern Nevada during 2005 spread to the Meadow Valley Wash and burned approximately 10 acres of riparian habitat. Most of the riparian habitat was not burned by fire due in part to fire suppression efforts, which limited the loss of vegetation to a few cottonwood trees. A fire in 2003 near Carp burned 62 acres of riparian habitat, most of which was salt cedar.

Hydrological Factors

The Meadow Valley Wash and Clover Creek have been subject to major modifications to the hydrological regime since the late 1800s, when farming and the railroad came to the valley. Prior to human settlement, the stream channel was multi-braided and formed a broader floodplain. The drainage experiences naturally high sediment loads carried down into Clover Creek and Meadow Valley Wash from the many tributaries that connect with these streams. These sediments accumulate in areas where water flow is slower or backs up at points of constriction such as bridge crossings and culverts. The stream channel has been dredged in several locations to confine flows to one main channel and to remove sediment accumulation. Construction of the railroad tracks, railroad access roads, and state and county roads along the wash also constricted the floodplain, which increases flow velocities and the potential for erosion to occur. After the January 2005 flood, UPRR constructed a series of levees throughout the Meadow Valley Wash drainage to divert future flood flows from their right-of-way. In many areas these levees reduced the channel flood capacity and created potential sediment or flood hazards to downstream habitat, water quality, and infrastructure such as bridges and roads.

F. Effects of the Action

Direct effects encompass the immediate, often obvious effect of the proposed action on the listed species or its habitat. Indirect effects are caused by, or result from the proposed action, are later in time, and are reasonably certain to occur. In contrast to direct effects, indirect effects are more subtle, and may affect species populations and habitat quality over an extended period of time, long after surface-disturbing activities have been completed. Indirect effects are of particular concern for long-lived species such as the desert tortoise because project-related effects may not become evident in individuals or populations until years later.

1. Desert Tortoise and its Critical Habitat

General Effects. Capture and handling of desert tortoises, particularly if performed improperly, may result in adverse effects to tortoises. Blythe *et al.* (2003) found that Sonoran desert tortoises moved out of harm's way a distance less than 0.5 mile and

returned to their home ranges within a few days. Unless movement barriers are in place, tortoises moved a distance of less than 0.5 mile out of harm's way are likely to return to potentially harmful conditions. Tortoises may die or become injured by capture and relocation if done improperly, particularly during extreme temperatures, or if they void their bladders. Averill-Murray (2001) determined that tortoises that voided their bladders during handling had significantly lower overall survival rates (0.81-0.88) than those that did not void (0.96). If multiple desert tortoises are handled by biologists/ monitors without protective measures including unused latex gloves, pathogens may be spread among the tortoises.

Perhaps the most important general threat to tortoise populations relates to actual human presence in tortoise habitat and thus refers primarily to access (Boarman 2002a). Human activities in the planning area potentially provide food in the form of trash and litter, or water, which attract tortoise predators such as the common raven, kit fox, and coyote (Berry 1985; BLM 1990). Some forms of trash may be ingested by tortoises or they may become entangled resulting in their injury or death. If fuel or other hazardous materials are spilled in desert tortoise habitat, desert tortoises and their habitat may be adversely affected as a result. Natural predation in undisturbed, healthy ecosystems is generally not an issue of concern. However, predation rates may be altered when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1500 percent from 1968 to 1988 in response to expanding human use of the desert (Boarman 2002b). Since ravens were scarce in this area prior to 1940, the current level of raven predation on juvenile desert tortoises is considered to be an unnatural occurrence (BLM 1990). In addition to ravens, dogs have emerged as significant predators of the tortoise particularly near residential development. Dogs may range several miles into the desert and have been found digging up and killing desert tortoises (Service 1994, Evans 2001). Dogs brought into the planning area with visitors may harass, injure, or kill desert tortoises, particularly if allowed off leash to free-roam in occupied desert tortoise habitat.

Habitat loss, degradation, and fragmentation that result from the myriad activities that take place in the desert are among the most pervasive problems for desert tortoise populations and are among the most difficult to evaluate (Boarman 2002a). BLM programs in this biological opinion that are anticipated to result in the most habitat impacts include lands, realty, and renewable energy; geology and mineral extraction; and livestock grazing. The cumulative effects of factors leading to habitat loss and habitat degradation have been implicated as causes in the extirpation and drastic reductions in tortoise populations from the Antelope, Searles, and Indian Wells valleys, and in the vicinity of several other communities in the West Mojave such as Barstow, Mojave, and Victorville (Berry and Nicholson 1984, Feldmeth and Clements 1990, Tierra Madre Consultants 1991, Service 1994).

a. Effects of Vegetation and Weed Management

BLM estimates that a maximum of 36,752 acres of critical habitat and 72,429 acres of non-critical habitat may be affected by these two programs (Table 3; BLM 2008). Overall, the desert tortoise is likely to benefit from activities implemented under this program by restoring the native plant communities, thus improving habitat conditions. Acreage of disturbance that may result from implementation of vegetation management activities is based on the assumption that all of the desert tortoise habitat (critical and non-critical) is in the Mojave Desert vegetation community; a maximum of 15 percent of the Mojave Desert vegetation community will be treated or maintained; and treated areas are uniformly distributed across the planning area.

In addition to habitat impacts, individual desert tortoises could be killed, injured, or harassed by program activities which include:

- encounters with project vehicles and equipment;
- capturing and relocating from harm's way;
- improper handling;
- exposure to herbicides;
- burrows crushed by project vehicles and/or equipment; and
- disruption of behavior including foraging, breeding, and sheltering.

Actions may involve use of heavy equipment, all-terrain vehicles (ATVs), or hand-tools and include recontouring, ripping of soil, ground watering, broadcast seeding, use of water trucks for dust abatement, and vegetation planting. The behavior of individual tortoises including foraging, breeding, and sheltering may be temporarily disrupted as a result of project activities. Weeds and invasive non-native plants may become established as a result of transport into project areas by vehicles and equipment. Animals used by permittees or contractors may also facilitate establishment of weeds and non-native plants.

Use of vehicles and heavy equipment may increase the risk of injury or mortality of individuals, short-term displacement/noise during the project, short-term loss of vegetation (though unlikely), and temporary ground disturbance. Many potential effects of habitat restoration are the same as, or similar to, other surface-disturbing activities identified below. Activities associated with weed treatments that may affect the desert tortoise include application of herbicides; clearing or cutting vegetation by hand or with machinery; and use of ATVs on disturbed areas for site access. Effects to the desert tortoise include: unintentional removal/destruction of plants used by tortoises for forage or shelter; soil compaction; alteration of local microclimate through vegetation removal; and harassment, injury or mortality of tortoises as a result of vehicle or machinery operation.

Although some adverse effects are anticipated, most effects to the desert tortoise that would occur under these two programs will be beneficial to the species. These effects

include long-term improvement of plant species diversity (including food sources); long-term reduction in erosion; long-term increased habitat quality; increased tortoise abundance and distribution through habitat enhancement; decreased potential for future alien plant invasions; and decreased wildfire potential.

The desert tortoise may be affected by weed management activities which are approximately the same as those identified above for vegetation management. BLM did not provide an estimate of anticipated disturbance of tortoise habitat that may result from this program due to the uncertainty associated with funding and scope of potential projects. Site-specific effects of weed management activities would be identified when such actions are proposed and developed by appropriate agencies. At that time, BLM will submit the appropriate documents to the Service to append the action to this biological opinion. Any vegetation and weed treatment in desert tortoise habitat will be conducted only after coordination/consultation with the Service.

b. Effects of Lands, Realty, and Renewable Energy Actions

Disposal. BLM may dispose of up to 4,870 acres of non-critical desert tortoise habitat during the life of the RMP. BLM does not propose to dispose of any critical habitat.

Although this biological opinion evaluates only the effects to the desert tortoise that may result from the transfer of BLM-administered land out of Federal ownership, the direct and indirect effects to the species that may occur after transfer would be evaluated under section 10 of the Act. Similarly, the subsequent take of tortoises and loss or disturbance of their habitat following transfer from public administration to private ownership, may be authorized by the Service through an incidental take permit under section 10(a)(1)(B) of the Act, following development of an HCP by the landowner. Lands transferred out of Federal administration would likely no longer benefit from conservation mandates of Federal agencies under section 7 of the Act.

The transfer of BLM land out of Federal administration may result in development for commercial purposes, residential housing, local government projects, or other actions. Once lands are transferred out of BLM administration, impacts that result from future non-Federal actions on these lands may be considered as cumulative effects, which are identified in that section of this opinion.

Based on desert tortoise abundance estimates of 20 tortoises per square mile, we anticipate that approximately 152 desert tortoises may occur on the 4,870 acres of disposal lands. If not located and removed, tortoises that occur on the properties could be killed by development or surface-disturbing activities. Tortoises that occur on disposal lands would be taken by capture and relocated from harm's way. Additional harassment of tortoises adjacent to the properties may occur as a result of increased levels of noise and ground vibrations produced by blasting, vehicles, and heavy equipment (Bondello 1976; Bondello, *et al*. 1979). Desert tortoises from adjacent parcels may move onto

disposal lands if no barrier exists to exclude them from project areas. As development proceeds, public use and impacts in adjacent areas are anticipated to increase. These uses include increases in recreation, vandalism, dogs, illegal trash dumping, and illegal collection of desert tortoise.

Land Use Authorizations. The Lincoln County Conservation, Recreation, and Development Act provides for a maximum of 15,000 acres available for R&PP Act actions throughout the entire County. Rights-of-way will be situated in corridors within the planning area. An unquantified portion of designated utility corridors have been disturbed. BLM estimates that two communication towers may be approved and constructed outside critical habitat requiring an estimated 10 acres each during the life of the RMP.

Activities that follow land use authorizations threaten desert tortoises in the project area including access roads. Tortoises may fall into trenches or other excavations that remain open. Vehicles and equipment may stray from existing roads or designated areas and kill or injure tortoises, or crush their burrows. Rights-of-way may provide new access into tortoise habitat for the public resulting in all the effects associated with increased human presence. Project vehicles may travel at excessive speeds, preventing the operator from seeing desert tortoises in time to avoid them. Tortoises may take shelter under parked vehicles and be killed, injured, or harassed when the vehicle is moved.

Failure to report tortoise injuries and mortalities may result in additional take of tortoises if measures are not implemented to address the cause of such take. If BLM is not notified in advance of the project, proper oversight may not occur. If tortoise-proof fencing is installed, over time breaches may occur, thus allowing tortoises to pass through the barrier and be in harm's way. Temporary fencing left in place following the action or threat to tortoises in the area may contribute towards habitat fragmentation. Materials and equipment left behind following a project or action may be ingested by tortoises, entrap or entangle tortoises, attract desert tortoise predators such as common ravens and coyotes, or provide shelter for tortoises which when removed may result in displacement or injury of the tortoise.

Utility and energy rights-of-way cause linear impacts to tortoise populations and may have levels of impacts well beyond those of many point sources of impacts (Boarman 2002a). In a retrospective evaluation of results of 234 biological opinions in California and Nevada (LaRue and Dougherty 1999), 80 percent (47/59) of the tortoises reportedly killed in California and Nevada were killed along utility corridors. Most of those were along the Kern-Mojave Pipeline (Olson *et al*. 1993, Olson 1996). Considerable habitat destruction or alteration occurs when pipelines and transmission lines are constructed and the impacts are repeated as maintenance operations or new pipelines or power lines are placed along existing corridors. Trenches opened for laying or maintaining pipes may serve as traps for tortoises and other animals (Olson *et al*. 1993). Dirt roads used for

maintenance-related access create dust provide public access to less disturbed habitat (Brum *et al*. 1983).

The presence of transmission towers in areas otherwise devoid of other raven nesting substrates (*e.g*., Joshua trees, palo verdes, cliffs), may introduce heavy predation to an area previously immune to such predation (Boarman 1993). Most raven predation on tortoises appears to occur during the raven breeding season (Boarman 2002b). By one estimate, ravens probably do most (75 percent) of their foraging within one-quarter mile of their nest (Sherman 1993) and raven predation pressure is notably intense near their nests (Kristan and Boarman 2001). Therefore, ravens nesting on transmission towers, where no other nesting substrate exists within one-half mile, may significantly reduce juvenile tortoise populations within one-quarter mile of the corridor, but this effect is quite localized.

Linear construction projects can negatively affect desert populations. Studies suggest that differences in the extent of the threat are related to the scale of the project, the ability of crews to avoid disturbing burrows, and timing of construction to avoid peak activity periods of tortoises (Boarman 2002a). In addition to the discrete disturbance points formed by towers and lines, maintenance roads and repeated operations can (1) introduce continuous sources of disturbance and (2) provide potential sites for invasion of exotic species. Rights-of-way can cause habitat destruction and alteration where vegetation is minimal, possibly increasing mortality, directly or indirectly (Boarman 2002a).

The greatest potential threat to desert tortoises resulting from land and realty actions is from vehicles and heavy equipment activity on new and existing access roads. Roads provide direct invasion routes and habitat generation for invasive weedy plants. Tortoises could also be killed or injured as a result of being crushed by worker vehicles commuting to and from the project area. Tortoises in harm's way and not re-located before project activities commence, or not avoided by vehicles, could also be killed or injured. Any tortoise on an access road during project hours would be highly vulnerable. If vehicles travel at excessive speeds on access roads they may inadvertently run over desert tortoises. Project vehicles or equipment that stray from designated areas or widen existing access roads may crush desert tortoises aboveground or in their burrows or damage habitat outside the project area. Tortoises could wander into the construction work area or take refuge underneath project vehicles and equipment, and be killed or injured when the vehicle/equipment is moved.

Habitat disturbance caused by project vehicles and equipment often result in damage to desert soils which are protected by fragile organic or inorganic crusts. The organic crust can be the result of various microflora such as algae, lichen, and fungi, which form cryptobiotic crusts or macroflora consisting of the remnants of fibrous root material from dead annual plants (Cooke and Warren 1973; Went and Stark 1968). The inorganic crust can be comprised of desert pavement, silt/clay, or chemicals. All of these crusts help

prevent erosion, and may increase infiltration and retard evaporation (Epstein *et al.* 1966).

Mechanical disturbance of desert soils may cause: (1) changes in annual and perennial plant production and species composition including introduction of non-native plants, including noxious weeds, or increases in the area of distribution of weeds; (2) outright soil loss due to increased rates of water and wind erosion; (3) reduced soil moisture; (4) reduced infiltration rates; (5) changes in soil thermal regime; and (6) compaction or an increase in surface strength (Adams, *et al*. 1982; Biosystems 1991; Burge 1983; Bury 1978; Bury and Luckenbach 1983 and 1986; Davidson and Fox 1974; Hinkley *et al*. 1983; Nakata 1983; Vollmer *et al*. 1976; Webb 1983; Wilshire 1977 and 1979; Wilshire and Nakata 1976; Woodman 1983). When the soil surface is exposed by vehicular activity (e.g., OHVs), the thermal insulation provided by the vegetative cover is decreased, which results in increased daytime temperatures. Higher temperatures decrease the soil moisture, which causes soil temperature to increase further because less heat is required to vaporize the water present. Revegetation is inhibited as a result of these processes (Webb *et al*. 1978).

Following construction, the public may use project access roads which may result in adverse effects to tortoise populations. Humans use the desert for off-road exploration, casual shooting and target practice, personal or commercial collection of animals and plants, searches and digging for minerals and gems, geocaching (GPS guided stash hunts), and even the production of illegal drugs. Desert tortoise shells found in the Mojave Desert with bullet holes were examined forensically and it was determined that these tortoises were alive when they were shot (Berry 1986). Project personnel could illegally collect tortoises for pets or bring dogs to the project area.

Project activities may provide food in the form of trash and litter which attracts important tortoise predators such as the common raven, kit fox, and coyote (BLM 1990, Boarman and Berry 1995). The majority of raven predation occurs during the spring and is most likely accomplished by breeding birds (Boarman 2002b). Ravens use transmission towers as well as other anthropogenic structures as nest sites which threaten small tortoises in the area surrounding the nest site (Boarman 2002b). During the raven breeding season, most foraging is probably done near the nest (Sherman 1993) and most food is likely brought back to or near the nest.

Rights-of-way would be situated in corridors within the planning area. An unquantified portion of the designated utility corridors have been disturbed. BLM estimates that two communication towers may be approved and constructed outside critical habitat requiring an estimated 10 acres each during the life of the RMP.

c. Effects of Travel and OHV Management

The presence of a road poses potential harm to tortoises and their habitat and the more roads there are the greater is the proportion of the tortoise population that is under the threat of illegal off-road activity (Boarman 2002a). Continued use of existing roads may result in habitat fragmentation; increased opportunities for collection or vandalism; introduction of alien plants and exotic animals; injury or mortality as a result of encounters with visitors' pets; and illegal release of pet tortoises including exotic species.

Road kills and litter from vehicles and trail users may attract subsidized tortoise predators. Census data indicate that desert tortoise numbers decline as vehicle use increases (Bury *et al*. 1977) and that tortoise sign increases with increased distance from roads (Nicholson 1978). Tortoises often use roads which have depressions as drinking sites. Vehicular activity on unpaved roads following rains may preclude tortoises from drinking water, which may be available for only brief periods. Tortoises that move or occur in the paths of recreational vehicles may be killed or injured (Bury and Luckenbach 2002, Nicholson 1978), or collected as pets or food (Berry *et al*. 1996). Roads are also major attractants for common ravens, which are predators on juvenile tortoises (Knight and Kawashima 1993, Boarman 1993). Ravens, being partly scavengers, are known for cruising road edges in search of road kills (Kristan *et al*. 2004)

Other potential effects of these activities may include mortality, injury or harassment of individuals as a result of vehicle encounters including disruption of behavior during road construction, grading/paving/graveling, maintenance, and use of trails and roads.

BLM estimates that an impact area exists alongside roads which involve 148,160 acres in desert tortoise critical habitat and 165,120 of non-critical habitat. These acreage estimates are based upon BLM inventory data recently completed which identified 516 miles of roads in non-critical habitat and 463 miles of roads in critical habitat. BLM determined that a zone of depression (*i.e.*, area where tortoise numbers have been reduced as a result of road mortality) may exist along roads that extend one-quarter mile on each side (Nicholson 1978, Berry and Turner 1987, Berry *et al*. 1990, Boarman and Sazaki 1996, von Seckendorff Hoff and Marlow 1997). The area of impact was determined by the length of the road/trail and a total width of one-half mile (Boarman *et al.* 1997). Generally, the actual impact of a road on desert tortoise populations depends upon traffic speed and volume, density and demography of surrounding tortoise population, and perhaps width and age of road (Boarman 2002a). The cause of this depression is likely road kills, but illegal collections, noise, and other factors may also contribute. There are no data to determine precise estimates of road effects.

d. Effects of Recreation

Recreation activities likely to occur within the planning area include OHV use, hiking, mountain biking, equestrian use, rock-climbing, dog exercise, hunting, nature study and

sight-seeing, and dispersed camping. Boarman (2002a) determined that there were no known studies concerning the impacts of these activities on desert tortoise populations; however, there are likely impacts which include: Illegal handling and disturbance of tortoises by the public; loss of habitat through development of trails and other recreational infrastructure; introduction and spread of alien plants by visitors and horses; vandalism; road kills by vehicles operated by recreationists; desert tortoise harassment, injury, or mortality by dogs if not controlled; trampling of desert tortoises and their burrows as a result of cross-country equestrian activities; and increases in raven populations attracted by human presence and trash. Further, the potential increase in trash may result in injury or mortality of desert tortoises if ingested or if the tortoise becomes entangled.

Additional unauthorized impacts that may occur from casual use include unauthorized trail creation; illegal shooting; and administrative/law enforcement activities which may occur off existing roads, trails or other disturbed areas; and illegal OHV activities. Mountain bikes that stray off designated roads and trails, and cross-county equestrian activities will likely cause habitat damage and create new trails that may subsequently be used by recreationists. Vegetation and cryptobiotic crusts may be damaged from off-trail travel by mountain bikes, horses, and hikers. Hiking off of trails can significantly damage cryptobiotic crusts (Belnap 1996).

Actions proposed by BLM for OHV events may result in additional habitat disturbance beyond existing baseline conditions from uncontrolled disturbance by event vehicles that stray off the course. In addition to habitat disturbance, vehicles that stray off existing roads and trails may collapse occupied burrows, crushing nests and burying the occupants (Burge 1983, Bury 1978 and 1980, Bury and Marlow 1973). Effects to tortoise may occur as a result of permitted events that violate stipulations imposed by BLM. Historically, event spectators have been difficult to control at many OHV events which has resulted in substantial environmental and habitat damage (Burge 1983). OHVs, operated by spectators of an organized event, may enter unauthorized areas or travel cross-country to observe a race, causing adverse effects on individual desert tortoises or their habitat (Burge 1983, Woodman 1983). Unauthorized route proliferation, crushing of shrubs, and wind erosion resulting from vehicle disturbance contribute to habitat degradation and loss. NDOW has documented that an unauthorized trail became incorporated into an OHV event course near Johnnie, Nevada (NDOW 2002).

Studies have shown that in areas of moderate to intensive OHV use, the number of perennial shrubs, as well as tortoise reproduction and body mass, are reduced (Biosystems Analysis 1991, Bury and Luckenbach 1986, Bury 1987). OHV activities reduce floral diversity and forage species availability for tortoises (Medica, *et al*. 1976, Webb, *et al*. 1978).

Bury (1987) demonstrated that desert tortoise densities and health deteriorated as a result of off-road vehicle activities when contrasted to populations from appropriately

controlled areas. OHV impacts to the soils and vegetation of desert ecosystems that support the desert tortoise are well documented and may affect tortoise populations and habitat quality over a long period of time. Many of these effects are similar to habitat disturbance associated with activities involving construction (*e.g.*, projects within rights-of-way).

Census data indicate that desert tortoise numbers decline as OHV use increases (Bury, *et al*. 1977), and that tortoise sign increases with increased distance from roads (Nicholson 1978). Tortoises often use roads which have depressions as drinking sites. Vehicular activity on unpaved roads following rains may preclude tortoises from drinking water, which may be available for only brief periods. Tortoises that move or occur in the paths of recreational vehicles may be killed or injured (Bury 1978, Bury and Luckenbach 1986, Luckenbach 1975, Nicholson, 1978), or collected as pets.

Noise levels produced by OHVs may alter tortoise behavior (potentially affecting foraging and other activities) or cause hearing loss, but these effects are difficult to assess and are not well documented. Noise from OHVs has the potential to disrupt communication and mask the sounds of approaching predators (Service 1994). Brattstrom and Bondello (1983) stated that the best available scientific data indicate that acoustical impacts of recreation vehicles pose a threat to the well-being of desert vertebrates, and that the problem is not just the abilities of specific sounds to carry into desert regions, but the abilities of specific sound sources to penetrate deep into these regions. Bondello (1976) reported that reptile hearing can be damaged by exposure at close range by impulsive noise from recreation vehicles. More recently, Bowles, *et al*. (1997) found that no significant temporary threshold shift, or temporary change in auditory sensitivity, was detected even in the most acoustically sensitive tortoises after a worse case scenario exposure to subsonic aircraft noise. Some tortoises did, however, prove to have relatively sensitive hearing at summer temperatures.

The effects of OHV activity on arid lands continue long after the event if some physical property of the soil is altered. Loosened soils blown off the surface can collect at the bases of shrubs or accumulate in nearby foothills, resulting in small dunes. Finer pulverized soils require lower threshold wind velocities for transportation than coarser pulverized soils having higher fine-clay content. Alluvial fans, bajadas, and desert flats with sandy soils, which have very low moisture content and are devoid of vegetation, are most affected by wind erosion following disturbance by OHVs (Gillette and Adams 1983). Recovery of Mojave desert vegetation and soils may require 30 to 100 years or more following OHV activity (Lathrop 1983). Dust may be deposited on vegetation along the course. Gibson, *et al*. (1998) found that heavy dust does not kill creosote bush; however, net photosynthesis may be reduced and leaf temperature substantially increased. Continued use of existing event courses may preclude natural revegetation of these disturbed areas. Course widening and rut formation are other physical effects of OHV activity.

Jennings (1993) found that 3 of the 10 most preferred tortoise forage plants, *Euphorbia albomarginata*, *Astragalus layneae*, and *Camissonia boothii*, were largely confined to washes. The tortoises in this study spent significantly more time traveling and foraging in hills, washes, and washlets than on the flats, the same areas preferred by recreational vehicle users. In the southern, eastern, and northeastern Mojave and the Sonoran deserts, washes are also important in the ecology and behavior of desert tortoises (Woodbury and Hardy 1948; Burge 1978; Baxter 1988). The tortoises use the washes for travel, excavation of burrows or dens, and for feeding. Because tortoises spend so much more time in washes and hills, they are also more likely to suffer direct mortality from vehicles than if they used the habitat randomly.

e. Effects of Livestock Grazing

The full range of grazing effects may never be thoroughly understood and is much more diverse and complex than a simple enumeration of individual impacts (Donahue 1999), or lack thereof. Livestock trample tortoises, crush their burrows, and reduce the vegetation on which tortoises depend for food, protection from predators, thermoregulation, and intraspecific behavioral interactions. Avery and Neibergs (1997) have observed tortoise burrows that were partially or completely destroyed by cattle trampling. They saw tortoises trying unsuccessfully to enter completely destroyed burrows. Grazing can alter the environment by compacting soils, depositing urine and feces and trampling vegetation. Once altered, upland vegetation communities appear to change or improve only gradually. When management is directed at improving upland vegetation associations improvements have occurred in as little as 20 years, but areas not receiving much precipitation (*i.e.*, less than 12 inches of annual precipitation) generally have not improved (U.S. Department of Interior [USDOI] 1994). Wagner (1994) observed that natural recovery from grazing in arid and semiarid areas was likely to be especially slow, sometimes requiring a century or more.

Ecological processes may take a long time to express themselves, and many depend on rare or unpredictable events on a particular site which may occur once every 20 years or so. Climate must be recognized as a confounding factor in research on the effects of grazing. Because long-term ecological changes caused by climate may mask or confound impacts due to grazing, research based on short-term studies may not effectively detect such changes or determine their causes (Donahue 1999). Thus, 3-5 year studies are limited in their effectiveness in quantifying changes (Noss and Cooperrider 1994).

Tracy *et al*. (1996) found that in years of very low annual productivity, tortoises lay fewer eggs. They also found that cattle foraging reduced tortoise forage abundance enough to cause tortoises to lay fewer eggs than normal. The conclusion is that, in years of low precipitation, cattle may remove enough forage to reduce tortoise reproductive output, thus competition occurs in those years.

Little is known about the long-term effects of livestock on animals other than ungulates. The desert tortoise is of particular concern. Livestock eat or trample the same plants that

tortoises feed upon. One tortoise eats far less plant forage in a year than a cow eats in a single day (Donahue 1999; Noss and Cooperrider 1994). In general, vegetation diversity decreases with grazing intensity, especially under continuous grazing pressure. Laylock (1994) cites a Nevada study in which 30 years of protection from grazing resulted in increased vegetal cover of all life forms.

Cattle introduce propagules of nonnative plants by bringing seed into an area either on their coats or in feces. Many nonnative plant species have established themselves in part due to environmental modifications by livestock and ranching practices. Although these plants take hold and spread simply because they out-compete native species, more often it is because livestock grazing has changed the environment in ways conducive to nonnatives' establishment and proliferation (Donahue 1999; Noss and Cooperrider 1994). Non-native plants such as red brome are usually well-adapted to grazing and invade overgrazed sites. Most range managers agree that moderate to heavy grazing over several years will usually change plant composition. Changing the plant species composition can substantially affect both erosion and rainwater infiltration (Noss and Cooperrider 1994).

In a study of 530 different rangeland sites in southern Utah, Gelbard (1999) found that cheatgrass (*Bromus tectorum*) cover was five times greater on sites without cryptobiotic soils (disturbed by either cattle or motorized use) than on sites with undisturbed crusts; 64 percent of all sites that were disturbed and lacking crusts were attributed to cattle grazing. Heavy grazing reduced crusts by 98.5 percent and light grazing reduced crusts by 52.3 percent at the Desert Experimental Range in southern Utah (Marble 1990). Creatgrass and other alien annual grasses provide the fine fuels that facilitate wildfires. Non-native plants such as cheatgrass are usually well-adapted to grazing and invade overgrazed sites. Changing the plant species composition can substantially affect both erosion and infiltration (Noss and Cooperrider 1994).

In the Mojave Desert of Nevada and Arizona, signs of increased soil compaction were evident in grazed areas compared to ungrazed areas between highway and highway right-of-way fences (Durfee 1988). Avery (1998) measured soil type, bulk density, and infiltration in an exclosure that cattle were excluded from for approximately 12 years and compared them to grazed areas outside the exclosure. Avery demonstrated that soil in heavily trampled areas near water tanks was coarser, had higher bulk density, greater penetration resistance, and lower infiltration rates (all are measures of soil compaction) than in the protected area.

Environmental Impact Statements prepared by BLM between 1978 and 1989 indicate that removal of livestock from hot deserts would result in less soil erosion, increased water infiltration rates, and soils would generally improve. Vegetation would gain health and vigor, and cover would increase (U.S. GAO 1991).

Laylock (1994) cites a Nevada study in which 30 years of protection from grazing resulted in increased vegetation cover of all life forms. Other studies have documented

significantly greater native plant species richness in ungrazed areas compared to those that are grazed (Brady *et al*. 1989; Floyd-Hanna *et al*. 2000). Sixteen years following removal of livestock grazing from the Appleton-Whittell Research Ranch Sanctuary in New Mexico resulted in an increase in plant and animal diversity (Brady *et al.* 1989).

Numerous studies document the adverse effects on the cryptobiotic crusts of arid soils as a result of disturbance (Jones 2001, USDI 2001). Removal or damage of the cryptobiotic crusts may have adverse impacts on desert soils and nutrient cycling. Soil and plant characteristics of low- and mid-elevation arid and semi-arid ecosystems in North America west of the Rocky Mountains indicate that these ecosystems evolved with low levels of soil surface disturbance. Neff *et al.* (2005) found that many soils in southeastern Utah are protected from surface disturbance by biological soil crusts that stabilize soils and reduce erosion by wind and water. These cryptobiotic crusts are only prominent components of ecosystems where large-bodied herbivores have been absent from recent evolutionary history such as in the arid west. If grazing leads to disturbance of these soil crusts, regeneration typically requires decades for the recolonization of microbes and hundreds of years for a crust lichen community to form. Neff *et al.* compared never-grazed grassland in Canyonlands National Park with two historically grazed sites with similar geologic, geomorphic, and geochemical characteristics that were grazed from the late 1800s until 1974. Despite almost 30 years without livestock grazing, surface soils in the historically grazed sites have 38–43 percent less silt, as well as 14–51 percent less total elemental soil magnesium, sodium, potassium, and manganese content relative to soils never exposed to livestock disturbances.

Neff *et al.* (2005) also found that grazing may also lead to changes in soil organic matter content including declines of 60–70 percent in surface soil carbon and nitrogen relative to the never-grazed sites. This study further suggests that nutrient loss due to wind erosion of soils should be a consideration for management decisions related to the long-term sustainability of grazing operations in arid environments.

Livestock turned out onto the range during the period of peak growth and nutritional value of forage can have an opportunity to graze the most nutritious forage first, forcing wildlife to forage and survive in a habitat that has been degraded nutritionally. The total biomass present in tortoise habitat may have little relation to the amount of suitable desert tortoise forage available to the tortoise which has an extremely narrow and highly selective diet requirement. Generally, a reduced level of nutritional intake has been shown to affect growth rates in juvenile desert tortoises (Medica *et al*. 1975) and female reproductive output (Turner *et al*. 1986, 1987; Henen 1992). Fencing can prevent livestock from moving to better forage areas, resulting in higher frequencies and intensities of defoliation than would occur otherwise (Donahue 1999).

Hobbs and Huenneke (1992) report that increases in baseline nutrient status such as those resulting from input from livestock feces can exacerbate the likelihood of invasive weedy plants. Deposition of feces and urine by livestock can alter the baseline nutrient status of

ecosystems causing nutrient enrichment. For most arid western rangelands which have a naturally low nutrient status, this gradual enrichment is an important problem with important implications for the entire ecosystem. Nutrients are removed from the ecosystem when cattle are taken off the range (Donahue 1999).

Oftedal (2002) suggests that tortoises selectively forage for plants high in protein and water (high PEP index plants) during optimal environmental conditions (*i.e.*, high rainfall years). Although high PEP index plants may only germinate and grow in wet years, such plants can be scarce. Tortoises in the West Mojave have been observed to search out and eat scarce plants high in protein such as *Astragalus*, *Lotus*, and *Camissonia* (Jennings 1993). In Ivanpah Valley, California, livestock outside exclosures removed plants high in protein leaving lower quality forage for tortoises (Avery 1998).

Jones (2000) conducted a quantitative review of the effects of cattle grazing in arid systems on 16 response variables. Eleven of 16 analyses (69 percent) revealed significant detrimental effects of cattle grazing, suggesting that cattle can have a negative impact on arid ecosystems. Soil-related variables were most negatively impacted by grazing (3 of 4 categories tested were significantly impacted).

Winter grazing effects: There is considerable evidence that winter grazing can impact xeric communities. Dormant woody riparian species are known to be especially negatively affected by browsing and trampling (Elmore and Kauffmann 1994). In upland communities, decadent plants with standing dead or dormant growth are unattractive to native herbivores but will be readily eaten by cattle in winter (Ganskopp 1993). The removal of this natural protective barrier can result in heavy grazing of the new growth on the plant by numerous herbivores, which can lead to increased plant mortality (Painter 1995).

In Utah, a study by Rasmussen and Brotherson (1986) compared a winter-grazed site to an ungrazed site between the Paria River and the Arizona state line in southern Utah. The ungrazed site had higher species diversity, significantly greater litter cover, significantly greater shrub cover, significantly greater winterfat (*Krascheninnikovia lanata*) cover, greater coverage of Indian ricegrass (*Achnatherum hymenoides*), and 10 times less Russian thistle (*Salsola kali*) cover than the winter-grazed site. They attributed the lower coverage of Indian ricegrass in the winter-grazed site to the fact that Indian ricegrass actively grows during the late winter months. In addition to impacts to the vegetal communities, Avery and Neibergs (1997) found that cattle grazing during winter may result in destruction of a large percentage of active tortoise burrows.

While considerable literature exists that enumerate the negative effects of grazing on the tortoise, particularly focused on habitat effects, there are no studies to date that quantify effects of grazing on entire populations of tortoises, or that demonstrate the absence or insignificance of such effects. Although this knowledge is critically needed in order to

inform management of the desert tortoise and its habitat, collecting such data may take decades.

f. Effects of Geology and Mineral Extraction

The direct effects and many of the indirect effects of mineral extraction are similar to those described for *land use authorizations* described above. Future oil and gas activity within ACECs will be managed with no surface occupancy. BLM anticipates that wildcat wells and an estimated one oil or gas field could occur during the life of the RMP. If an oil or gas field is located in non-critical desert tortoise habitat, up to 500 acres could be disturbed. Existing leases cover approximately 34,580 acres in the Beaver Dam Slope ACEC and 9,625 acres in the Mormon Mesa ACEC. These leases are not subject to the 'no-surface occupancy' lease stipulation required in the RMP/Final EIS. BLM estimates that up to 100 acres of tortoise habitat could be disturbed until existing leases expire and are replaced by new leases containing the 'no-surface occupancy' stipulation.

Lands within the desert tortoise ACECs will be closed to solid mineral leasing. Some areas within non-critical desert tortoise habitat outside of the ACECs will remain open to leasing subject to stipulations and conservation measures developed through subsequent section 7 consultation. However, based on the low potential for solid leasable minerals, development is deemed unlikely.

Disturbance in critical habitat for locatable minerals is based on BLM's estimate of potential development of existing mining claims within the Mormon Mesa ACEC (70 acres), the Beaver Dam Slope ACEC (24 acres), and a proportional distribution of the reasonably foreseeable development scenario outside of the ACECs (32 acres). Disturbance in non-critical desert tortoise habitat is based on proportional distribution of the reasonable foreseeable development scenario (7,500 acres) throughout the planning area. Mineral material disturbance estimates are based on potential expansion of existing sites as described in the BA.

g. Effects of Fire Management

BLM estimates that 360 acres of critical and 1,140 acres of non-critical desert tortoise habitat may be affected by fire management activities. Disturbance estimates are based upon statistical average of acres burned per year and opinions of BLM subject experts. The actual acreage that may be involved in fire management is dependant on many environmental factors thus making accurate predictions difficult.

<u>Fire Suppression</u>

In addition to the habitat impacts described above, desert tortoise may be killed or injured by fire equipment and vehicles. Other tortoises may be harassed or captured if in harm's

way. However, if fire suppression activities are hindered, the extent of desert tortoise habitat burned may increase and the number of tortoises affected (including killed or injured) is likely to increase.

Emergency Stabilization and Rehabilitation

BLM will design and implement emergency stabilization and rehabilitation actions to achieve vegetation, habitat, soil stability, and watershed objectives in accordance with their Programmatic Emergency Stabilization and Rehabilitation Plan (refer to Appendix C, page C-6 of the BA [BLM 2007a]). The Emergency Stabilization and Rehabilitation program will streamline procedures for completion of rehabilitation projects after a wildland fire. Implementation of stabilization and rehabilitation measures may cause short-term impacts such as increased erosion; however, there would be long-term benefits from increased soil stability, water quality, and wildlife habitat for listed species within the plan area. Over time, burned areas would be reclaimed to function as habitat for the listed species.

2. Big Spring Spinedace and its Critical Habitat

a. Effects of Weed Management

As part of BLM's weed management program, salt cedar and other invasive weeds as necessary may be removed from the riparian corridor in Condor Canyon. Removal of invasive weeds may be accomplished by the use of mechanical or chemical methods, or a combination of these methods. If salt cedar roots are removed, there may be short term effects of increased erosion from loss of bank stability. Herbicides from accidental spills, incorrect application, or residue flushed from rain events may enter the water and result in fish mortality. Removal of salt cedar may also result in a decrease in shading canopy, which may cause changes in water temperature. Personnel removing salt cedar may step in the channel, which may result in disturbance of substrate and destruction of eggs. Removal of salt cedar is expected to have long term beneficial effects to the species and its critical habitat by recovering the native plant community.

b. Effects of Special Status Species Management

BLM may assist with the implementation of restoration and habitat enhancement projects for the Big Spring spinedace that would provide long term benefits to the species, but may result in short term adverse effects. Projects that require the removal or manipulation of vegetation and soils may result in harassment of individuals and loss of eggs and larvae. Temporary increases in sedimentation may cause changes in spawning and foraging behavior. If restoration efforts require temporary stream diversion, fish would be captured and relocated to an alternate reach of the stream, which would cause stress to all individuals and may lead to mortality of a small portion of the relocated population.

c. Effects of Livestock Grazing

Livestock grazing may result in loss of ground cover, which promotes increased erosion and sediment deposition in the stream channel. Sediment deposition fills pool habitat and converts gravel substrates to silt, resulting in less suitable habitat for the spinedace. Cattle also trample stream banks, which contributes to soil instability and erosion. However, cattle grazing has been permitted in the Condor Canyon area for many years, during which the spinedace population has persisted. Although cattle most likely have caused some habitat degradation in the area, the extent to which this affects the spinedace is unknown.

d. Effects of Fire Management

Fuels Management

There may be a short term loss of understory and woody debris in drainages, which may result in increased erosion and sedimentation to streams and springs and a decrease in spinedace habitat quality. In the long term, fuels management would reduce erosion input to perennial drainages by increasing soil stability. Restoration of vegetation resilience and return to historical fire regimes would reduce impacts to aquatic habitat when wildfires occur.

Fire Suppression

Harassment or mortality to fish would occur if dipping or pumping water from the stream would be necessary during fire suppression activities. Also, withdrawal of water could result in a temporary reduction in available habitat. Indirect effects may include water quality degradation from fire retardant and increased sedimentation in runoff from disturbed sites such as fuel breaks or staging areas.

Emergency Stabilization and Rehabilitation

BLM will design and implement emergency stabilization and rehabilitation actions to achieve vegetation, habitat, soil stability, and watershed objectives in accordance with their Programmatic Emergency Stabilization and Rehabilitation Plan (refer to Appendix C, page C-6 of the BA [BLM 2007a]). The Emergency Stabilization and Rehabilitation program will streamline procedures for completion of rehabilitation projects after a wildland fire. Implementation of stabilization and rehabilitation measures may cause a short term increase in erosion; however, there would be long term benefits from increased soil stability, water quality, and wildlife habitat for listed species within the plan area. Over time, burned areas would be reclaimed and sedimentation input to the stream would be minimized or eliminated.

3. White River Springfish and its Critical Habitat

a. Effects of Weed Management

Environmental Impact Statements prepared by BLM between 1978 and 1989 indicate that removal of livestock from hot deserts would result in less soil erosion, increased water infiltration rates, and generally improved soils. Vegetation would gain health and vigor, and cover would increase (U.S. GAO 1991).

Weed treatments may be conducted at Ash Springs along the access road and parking area. Mechanical removal of weeds could result in short term surface disturbance and sediment input to the spring, depending on the extent of the disturbance area and location of weed removal efforts. Herbicides may enter the water and result in fish or invertebrate mortality.

b. Effects of Travel and OHV Management

Construction of a new access road to Ash Springs is being considered. Construction activities may result in the introduction of additional sediments and pollutants into the spring. Improvement of the road may promote greater use of the spring as a recreational swimming and picnic area, which would lead to further disruption of substrate, additional contribution of soaps, oils, and fragrances to the water from swimmers, and increased chance of vandalism from visitors.

c. Effects of Recreation

Public use of the spring pool as a recreational swimming area may result in disturbance to substrate, trampling and damage to banks and adjacent riparian vegetation, decreases in water quality, and destruction of eggs and larvae. Vandalism may also occur, which may include introduction of toxic substances into the water. The introduction of soaps, oils, and fragrances from swimmers may decrease water quality.

d. Effects of Fire Management

The effects of fire management (fuels management, fire suppression, and emergency stabilization and rehabilitation) described above for the Big Spring spinedace and its critical habitat would be essentially the same for the White River springfish and its critical habitat.

4. Pahrump Poolfish

a. Effects of Special Status Species Management

BLM may assist with the implementation of restoration and habitat enhancement projects for Pahrump poolfish that would provide long term benefits to the species, but may result in short term adverse effects. Projects that require the removal or manipulation of vegetation and soils may result in harassment of individuals and loss of eggs and larvae. Replacement of parts for water measuring instruments may also result in loss of eggs and larvae. Temporary increases in sedimentation may cause changes in spawning and foraging behavior. Construction of additional ponds, manipulation of water flow, or other activities associated with habitat enhancement may require translocation, salvage, or handling of individuals, which may result in stress to or mortality of a small portion of the population.

b. Effects of Livestock Grazing

Livestock grazing may result in loss of ground cover, which promotes increased erosion and sediment deposition in the stock pond and spring outflows. Sediment deposition fills pool habitat and converts gravel substrates to silt, resulting in less suitable habitat for the spinedace. Cattle also trample banks, which contributes to soil instability and erosion. However, cattle grazing has been permitted around the stock pond and outflow springs at Shoshone Ponds for many years, during which the poolfish population has persisted. Livestock grazing may also benefit poolfish in the stock pond by preventing overgrowth of vegetation in the pond. Although cattle most likely have caused some habitat degradation in the area, the extent to which this affects the poolfish is unknown.

c. Effects of Fire Management

The effects of fire management (fuels management, fire suppression, and emergency stabilization and rehabilitation) described above for the Big Spring spinedace would be essentially the same for the Pahrump Poolfish.

5. *Southwestern Willow Flycatcher*

a. Effects of Vegetation and Weed Management

Approximately 400 acres of suitable or potentially suitable flycatcher habitat along the Meadow Valley Wash are anticipated to be lost temporarily from weed removal projects, in particular, removal of salt cedar. Removal of suitable habitat may prevent flycatchers from breeding in the area until restored native vegetation reaches a suitable successional stage for breeding flycatchers. Incorrect application of herbicides may affect flycatchers that are in the vicinity of weed treatment areas. Salt cedar removal could result in the

loss of nests with eggs or young if conducted during the flycatcher breeding season. Harassment from noise and human presence may also occur if salt cedar removal is conducted during the breeding and migration season.

b. Effects of Lands, Realty, and Renewable Energy Actions

Approximately 40 acres of suitable or potentially suitable flycatcher habitat are anticipated to be temporarily disturbed from construction activities in rights-of-way. Two utility corridors originate at Meadow Valley Wash and Clover Creek. Issuance of rights-of-way for construction of utilities within these corridors may result in a short term loss of riparian vegetation that may be suitable as nesting or foraging habitat for the flycatcher. Construction activities may also result in harassment of individuals caused by increased noise and human presence, and loss of nests with eggs or young if conducted in suitable habitat during the flycatcher breeding season.

c. Effects of Travel, OHV, and Recreation Management

Approximately 89 acres of flycatcher habitat may be disturbed by OHV and other recreational activities. OHV use of existing roads and trails may result in erosion and crushing of riparian vegetation. Use of roads in or adjacent to suitable or potentially suitable flycatcher habitat during the breeding season may result in harassment of birds, and loss of nests with eggs or chicks. Use of roads during the breeding season may also result in indirect effects from increased noise and human disturbance, dispersal of invasive weeds, and dust effects associated with travel on unpaved roads and trails. Camping or other recreational activities that occur in flycatcher habitat may lead to trampling of vegetation, and may cause birds to flush from breeding or foraging sites during the breeding season.

d. Effects of Livestock Grazing

Livestock grazing occurs on BLM-administered land along the Meadow Valley Wash; however the extent or effect of grazing in riparian vegetation is not known. Livestock grazing in riparian vegetation elsewhere has resulted in decreased vegetation density necessary for maintaining suitable flycatcher breeding habitat. Decreased vegetation density may prevent birds from breeding in otherwise suitable habitat. Livestock may also trample vegetation and disturb nesting birds. Access to the stream channel may cause soil compaction and bank erosion, alter soil chemistry, and cause increased sediment input into the stream, all factors affecting the hydrological regime and which may lead to drying of the floodplain and subsequent depressed vigor and biomass of vegetation. Excessive grazing may also prevent the establishment of seedlings. Consumption of forage up to the maximum height of the herbivore reduces the vegetation's suitability for supporting nests, may increase nest detectability to predators, and reduces foraging options.

e. Effects of Geology and Mineral Extraction

Approximately 30 acres of flycatcher habitat may be removed as a result of mineral extraction activities. The Lower Meadow Valley Wash ACEC imposes the following limits to minerals extraction: (1) no surface occupancy for leasable minerals; (2) closed to locatable minerals; and (3) open to mineral materials with special stipulations. Mineral materials activities will be subject to controlled surface use, seasonal timing restrictions, restricted or no uses in avoidance areas (e.g., riparian areas, live water, areas with special wildlife or plant features, and sensitive watersheds), and additional NEPA analysis. There is currently no mineral materials extraction along the Meadow Valley Wash that is affecting flycatcher habitat. Future mineral materials extraction activities would be subject to the above restrictions. The indirect effects of constructing access roads and other ancillary structures for existing mining operations may result in loss of flycatcher habitat. Removal of suitable habitat during the breeding season may result in loss of nests with eggs.

f. Effects of Fire Management

Fire Suppression

Large wildland fires are relatively infrequent along the wash; therefore, it is anticipated that no more that 50 acres of flycatcher habitat would be affected by suppression activities. If wildland fire burns riparian habitat, it may result in the incremental loss of suitable or potentially suitable flycatcher habitat. In the event that wildland fire encroaches into riparian vegetation along the Meadow Valley Wash, suppression efforts may require the felling of trees for fire breaks to prevent further spread of fire, and disturbance of vegetation in staging areas or from emergency vehicle access. Effects to flycatchers may include loss of nests with eggs or chicks if fire suppression activities occur during the flycatcher breeding season.

Emergency Stabilization and Rehabilitation

Emergency stabilization and rehabilitation activities implemented under the Fire Management Program should have overall beneficial effects to listed species in the plan area. As described in Management Action FM-3 (4), BLM will design and implement emergency stabilization and rehabilitation actions to achieve vegetation, habitat, soil stability, and watershed objectives in accordance with their Programmatic Emergency Stabilization and Rehabilitation Plan (refer to Appendix C, page C-6 of the BA). The Emergency Stabilization and Rehabilitation program will streamline procedures for completion of rehabilitation projects after a wildland fire. Implementation of stabilization and rehabilitation measures may cause a short term increase in erosion; however, there would be long term benefits from increased soil stability, water quality, and wildlife habitat for listed species within the plan area. Over time, burned areas

would be reclaimed and sedimentation input to the stream would be minimized or eliminated.

6. *Anticipated Effects of BLM Proposed Decisions and Minimization Measures*

The potential effects of BLM's proposed action will be minimized by measures proposed in the BA; and decisions and conservation measures in the RMP/Final EIS. Other conservation measures are provided in the Final Programmatic EIS for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007c) to minimize potential effects to the listed species that may result from vegetation and weed management. Collectively, these measures are intended to improve the status of the species, improve habitats, minimize impacts, and reduce the likelihood that listed species would be killed or injured.

a. Beneficial Actions Common to All Listed Species

BLM will develop and implement an interagency inventory and monitoring program for special status plant and animal species (**SS-2)**. BLM will consider acquisition of lands or interest in lands with at-risk or high resource values or those characteristics that contribute to restoration, healthy watersheds, or other resource goals in the planning area, or those lands that also provide for environmentally responsible commercial activities (**LR 26**). BLM will recommend withdrawal of lands with sensitive or high resource values (*e.g.*, ACECs) from surface and mineral entry (**LR-31**). BLM will consider requests by other federal agencies for new withdrawals, withdrawal relinquishments, and modifications on a case-by-case basis (**LR-32**).

BLM will emphasize treatment areas that have the best potential to maintain desired conditions or respond and return to the desired range of conditions and mosaic upon the landscape. Specific management objectives through the watershed analysis process will be developed, and management strategies will be designed to achieve plant composition within the desired range of conditions for vegetation communities, emphasizing plant and animal community health at the watershed level. Conservation and maintenance of existing healthy, resilient, and functional vegetation communities will be emphasized (**VEG-1 through VEG-4, VEG-6).**

BLM will continue to use integrated weed management to treat weed infestations and use the principles of integrated pest management to meet management objectives and to reestablish resistant and resilient native vegetation communities. Movement of weeds will be minimized; weeds will be removed in a manner designed to kill seeds and weed parts; straw, hay, or other products used for reclamation or stabilization activities will be certified as weed free; source sites such as borrow, fill, or gravel pits will be inspected; and vehicles and heavy equipment used during ground disturbing activities, emergency fire suppression, or authorized off-road driving will be free of soil and debris capable of carrying weed propagules. Animals used on public lands by special recreation permittees

or contractors will be weed-free. Areas of weed infestation will be flagged and avoided during planned disturbance activities, weed-infested soils will not be moved or redistributed, and weed surveys will be conducted prior to project approval. These management actions (**Weed 1 through 10**) should prevent the further spread of non-native invasive weeds, and restore native vegetation in areas that have been overtaken by non-native species (in particular, salt cedar), thus improving the quality of the habitat for the desert tortoise, listed fishes, and the flycatcher.

b. Desert Tortoise and its Critical Habitat

General
Authorized biologists and monitors will survey for tortoises in project areas to ensure that tortoises are located and move any tortoise from harm's way (**SS-3; SS-33**; **LR-49**; **REC-21; FM-7**). Where appropriate, BLM proposes to restrict permitted activities from March 1 through October 31 within desert tortoise habitat (**SS-32**). BLM will require the area underneath vehicles be checked for sheltering tortoises (**SS-33**).

Within ACECs: BLM will ensure that an authorized biologist will be onsite; fencing may be installed and inspected to exclude tortoises from project areas; desert tortoise burrows will be avoided; and desert tortoise nests will be relocated from harm's way (**SS-33**). For actions that occur anywhere in desert tortoise habitat, BLM proposes to assess remuneration fees; ensure that project personnel will be informed of the tortoise through a desert tortoise awareness program; BLM wildlife staff will review all proposed actions to ensure that appropriate measures have been incorporated into BLM authorizations; and a designated BLM representative will oversee compliance with terms and conditions of all permitted activities and reporting requirements (**SS-33**).

Lands and Realty
BLM's decision to retain lands within ACECs would ensure that private development will not occur in these areas (**LR-2**) and establish them as avoidance or exclusion areas (**LR-42**). BLM established wilderness study areas as avoidance areas (**LR-40**) and wilderness as exclusion areas (**LR-41**).

Geology and Mineral Extraction
The Kane Springs ACEC will be closed to all mineral leasing and the Mormon Mesa and Beaver Dam Slope ACECs will be closed for solid mineral leasing and managed for no surface occupancy for fluid mineral leasing (**MIN-9, MIN-13**). All three desert tortoise ACECs will be closed to locatable mineral activities subject to valid existing claims (**MIN-16**) and closed to salable mineral activities except the 1-mile-wide corridor along major roads (**MIN-21**).

Recreation
Impacts to the desert tortoise that may occur as a result of recreation would be minimized by measures to designate roads/trails for recreation and visitor use, including closing those identified by BLM as unnecessary; and prohibiting speed OHV events in ACECs (**REC-17**). BLM will manage OHV events to restrict spectators, support staff, and participants to designated areas; designate a BLM representative to oversee permitted activities; provide a map of approved or designated routes for public use; and limit the number, type, and location of OHV events (**REC-13, REC-14, REC-15, REC-18, REC-19, REC-20, REC-21**).

Habitat Disturbance
In addition to the general measures described above, BLM proposes to minimize impacts to, and disturbance of desert tortoise habitat by implementing measures to minimize the extent of potential disturbances (**MIN-1**); conducting habitat restoration and ensuring that remuneration fees are paid to fund conservation programs; restricting vehicles to existing, designated routes; ensuring that seed mixes are appropriate and weed-free; and avoiding tortoise burrows located in project areas, where possible.

The potential effects of mineral extraction and exploration activities would also be minimized by closing important desert tortoise habitat to leasing and restricting or prohibiting surface use in ACECs, and closing all desert tortoise ACECs to locatable mineral activities and restricting development of mineral materials.

BLM decisions in the RMP will restore and maintain a desired range of soil conditions (**SR-1)** including salvaging and stockpiling seed and all available growth media prior to surface disturbance for soil disturbing actions which will require reclamation; recontouring and ripping compacted soils; and establishing an adequate seed bed (**SR-2**). BLM will protect soils from high compaction during surface disturbing activities through soil moisture and/or seasonal use restrictions commensurate with soil surface texture or other properties (**SR-3**).

Roads
Road impacts would be minimized by exclusionary fencing, posting informative signs and speed limits; and restricting or prohibiting new roads (**SS-29, SS-33, LR-49, TM-6, MIN-1**); closing wilderness (which includes desert tortoise habitat) to motor vehicles (**TM-1**); and designating, mapping, rerouting, closing, and rehabilitating roads identified for these actions in transportations plans (**TM-4**, **TM-7**).

Harmful Substances
The potential exposure of tortoises to harmful substances would be minimized by requirements to mix and clean herbicides away from sensitive areas (BMP 1.3.13); ensuring herbicides are applied by certified applicators (BMP 1.19.2); and properly containing and disposing of hazardous materials (**MIN-1**; BMPs 1.19.9; 1.19.11; 1.19.12; and 1.19.14).

Predators
BLM will require removal and disposal of garbage and trash which may attract desert tortoise predators (**LR-49**). BLM will also cooperate with the Service, NDOW, and the U.S. Department of Agriculture-Wildlife Services, in a program to control desert tortoise predators (**SS-27**).

Livestock Grazing
Desert tortoise ACECs will be closed to grazing (**LG-2**). Allotments will be monitored and evaluated by frequent site visits to ensure standards are being met (**LG-4**). Allotments that become vacant may be dedicated to purposes that preclude livestock (**LG-7**). Vehicle use will be restricted and no new access roads will be considered (**LG-8**). Permittees will be required to take action to remedy straying livestock and BLM will make regular site visits to active allotments (**LG-8**).

Potential effects that may result from issuance of grazing permits would be minimized by those measures identified above, and implementation of a tortoise awareness program; designation of a BLM representative to oversee permitted activities; checking underneath parked vehicles for tortoises before they are moved; use of previously disturbed areas where possible; removing project-related materials; prohibiting ground disturbance and damage, collection, or introduction of plants or animals; and reporting research data to BLM and the Service. BLM's requirement for permittees to provide data collected under research or monitoring permits may contribute towards recovery of the tortoise by minimizing future impacts in the action area and increasing our knowledge base for the species.

Recovery
BLM will develop and implement an interagency inventory and monitoring program for special status plant and animal species (**SS-2**). BLM will participate on interagency recovery implementation teams to identify and address implementation of management actions for the recovery of listed species in the Ely planning area (**SS-3**). BLM will manage desert tortoise habitat by implementing those actions and strategies identified in the Desert Tortoise Recovery Plan and appropriate actions from other plans that the Ely District Office has the authority to implement (**SS-24**). BLM will coordinate with the Service and NDOW to inventory desert tortoise habitat and desert tortoise populations (**SS-25**). BLM will implement an interagency monitoring program for desert tortoise habitat and desert tortoise populations, approved by the Service and the Desert Tortoise Management Oversight Group (**SS-26**). BLM will coordinate with the Service and NDOW to develop approved translocation research projects for desert tortoises (**SS-28**). BLM will coordinate with local, state, and Federal agencies to install tortoise-proof fencing and crossing culverts along US 93 in the Kane Springs ACEC and along other roads, as needed, in all three desert tortoise ACECs (**SS-29**). BLM will manage leased public lands in the Coyote Springs area in accordance with Public Law 100-275 dated March 31, 1988, and the Land Lease Agreement signed July 14, 1988 (**SS-30**).

c. Measures Applicable to the Listed Fishes and Southwestern Willow Flycatcher

Many proposed management actions in the RMP that would minimize effects of BLM's management programs or improve listed species status are applicable to the three fishes, their critical habitats, and the flycatcher. These measures are summarized below by management program or resource.

Water Resources
WR-1, WR-2, WR-4: BLM will ensure authorized activities on public lands will not degrade water quality, and will integrate land health standards, best management practices, and appropriate mitigation measures into authorized activities to ensure water quality meets state requirements and BLM resource management objectives. BLM will maintain or improve watershed conditions by controlling or restricting land uses and utilizing tools, where appropriate, to promote desired vegetation conditions. The implementation of these actions should contribute to overall improvement of riparian and aquatic habitats within the planning area.

Soil Resources
SR-1, SR-3: BLM will restore and maintain a desired range of conditions to increase infiltration, conserve soil moisture, promote groundwater recharge, and ground cover composition to increase or maintain surface soil stability and nutrient cycling. Soils will be protected from high compaction during surface disturbing activities through soil moisture and/or seasonal use restrictions commensurate with soil surface texture or other properties on a case-by-case basis. Implementation of these actions should help to maintain quality habitat for the fishes and the flycatcher.

Vegetation and Weed Management
VEG-23, VEG-24: BLM will promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, to provide for stable water flow and bank stability. Management actions will focus on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat. Implementation of these actions should facilitate restoration of previously non-functional riparian areas or areas functioning at risk to properly functioning condition and improve habitat for the fishes and the flycatcher.

Special Status Species
SS-10: BLM will mitigate all discretionary permitted activities that result in the loss of aquatic and priority wildlife habitats by improving 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.

Lands and Realty
LR-2, LR-5, LR-46: ACECs and lands with springs and creeks that contain fisheries will be retained in Federal ownership unless the disposal of these lands will result in the acquisition of lands with higher quality habitat. Surface disturbances from unauthorized uses will be reclaimed to pre-disturbance conditions, to the extent possible.

Travel Management and OHV Use
TM-4: The Ely District is currently open to cross country travel. BLM will complete designation of vehicle routes as open, closed, or limited use within the Ely District. Until route designation is completed, motorized travel will be limited to existing roads and trails, with certain exceptions. These limitations should reduce the amount of disturbance to vegetation, prevent erosion, and increase soil stability, thereby improving habitat for listed species.

d. Measures Applicable to Big Spring Spinedace and its Critical Habitat, White River Springfish and its Critical Habitat, and Pahrump Poolfish

SS-3: BLM will participate on interagency recovery implementation teams to identify and address implementation of management actions for the recovery of listed species in the Ely planning area. BLM's participation in the development and implementation of recovery actions should increase the potential for successful recovery of the species.

e. Measures Applicable to Big Spring Spinedace and its Critical Habitat

SS-17: BLM will manage Big Spring spinedace habitat by implementing those actions and strategies identified in the Big Spring Spinedace Recovery Plan that the Ely District has the authority to implement, and in accordance with the Condor Canyon Habitat Management Plan. BLM's participation in the development and implementation of recovery actions for the Big Spring spinedace should increase the potential for successful recovery of the species.

SD-3: BLM will designate the Condor Canyon ACEC, to protect Big Spring spinedace and its designated critical habitat. Management activities and associated prescriptions for the Condor Canyon ACEC is provided in Table 9.

f. Measures Applicable to White River Springfish and its Critical Habitat

SS-2: BLM will develop and implement an interagency inventory and monitoring program for special status plant and animal species. Currently, population surveys for the White River springfish are not regularly conducted. BLM may be able to facilitate more frequent surveys for the species to gain a better understanding of the status of the population.

SS-21: BLM will manage White River springfish habitat at Ash Springs by implementing actions and strategies identified in the Recovery Plan for the Aquatic and Riparian Species of Pahranagat Valley and the Ash Springs Coordinated Management Plan. BLM's participation in the development and implementation of recovery actions for the White River springfish should increase the potential for successful recovery of the species.

LR-33: BLM will withdraw the 80-acre area around Ash Springs from settlement, sale, location, or entry.

g. Measures Applicable to Pahrump Poolfish

BLM will:

SS-11: Manage the refugium at Shoshone Ponds for Pahrump poolfish in accordance with the Recovery Plan for the species.

SS-12: Expand the fenced area at Shoshone Ponds.

SS-13: Manage the uplands around Shoshone Ponds to increase vegetation cover, reduce runoff, and prevent excessive siltation into the ponds.

SS-14: Develop additional ponds at Shoshone Ponds to increase the habitat for the Pahrump poolfish.

SD-3: Designate the Shoshone Ponds ACEC to protect Pahrump poolfish. Management activities and associated prescriptions for the ACEC are provided in Table 9.

h. Measures Applicable to Southwestern Willow Flycatcher

WL-16: When planning projects, BLM will consider migratory birds, as appropriate, to minimize take and limit impacts.

WL-17: BLM will work with the Service, NDOW, and other partners (*e.g.*, Great Basin Bird Observatory, Partners in Flight) to conduct breeding bird surveys that document the population status and trends of migratory bird species of concern.

SS-2: BLM will develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-19: BLM will manage southwestern willow flycatcher habitat by implementing actions and strategies identified in the Recovery Plan for the species and appropriate actions from future habitat conservation plans. BLM's participation in the development

and implementation of recovery actions and habitat conservation plans should increase the potential for successful recovery of the southwestern willow flycatcher.

SS-20: BLM will limit livestock grazing in the Lower Meadow Valley Wash ACEC through terms and conditions and/or season-of-use restrictions on grazing permits in accordance with a site-specific ACEC plan.

SD-3: BLM will designate the Lower Meadow Valley Wash ACEC, to protect southwestern willow flycatcher and other riparian and aquatic associated species of concern. Management activities and associated prescriptions for the ACEC are provided in Table 9.

G. Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities that are reasonably certain to occur in the project area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The vast majority of the human population in southern Nevada is concentrated in the Las Vegas Valley and has increased significantly over the past 20 years. Tourism is the major industry in the area and the proximity of the planning area to urban areas including Las Vegas, Mesquite, and St, George, Utah makes the area very popular with tourists and locals. With increased tourism, there may be an increase of visitors not familiar with the area. Their presence could lead to the capture or collection of desert tortoise and the use of vehicles off existing roads and trails, further impacting the tortoise and its habitat. Increased traffic on US 93, SR 168, and other roads will increase fragmentation of the Mormon Mesa CHU and non-critical habitat for the desert tortoise, and may result in increased road kills.

Desert tortoise habitat at the interface between developed lands and open desert is most susceptible to negative impacts. There may be an alteration of predation rates beyond what could be considered normal. Public land adjacent to urban areas may be affected by indiscriminate use of firearms and OHV use. The majority of the lands within the action area are administered by BLM. Therefore, any actions on these lands would be subject to consultation under section 7 of the Act. Effects to listed species from actions on non-Federal lands must be addressed under section 10 of the Act. Lincoln County is currently developing a habitat conservation plan for the southeastern portion of the county that would minimize and mitigate effects from development on the desert tortoise and the southwestern willow flycatcher. Coyote Springs Investment is developing a habitat conservation plan for their lands in Coyote Spring Valley.

As the population in southern Nevada continues to grow, greater demands will be placed on available surface and ground water resources. The disposal of Federal land for urban development will increase the need to develop additional water to support new communities that

will be built on that land. Water sources for future land development within the planning area are unknown; however, applications to the Nevada State Engineer for new water rights, or changes to existing rights would be required. As additional water sources are identified, potential effects to listed species that depend on aquatic and riparian habitats must be considered, and if necessary, addressed either under section 7 or section 10 of the Act, as appropriate.

H. Conclusion

After reviewing the current status of the species, the environmental baseline for the project area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that implementation of programmatic activities as proposed in BLM's Proposed RMP/Final EIS and BA is not likely to jeopardize the continued existence of the threatened Mojave population of the desert tortoise, the threatened Big Spring spinedace, the endangered White River springfish, the endangered Pahrump poolfish, and the endangered southwestern willow flycatcher, or adversely modify any designated critical habitat for these species.

We have reached this conclusion based on the following assumptions:

(1) BLM will implement actions identified above to minimize or avoid adverse effects on listed species, and that will result in beneficial effects to these species.
(2) BLM will implement the recommendations of approved recovery plans within their authority (RMP Decisions **SS-11, SS-17, SS-19, SS-21, SS-24**);
(3) As part of the livestock grazing term permit process, BLM and the Service will develop allotment-level grazing prescriptions and monitoring procedures for allotments within the habitat of the desert tortoise, Big Spring spinedace, Pahrump poolfish, and southwestern willow flycatcher. If such plans are not developed, BLM will reinitiate consultation on their livestock grazing program.
(4) BLM will reduce or eliminate the effects of livestock on listed species by reducing AUMs, restricting areas of use, reducing season or duration of use, or removal of livestock from allotments (or portions of allotments) that fail to meet the objectives of that allotment for listed species and livestock consistent with existing law and regulation.
(5) Habitats of the listed species should be able to sustain viable populations of those species if rangeland health standards are being met.
(6) Restoring riparian systems that are non-functioning or functioning at-risk to properly functioning condition will result in an improvement of habitat for the fishes and the flycatcher.
(7) Other than ongoing actions such as non-permitted recreation and visitor use, no actions will proceed under this biological opinion until BLM submits required information on each project that *may adversely affect* the desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, and southwestern willow flycatcher and a response has been received from the Service to append this programmatic biological opinion in accordance with the Service's draft guidance for programmatic biological opinions.

(8) Desert tortoise, Big Spring spinedace, Pahrump poolfish, White River springfish, and southwestern willow flycatcher will be conserved by land use restrictions for White River springfish and management of ACECs established specifically for protection of listed species.

INCIDENTAL TAKE STATEMENT

A. Incidental Take for Programmatic Consultations

Each BLM action that may result in incidental take must have an incidental take statement, whether the action is the adoption of a strategy for developing future projects or the implementation of specific activities under the strategy. The take anticipated as a result of a specific action would be a subset of the programmatic incidental take statement. Though the intent in the appended programmatic approach is for the programmatic incidental take statement to contain all necessary reasonable and prudent measures and associated terms and conditions, due to the lack of available information regarding the specifics of individual projects, it may be necessary to develop project-specific reasonable and prudent measures and terms and conditions to ensure the minimization of the impacts of the incidental take associated with the specifics of each individual project. However, if this is the case, the Service would carefully consider whether the individual proposed project is beyond the scope of the programmatic consultation.

Section 9 of the Act, as amended, prohibits take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to, and not intended as part of the agency action, is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The Service hereby incorporates by reference the conservation measures proposed by BLM from the *Description of the Proposed Action* into this incidental take statement as part of these terms and conditions to be applied to future appended actions, as appropriate. Some decisions in the RMP/Final EIS are measures that would minimize adverse effects to listed species which are also incorporated into this incidental take statement as terms and conditions. Terms and conditions for actions covered under, or appended to, this opinion: (1) modify the measures proposed by BLM, or (2) specify additional measures considered necessary by the Service. Where action-specific terms and conditions (*i.e.*, terms and conditions developed for each action to be

appended and covered under this programmatic opinion in the future) vary from or contradict the minimization measures proposed under the *Description of the Proposed Action* or general terms and conditions below, the action-specific terms and conditions shall apply. The measures described below are general in nature and may or may not apply to future actions proposed for appendage to this programmatic biological opinion. Terms and conditions that are specific to future BLM projects or actions are nondiscretionary and must be implemented by BLM so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply.

BLM has a continuing duty to regulate the activity that is covered by this incidental take statement as long as the affected area is retained in Federal ownership and/or control. If BLM (1) fails to require the project proponent to adhere to the action-specific terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with action-specific terms and conditions, the protective coverage of section 7(o)(2) may lapse.

B. Amount or Extent of Take Exempted

Based on the analysis of impacts provided above, history of effects from similar actions including the previous programmatic biological opinion covering the same action area, anticipated scope of all future actions, and minimization measures proposed by BLM, the Service anticipates that the following take of the listed species could occur as a result of the proposed action at the programmatic level. Generally, no incidental take of the listed species is, or will be exempted under this Incidental Take Statement as a result of disposal of public land. The Service anticipates that the take of listed species that results from these actions would typically fall under purview of Section 10 of the Act following the transfer of ownership.

1. Desert Tortoise

Based on desert tortoise population density estimates, anticipated extent of habitat disturbance (Table 3), type of activities anticipated, anticipated effects to the desert tortoise, reports of incidental take for similar actions, and scope of proposed activities at the program level, the Service anticipates that the following incidental take of desert tortoise may occur:

PROGRAM	MAX. NO. TORTOISES ANTICIPATED TO BE TAKEN:	
	LETHAL	NON-LETHAL[1]
Vegetation and Weed Management	2	No estimate available[2]
Lands & Realty	10	850
Travel and OHV Management	10	No estimate available[2]
Recreation	5	100
Livestock Grazing	10	No estimate available[2,3]
Geology and Mineral Extraction	5	22
Fire Management	5	No estimate available[2]

[1]All desert tortoises found in harm's way may be taken by harassment which includes capture, displacement, relocation, and disruption of behavior. When sufficient information is available, the Service provides an estimate for the number of desert tortoises anticipated to be non-lethally taken at the programmatic level, however, action- or project-specific take will be exempted for each appended action.

[2]Although no estimates are available for animals taken by non-lethal means, the Service determined that these tortoises will remain in the wild and serve their role for recovery; the effects to these animals will be minimal and short-term.

[3]All desert tortoises that occur on actively grazed livestock allotments may be adversely affected by livestock through harassment or through harm if livestock is not managed to meet the needs of the tortoise. As part of the issuance of term grazing permits, monitoring plans and population and/or habitat thresholds will be established during project-specific consultation. If established thresholds are reached at any time during the term permit, take would be exceeded under this biological opinion.

In addition, the Service estimated that over the 10-year term of this biological opinion, two tortoise nests with eggs per year may be excavated and relocated, or incidentally destroyed if not found during clearance surveys.

To ensure that the protective measures are effective and are being properly implemented, BLM shall contact the Service immediately if a desert tortoise is killed or injured as a result of any activity covered under this biological opinion. Upon locating a dead or injured desert tortoise within the action area, notification must be made to the Nevada Fish and Wildlife Office at (702) 515-5230. At that time, the Service and BLM shall review the circumstances surrounding the incident to determine whether additional protective measures are required. If more than two desert tortoises are found dead or injured during any calendar year, activities may proceed; however, BLM shall contact the Service immediately to determine whether formal consultation should be reinitiated. This threshold is intended to determine whether certain activities or circumstances may be affecting desert tortoises more substantially than we anticipated.

2. Big Spring Spinedace, White River Springfish, and Pahrump Poolfish

The Service anticipates incidental take of Big Spring spinedace, White River springfish, and Pahrump poolfish could occur as a result of the following programs over the course of the 10-year timeframe of this biological opinion:

Big Spring spinedace
- Weed Management
- Special Status Species Management
- Livestock Grazing
- Fire Management

White River springfish
- Weed Management
- Travel and OHV Management
- Recreation
- Fire Management

Pahrump poolfish
- Special Status Species Management
- Livestock Grazing
- Fire Management

Incidental take of the fishes is expected to be primarily in the form of harm or harassment. Take of fish species is difficult to detect and quantify because dead fish or crushed eggs would be difficult to find, harassment of individuals may occur under situations where it is not observed, losses may be masked by seasonal fluctuations in population numbers or distribution, or a direct cause-and-effect correlation between BLM's programs and take may be difficult to establish. Therefore, take of the fishes is expressed as the proportion of the population taken during any one event or activity, or estimated using a surrogate factor identified for each species below that is associated with changes in habitat and/or population size.

Big Spring Spinedace

- Take in the form of harm or harassment during weed removal projects may occur within no more than 20 percent of the habitat, measured as length of the stream reach, during any one weed removal project.
- The entire population may be harassed as a result of salvage events during habitat restoration activities. No more than 5 percent of the population may be taken in the form of injury or mortality during any one salvage event. An unquantifiable number of eggs or larvae may be taken during these events.

- The entire population may be harassed as a result of ongoing livestock grazing. As part of the issuance of term grazing permits, monitoring plans and population and/or habitat thresholds will be established during project-specific consultation. If established thresholds are reached at any time during the term permit, take in the form of harm would be exceeded under this biological opinion.
- A small portion (*i.e.*, less than 10 percent) of the population is anticipated to be taken during any one water drafting event for fire management.

White River Springfish

- The small portion of the population that occurs on BLM-administered land (which is approximately one-quarter of the 2-acre pool area) may be taken in the form of harm or harassment during weed removal projects.
- The same portion of the population may be taken in the form of harm or harassment during any one soil-disturbing event associated with improvement of the access road.
- The same portion of the population may be taken in the form of harm or harassment from ongoing recreational use in the springpool.
- The same portion of the population may be taken during any one water drafting event for fire management.

Pahrump Poolfish

- The population may be harassed as a result of salvage events during habitat restoration activities. No more than 5 percent of the population within any one pool may be taken in the form of injury or mortality during any one salvage event. An unquantifiable number of eggs or larvae may be taken during these events.
- The portion of the population occurring in the stock pond and artesian well outflow may be harassed or harmed as a result of ongoing livestock grazing. As part of the issuance of term grazing permits, monitoring plans and population and/or habitat thresholds will be established during project-specific consultation. If established thresholds are reached at any time during the term permit, take in the form of harm would be exceeded under this biological opinion.
- A small portion (i.e., less than 10 percent) of the population is anticipated to be taken during any one water drafting event for fire management.

3. Southwestern Willow Flycatcher

The Service anticipates incidental take of southwestern willow flycatcher to be primarily in the form of harm due to short-term loss or disturbance of habitat as a result of discretionary BLM actions. Estimated habitat disturbance for each program is:

Program	Acres Disturbed
Vegetation and Weed Management	400
Lands and Realty	40
Travel, OHV, and Recreation	89
Minerals Extraction	30
Fire Management	50

Vegetation and weed management activities and construction in rights-of-way could cause harm through short term loss of suitable or potentially suitable habitat. Ongoing livestock grazing may prevent vegetation from reaching a seral stage suitable for breeding flycatchers. Grazing may also cause bank erosion and soil instability, which may alter stream hydrology and result in drying of the riparian area. Livestock grazing and fire management activities may also result in harassment or mortality of flycatchers if grazing or fire suppression activities occur in suitable habitat during the flycatcher breeding season.

Based on limited data from previous survey efforts along the Meadow Valley Wash, the Service anticipates that no more than one nesting pair of flycatchers may be taken every 5 years. However, it is difficult to detect and quantify incidental take of flycatchers because finding a dead or impaired specimen is unlikely, harassment of individuals may occur under situations where it is not observed, and losses may be masked by seasonal or temporal fluctuations in population numbers or distribution. Therefore, it is assumed that take of southwestern willow flycatcher will have been exceeded if:

(a) Disturbance of suitable or potentially suitable flycatcher habitat exceeds the acreage of disturbance for each program listed above, or

(b) population and/or habitat thresholds established for livestock grazing program during project-specific consultation are reached at any time during the term permit.

C. Effect of Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, or southwestern willow flycatcher, or destruction or modification of critical habitat for the desert tortoise, Big Spring spinedace, or White River springfish.

D. Programmatic Reasonable and Prudent Measures with Terms and Conditions

The Service believes that the following reasonable and prudent measures (RPMs) with terms and conditions stated below or incorporated by reference are necessary and appropriate to minimize the incidental take for ongoing actions and may be relevant for future actions to be appended to this biological opinion. In order to be exempt from the prohibitions of section 9 of the Act, BLM must comply with RPMs as implemented by terms and conditions. For future actions to be appended to this biological opinion, terms and conditions will be provided at the project-level consultation and are non-discretionary. Terms and conditions will be based on measures proposed by BLM in this document and the October 2007 BA to minimize the potential impacts to desert tortoise, Big Spring Spinedace, White River Springfish, Pahrump poolfish, and southwestern willow flycatcher. **These measures below may not apply to all future actions; they may apply with modification; and/or additional measures may be required when specific actions are proposed for appendage to this programmatic biological opinion. Where proposed measures or decisions vary from measures in this biological opinion, measures in this biological opinion shall take precedence.**

<u>All species</u>

RPM 1. BLM shall implement measures to ensure **compliance** with the reasonable and prudent measures, terms and conditions, project reporting requirements, and reinitiation requirements contained in this biological opinion.

Terms and Conditions:

1.a. BLM shall keep an up-to-date log of all actions taken under this consultation including acreage affected; number of listed species taken and form of take; and fees paid for each action. BLM will provide the log information to the Service on an annual basis. Information will be cumulative throughout the term of this consultation. The first annual report will cover the period through December 31, 2008, and will be due to the Service by February 15, 2009. Subsequent annual reports will cover the calendar year and be due on February 15 of the following year.

<u>Desert tortoise</u>

RPM 2: BLM shall implement measures to minimize the incidental take of desert tortoises that may result from **implementation of all programs**.

Terms and Conditions:

2.a. 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 non-compliance with this biological opinion.

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

2.c. Desert tortoises shall be treated in a manner to ensure that 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 2 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.

2.d. 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.

2.e. 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.

RPM 3: BLM shall implement measures to minimize the incidental take of desert tortoises that may result from **habitat disturbing activities**, including mineral extraction activities and activities authorized by BLM on rights-of-way.

Terms and Conditions:

3.a. BLM shall implement measures in the RMP/Final EIS, proposed for Special Status Species (**SS**), Lands and Realty (**LR**), Renewable Energy (**RE**), and Geology and Mineral Extraction (**MIN**) unless modified below or at the project-level consultation.

3.b. Prior to vehicle and equipment travel on a right-of-way or project area, authorized biologists shall survey for desert tortoises and their burrows using Service-approved protocols unless determined to be unnecessary by the Service at the project-level consultation. Timing of the survey will be determined at the project-level consultation. All potential desert tortoise burrows will be examined to determine occupancy of each burrow by desert tortoises in accordance with Service-approved protocol.

3.c. Companies controlling new road segments shall be required to restrict access to the general public. This restriction could be in the form of closed gates and will not apply to authorized agents of the operator or their subcontractor(s), the land managing agency, and other agencies with a legitimate access need.

3.d. When a permitted or approved activity, including unauthorized disturbances such as may occur during OHV events, results in residual impacts to desert tortoise habitat, remuneration fees shall be required. The fee rate will be determined during the NEPA process for each proposed action. Fees for disturbance of desert tortoise critical habitat will be calculated according to the formula identified in the document, Compensation for the Desert Tortoise (Hastey *et al.* 1991). The section 7 fees will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) and becomes effective March 1 of each year. Information on the CPI-U can be found on the internet at: http://stats.bls.gov/news.release/cpi.nws.htm.

3.e. Prior to starting operations each day on any project that is not totally enclosed by tortoise-proof fencing and cattleguards, the project proponent shall be responsible for conducting a desert tortoise inspection by authorized desert tortoise biologists using techniques approved by the Service and BLM. The inspection will determine if any desert tortoises are present in the following locations:

- Around and under all equipment;
- In and around all disturbed areas to include stockpiles and reject materials areas;
- In and around all routes of ingress and egress; and
- In and around all other areas where the operation might expand to during that day.

If a tortoise is discovered during this inspection or later in the day, the operator will immediately cease all operations in the immediate vicinity of the tortoise and will immediately notify BLM authorized officer.

3.f. Within desert tortoise ACECs: Mineral exploration shall be allowed only on existing roads and trails unless a route can be identified that results in no substantial habitat disturbance as determined at the project-level consultation. All proposed surface disturbance and vehicular travel will be limited to the approved operation plan and access route. Upon determination of an impending field development, a transportation plan will be prepared and submitted to the Service for activity-level consultation. No blading or other dirt work will be allowed without prior approval of BLM authorized officer. An authorized biologist will monitor cross-country travel for tortoise and will move them as needed.

3.g. Drilling fluids and cuttings shall be contained in portable mud pits or lined reserve pits in all operations.

3.h. Vibriosis, drill hole shot, or surface shot shall not be completed within 100 yards of known tortoise burrows.

3.i. No surface activity for fluid minerals leasing shall be allowed within desert tortoise habitat from March 1 to October 31 without concurrence from the Service.

3.j. Upon completion or temporary suspension of mining operations, the project proponents shall backfill all holes and trenches and re-contour the pit to the natural slope, if possible, with pit walls greater than 3 feet in height knocked down and sloped at 3 horizontal to 1 vertical or to the original topography, whichever is less.

3.k. BLM will include stipulations for future rights-of-way grants, renewals, and amendments for towers authorized under this biological opinion to require that structures be inspected annually for nesting ravens and observations of raven nests. All nests shall be reported to the Service. The right-of-way grantee will

cooperate with the Service to discuss the necessity to remove any nests determined by the Service to threaten tortoise populations in the area.

RPM 4: BLM shall implement measures to minimize the incidental take of desert tortoises that may result from **travel, OHV, and recreation management**.

Terms and Conditions:

4.a. BLM shall implement measures in the RMP/Final EIS, proposed for Travel Management and OHV Use (**TM**) and Recreation Management (**REC**) unless modified below or at the project-level consultation.

4.b. Desert washes shall be managed as avoidance areas for OHV activity.

4.c. Until site-specific implementation plans and route designations are complete, motorized travel shall be limited to existing roads and trails except when cross-country travel is needed for safety, required for government (federal, state, and local) administrative needs, as authorized on a permit, for big game retrieval, or as otherwise officially approved. Upon completion of route designations, BLM will produce a map depicting the designated roads, primitive roads, and trails post it on a BLM website. A printed map will be available for the public at BLM offices as soon as funding is available and printed copies have been made..

4.d. Establishment of new permanent roads and trails shall be avoided in desert tortoise habitat. New access routes may be allowed outside desert tortoise critical habitat if BLM and the Service determine that the road is compatible with tortoise conservation efforts.

4.e. Event routes shall be designated and additional measures developed at the activity level. Habitat disturbed by event-related vehicles will require remuneration fees in accordance with Hastey *et al*. 1991.

4.f. For all events: Any desert tortoise found on or adjacent to the event course shall be temporarily penned if in a burrow or moved into undisturbed desert within 2 miles by a authorized tortoise biologist or BLM personnel experienced or trained in the handling of tortoises, according to current Service-approved protocol. Currently, the Service-approved protocol is "Guidelines for Handling Desert Tortoises during Construction Projects (Desert Tortoise Council 1994, revised 1999)."

Occupied desert tortoise burrows along the event route during a period of reduced tortoise activity (*e.g.,* winter), may be temporarily penned to ensure the tortoise is confined to the burrow and immediate area. Tortoises should not be penned in

areas of moderate or heavy public use. Penning shall be accomplished by installing a circular fence, approximately 20 feet in diameter to enclose the tortoise/burrow. The pen should be constructed with durable materials (*i.e.*, 16 gauge or heavier) suitable to resist desert environments. Fence material should consist of ½-inch hardware cloth or 1-inch horizontal by 2-inch vertical, galvanized welded wire. Pen material should be 24 inches in width. Steel T-posts or rebar (3 to 4 feet) should be placed every 5 to 6 feet to support the pen material. The pen material should extend 18 to 24 inches aboveground. The bottom of the enclosure shall be buried several inches; soil mounded along the base; and other measures should be taken to ensure zero ground clearance. Care should be taken to minimize visibility of the pen by the public. A biologist, monitor, or designated worker should check the pen daily. All instances of penning or issues associated with penning should be reported to the Service within three days.

Tortoises shall be deliberately moved solely for the purpose of moving them out of harm's way. Desert tortoises shall not be placed on land not under the ownership of BLM without written permission of the landowner. All road repair crews shall be accompanied by BLM personnel or their designee to ensure that no tortoises or tortoise burrows are harmed during repair operations.

RPM 5: BLM shall implement measures to minimize the incidental take of desert tortoises that may result from **fire management**.

Terms and Conditions:

5.a. BLM shall implement measures in the RMP/Final EIS, and measures proposed for Fire Management (**FM**) unless modified below or at the project-level consultation.

5.b. Within desert tortoise habitat, full suppression activities shall be initiated using appropriate techniques/tools (engines, equipment off road, burning out, etc.) with the minimum necessary surface disturbances to limit the size of a wildland fire, reduce loss of tortoise cover and minimize the spread of exotic annual grasses, in accordance with Duck *et al*. 1995.

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RPM 6: BLM shall implement measures to minimize the incidental take of desert tortoises resulting from **attraction of potential tortoise predators** to the actions area.

Terms and Conditions:

6.a. BLM shall implement a litter-control program as described in Term and Condition 2.e. and require inspections of towers for nesting ravens as described in Term and Condition 3.k.

Desert Tortoise, Big Spring Spinedace, Southwestern Willow Flycatcher, and Pahrump Poolfish

RPM 7: BLM shall implement measures to minimize the incidental take of desert tortoise, Big Spring spinedace, Pahrump poolfish, and southwestern willow flycatcher that may result from permitting of **livestock grazing**.

Desert tortoise

7.a. Livestock grazing may continue in desert tortoise habitat under the previous conditions established under the Caliente MFP Amendment until such time the term permits 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 permits. 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 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.

7.b. 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/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.

Desert tortoise, Big Spring spinedace, Pahrump poolfish, Southwestern willow flycatcher

7.c. When BLM proposes to issue a term permit or other type of grazing authorization, BLM shall provide the following to the Service 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 Service that is necessary to conclude activity-level consultation.

7.d. 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 permits for those allotments that overlap with habitat for the listed species.

7.e. 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.

7.f. 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.

7.g. 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 0.5 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 0.5 mile from riparian areas.

7.h. 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.

7.i. 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.

White River Springfish

RPM 8: BLM shall implement measures to minimize the incidental take of White River springfish that may result from **soil disturbing activities**.

8.a. BLM shall implement measures in the RMP/Final EIS, proposed for Special Status Species (**SS**), Lands and Realty (**LR**), Renewable Energy (**RE**), and Geology and Mineral Extraction (**MIN**) unless modified below or at the project-level consultation.

8.b. BLM shall implement BMPs or SOPs that will stabilize soils and minimize sediment input to the pond from soil-disturbing construction activities.

8.c. All fuel, transmission or brake fluid leaks, or other hazardous materials shall not be drained onto the ground or into streams or drainage areas. All petroleum products and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials. Waste leaks, spills or releases will be reported immediately to BLM. BLM or the project proponent shall be responsible for spill material removal and disposal to an approved off-site landfill. Servicing of construction equipment will take place only at a designated area. All fuel or hazardous waste leaks, spills, or releases will be stopped or repaired immediately and cleaned up at the time of occurrence. Service and maintenance vehicles will carry a bucket and pads to absorb leaks or spills.

8.d. BLM shall avoid conducting soil-disturbing activities during the peak springfish spawning period (in general, April 1 through May 31).

RPM 9: BLM shall implement measures to minimize the incidental take of White River springfish that may result from **recreational use** of Ash Springs.

9.a. BLM shall develop public educational materials to provide to casual users of Ash Springs that describes the importance of the area to White River springfish and ways in which the public can minimize their impact on the springfish and its habitat.

9.b. BLM shall incorporate actions into management plans to restrict use or otherwise minimize impacts along pool banks.

Southwestern Willow Flycatcher

RPM 10: BLM shall implement measures to minimize the incidental take of southwestern willow flycatcher that may result from **vegetation management, weed removal projects, and habitat-disturbing activities**.

10.a. BLM shall implement measures in the RMP/Final EIS, proposed for Special Status Species (**SS**), Lands and Realty (**LR**), Renewable Energy (**RE**), and Geology and Mineral Extraction (**MIN**) unless modified below or at the project-level consultation.

10.b. BLM shall avoid the removal of salt cedar in areas considered flycatcher habitat during the flycatcher breeding season.

10.c. BLM shall ensure that salt cedar removed from suitable or potentially suitable flycatcher habitat is replaced with appropriate native riparian vegetation to assure no net loss of habitat. If soil and hydrological conditions are conducive to survival of native species, riparian vegetation restoration efforts, if determined appropriate, shall commence no later than one year after removal of salt cedar.

10.d. BLM and Service will cooperatively develop a riparian vegetation monitoring program to determine the overall habitat condition including success of restoration efforts. The program will incorporate monitoring into the Lower Meadow Valley Wash ACEC management plan.

10.e. BLM or an authorized contractor shall conduct southwestern willow flycatcher surveys in suitable habitat. Where restoration projects have been conducted surveys would be initiated once the vegetation has reached a mid-to-late seral stage of development (approximately 3 to 5 years after project completion). Surveys must be conducted by a biologist using Service-approved flycatcher survey protocol (Sogge *et al*. 1997, Service *in litt.* 2000). Conducting presence/absence surveys for flycatchers requires obtaining a section 10(a)(1)(A) recovery permit from the Service.

10.f. If possible, overnight parking and storage of equipment and materials, including stockpiling, shall occur in previously disturbed areas. If not possible, areas for overnight parking and storage of equipment shall be designated by a BLM authorized officer in consultation with the Service.

10.g. All vehicular traffic shall be restricted to existing access roads, or those roads approved by BLM authorized officer in consultation with the Service.

10.h. Project activity areas shall be clearly marked or flagged at the outer boundaries before the onset of construction. All activities will be confined to designated areas. Disturbance of riparian vegetation will occur only to the extent necessary and will be limited to areas designated for that purpose by a BLM authorized officer in consultation with the Service.

RPM 11: BLM shall implement measures to minimize the incidental take of southwestern willow flycatcher and disturbance of habitat that may result from **travel, OHV, and recreation management**.

11.a. BLM shall implement measures in the RMP/Final EIS, proposed for Travel Management and OHV Use (**TM**) and Recreation Management (**REC**) unless modified below or at the project-level consultation.

11.b. BLM shall reroute SRP events on those portions of routes that pass through suitable southwestern willow flycatcher habitat.

11.c. BLM shall not construct new roads in the Lower Meadow Valley Wash ACEC.

11.d. BLM shall develop public educational materials to provide to casual users that explains the importance of riparian areas to the flycatcher and other wildlife. These materials will describe ways in which the public can avoid disturbance of riparian vegetation and soils, and promote good stewardship of watersheds in the planning area.

RPM 12: BLM shall implement measures to minimize the incidental take of southwestern willow flycatcher that may result from **minerals extraction**.

12.a. BLM shall avoid permitting mineral materials extraction in riparian areas within the Lower Meadow Valley Wash ACEC.

12.b. If the construction of ancillary structures related to mining operations, or other actions associated with minerals extraction results in the disturbance of southwestern willow flycatcher habitat, BLM shall implement the terms and conditions listed under RPM 10 for actions associated with vegetation management, weed removal projects, and other habitat-disturbing activities.

RPM 13: BLM shall implement measures to minimize the incidental take of southwestern willow flycatcher that may result from **fire suppression activities**.

13.a. All firefighters and support personnel shall be briefed on the potential presence of southwestern willow flycatcher in areas along the Meadow Valley Wash that support suitable or potentially suitable flycatcher habitat.

13.b. Within flycatcher habitat, full suppression activities shall be initiated using appropriate techniques/tools (engines, equipment off road, burning out, etc.) with the minimum necessary surface disturbances to limit the size of a wildland fire, reduce loss of riparian vegetation, and minimize the spread of non-native plants.

13.c. Fire suppression actions in riparian areas shall be prioritized where feasible to minimize damage to stands of native vegetation from wildfire or suppression operations. To the extent possible, large, downed woody debris and snags that are not a hazard to firefighters should be retained.

13.e. An authorized resource advisor shall be assigned to each wildland fire to provide relevant information on the occurrence of southwestern willow flycatcher nesting sites and important habitat to the incident commander. The resource advisor serves as the field contact representative responsible for coordination with the Service.

13.f. In riparian areas, natural barriers or openings in riparian vegetation shall be used where possible as the easiest, safest method to manage a riparian wildfire. Where possible and practical, wet firebreaks in sandy overflow channels shall be used rather than constructing firelines by hand or with heavy equipment.

13.g. Fire camps, staging areas, and helispots shall be established in previously disturbed areas outside of riparian areas or river/stream corridors, where possible, and in consultation with a qualified resource advisor. Prior to use of any area during the flycatcher breeding season, a resource advisor will be allowed to survey 100 percent of the area. If flycatchers are detected or suitable habitat is found, the area will be adjusted, if possible, to avoid flycatchers or habitat.

13.h. Use of chainsaws or bulldozers to construct firelines through occupied or suitable habitat shall be minimized except where necessary to reduce the overall acreage of occupied habitat or other important habitat areas that would otherwise be burned.

13.i. Development of access roads that would result in fragmentation or a reduction in habitat quality shall be avoided. All roads that were necessary for project implementation shall be closed and rehabilitated.

13.j. Off-road travel and use of tracked vehicles shall be restricted to the minimum necessary to suppress wildland fires. All vehicles will be parked as close to the road as possible using disturbed areas or wide spots in the road to turn around. All tracks will be obliterated immediately following fire suppression activities, to the extent possible.

13.k. Fire lines and disturbances associated with fire suppression activities shall be rehabilitated, where appropriate. Native plant species should be used in rehabilitation efforts on a site-specific basis dependent on the probability of successful establishment. Native plant species known to occur in the riparian corridor along the Meadow Valley Wash should be used.

Big Spring spinedace and Pahrump poolfish

14. **RPM:** BLM shall implement measures to minimize the incidental take of Big Spring spinedace and Pahrump poolfish that may result from **restoration or habitat enhancement activities, or other recovery actions under the Special Status Species program**.

14.a. If translocation, salvage, or other handling of fish is necessary to accomplish restoration, habitat enhancement, or other recovery actions, BLM shall use appropriate fish handling procedures developed with assistance from the Service and NDOW.

Big Spring spinedace and White River springfish

15. **RPM:** BLM shall implement measures to minimize the incidental take of Big Spring spinedace and White River springfish that may result from **weed removal projects**.

15.a. BLM shall implement measures in the RMP/Final EIS, proposed for Special Status Species (**SS**), Lands and Realty (**LR**), Renewable Energy (**RE**), and Geology and Mineral Extraction (**MIN**) unless modified below or at the project-level consultation.

15.b. BLM shall ensure that methods used for weed removal projects and measures to minimize potential effects to aquatic species and their environment are consistent with the standard operating procedures and mitigation measures described in the Final Programmatic EIS for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007c), and the best management practices described in the RMP/Final EIS and appendices (BLM 2007b). These methods will be determined during project-specific consultation and appended to the programmatic biological opinion as terms and conditions, at which time take will be exempted.

15.c. BLM shall replace salt cedar removed during weed control projects with appropriate native vegetation as determined during project-specific consultation to ensure no net loss of habitat.

15.d. BLM shall instruct all work crew members to avoid stepping, standing, or walking in the streambed during weed removal activities.

15.e. BLM shall avoid conducting weed removal activities during the peak spawning period (in general, April 1 through May 31).

Big Spring spinedace, White River springfish, and Pahrump poolfish

16. **RPM:** BLM shall implement measures to minimize the incidental take of the Big Spring spinedace, White River springfish, and Pahrump poolfish that may result from **fire management activities**.

16.a. Alternative water sources shall be identified, where available and feasible, for use during fire management activities to avoid the need to draft water from habitats for Big Spring spinedace, White River springfish, and Pahrump poolfish.

16.b. The application of fire retardant or foam within 300 feet of a stream channel or waterway shall be avoided, when possible, except for the protection of life and property. If the use of fire retardant or foam within 300 feet of a stream channel or waterway is determined necessary for the protection of life and property, the Service shall be notified immediately to determine if contingency actions are necessary to protect listed species.

16.c. When using water from sources supporting federally protected species, care shall be taken to ensure adverse impacts to these species are minimized or prevented. Unused water from fire abatement activities will not be dumped in sites occupied by federally protected aquatic species to avoid introducing nonnative species, diseases, or parasites.

16.d. If water is drafted from a stock tank or other body of water for fire suppression, it shall not be refilled with water from another tank, lakes, or other water sources that may support nonnative fishes, bullfrogs, crayfish, or salamanders.

16.e. A containment barrier shall be constructed around all pumps and fuel containers utilized within 100 feet of the stream channel or edge of pond to prevent petroleum products from entering the stream or pond. The containment barrier will be of sufficient size to contain all fuel being stored or used on site.

16.f. Retardant shall not be mixed within 300 feet of the stream channel, spring source, impoundment ponds, outflow channel, or marsh/wetland areas.

16.g. Stream or spring flow shall not be impounded or diverted by mechanical or other means to facilitate extraction of water from the stream or pond for fire suppression efforts.

16.h. The intake end of the draft hose shall be screened to prevent entry of fish species. Screen opening size will be a maximum of 3/16 inch.

16.i. Before each fire assignment in the Ely District, all fire suppression equipment utilized to extract water from stream or spring sources (*i.e*., helicopter buckets, draft hoses, and screens) shall be thoroughly rinsed to remove mud and debris and disinfected with a chlorine solution (one part bleach to 32 parts water, or stronger). Rinsing equipment with disinfectant solutions will not occur within 100 feet of natural water sources (springs or streams).

16.j. An assessment of the impacts of fire suppression activities to listed fishes habitats shall be completed by an interdisciplinary team of resource specialists from BLM's Ely District or Caliente Field Offices, representatives from the Service, and representatives from NDOW. Based on the assessment, appropriate rehabilitation measures will be identified consistent with Departmental Emergency Stabilization and Rehabilitation Handbook guidance. Specific measures will be identified during project-specific consultation and appended to the programmatic biological opinion.

E. Closing Paragraph

Desert tortoise

The Service believes that no more than 47 desert tortoises will be incidentally killed or injured over the 10-year period of this consultation as a result of proposed activities. The effects of livestock grazing involve mostly indirect effects through habitat modification over time. In addition, 972 desert tortoises may be taken by non-lethal means as a result of lands and realty actions, recreation, and geology and mineral extraction activities; and an unknown number of desert tortoises may be taken by non-lethal means as a result the remaining activities for which we have no estimate. Although we have no estimate for certain programs, we determined that these tortoises, though taken by non-lethal means, will remain in the wild and serve their role for recovery; the effects to these animals will be minimal and short-term. In addition, the Service estimated that over the 10-year term of this biological opinion, two tortoise nests with eggs per year may be excavated and relocated, or incidentally destroyed if not found during clearance surveys.

Big Spring spinedace, White River springfish, and Pahrump poolfish

The Service believes that incidental take of the Big Spring spinedace, White River springfish, and Pahrump poolfish is expected to be primarily in the form of harm or harassment. Take may result from implementation of activities under BLM's Weed Management; Special Status Species; Travel, OHV, and Recreation; Livestock Grazing, and Fire Management programs. Harm may result from activities that modify, damage, or destroy habitat for the fishes. Harassment of adults or lethal take of eggs and larvae may result from people or livestock

trampling in the stream, or from water drafting for wildland fire efforts. Harassment and mortality may also result from fish handling if translocation, salvage, or other forms of capture are necessary during restoration, habitat enhancement, or other recovery activities. Take of individual fish cannot be quantified; therefore, we assume incidental take of the Big Spring spinedace, White River springfish, and Pahrump poolfish to be exceeded if BLM fails to adhere to their conservation measures and the terms and conditions of this opinion, or population declines are demonstrated through ongoing monitoring efforts.

Southwestern willow flycatcher

Overall, the Service estimates that not more than one nesting pair every 5 years will be incidentally taken in the form of harassment or harm over the next 10 years. However, since it is difficult to detect and quantify take of flycatcher, acres of habitat disturbance is used as a surrogate for estimating take for all programs except Livestock Grazing. The Service believes that incidental take of the southwestern willow flycatcher in the form of harassment or harm may occur as a result of the temporary loss of (1) up to 400 acres of habitat from vegetation and weed management activities, (2) up to 40 acres of habitat from authorization of rights-of-way, (3) up to 89 acres of habitat from OHV and recreation management activities, (4) up to 30 acres of habitat from mineral extraction activities, and (5) up to 50 acres of habitat from fire management activities. An unknown acreage of habitat may be disturbed from livestock grazing. We assume incidental take of southwestern willow flycatcher to be exceeded if (a) disturbance of suitable or potentially suitable flycatcher habitat exceeds the acreage of disturbance for each program listed above, or BLM fails to adhere to the conservation measures and terms and conditions of this opinion to minimize adverse effects to the flycatcher from livestock grazing.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed actions. If, during the course of the actions, this level of incidental take is reached and anticipated to be exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. BLM must immediately provide an explanation of the causes of the taking, and review with the Service the need for possible modifications of the reasonable and prudent measures.

F. Reporting Requirements

Upon locating a dead or injured endangered or threatened species, initial notification must be made to the Service's Nevada Fish and Wildlife Office in Las Vegas, Nevada, at (702) 515-5230. Care should be taken in handling sick or injured animals to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death.

1. Desert Tortoise

In conjunction with the care of sick or injured desert tortoises or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by the Service to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Injured desert tortoises shall be delivered to any qualified veterinarian for appropriate treatment or disposal. Dead desert tortoises suitable for preparation as museum specimens shall be frozen immediately and provided to an institution holding appropriate Federal and State permits per their instructions. Should no institutions want the desert tortoise specimens, or if it is determined that they are too damaged (crushed, spoiled, etc.) for preparation as a museum specimen, then they may be buried away from the project area or cremated, upon authorization by the Service. BLM shall bear the cost of any required treatment of injured desert tortoises, euthanasia of sick desert tortoises, or cremation of dead desert tortoises. Should sick or injured desert tortoises be treated by a veterinarian and survive, they may be transferred as directed by the Service.

2. Fish

Dead fish suitable for preparation as museum specimens shall be frozen immediately and provided to the Nevada Fish and Wildlife Office in Las Vegas, Nevada.

3. Southwestern Willow Flycatcher

Refer to general instructions above if sick, injured, or dead flycatchers are located.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service hereby makes the following conservation recommendations:

1. We recommend that BLM coordinate with the Service to develop measures to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.

2. We recommend that BLM fully implement Recovery Plans for the desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, and southwestern willow flycatcher and subsequent revisions of these plans within their authority.
3. We recommend that BLM coordinate with other BLM offices in Nevada, Utah, Arizona, and California; and other land management agencies in the northeastern Mojave recovery

unit in the development of regional planning efforts to implement the Desert Tortoise Recovery Plan, and in the integration of those plans with the Ely RMP.

4. We recommend that BLM coordinate with NDOW and the Service to develop and implement scientific investigations that would evaluate Condor Canyon and neighboring properties to determine environmental factors that may be managed to enhance Big Spring spinedace populations.

5. We recommend that BLM coordinate with NDOW and the Service to establish consistent and frequent surveys for the White River springfish at Ash Springs.

6. We recommend that BLM coordinate with NDOW and the Service to install water monitoring equipment at Shoshone Ponds that will allow water quality data collection with minimal disturbance to the Pahrump poolfish.

7. We recommend that BLM identify completion of road designations in tortoise and flycatcher habitat as the highest priority action under the Travel Management Plan.

8. We recommend that any grazing allotment in desert tortoise habitat that becomes vacant should be closed in perpetuity.

9. We recommend that BLM coordinate and partner with other local, State, and Federal agencies as well as private groups to sponsor and/or assist with public education regarding conservation of desert tortoise, Big Spring spinedace, White River springfish, Pahrump poolfish, and southwestern willow flycatcher to enhance public support for conservation activities. Target groups for education and outreach may include OHV groups, hunting groups, home owner associations, scout troops, public schools, libraries, and other audiences and venues associated with land use and/or educational programming.

In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION REQUIREMENT

This concludes formal consultation on the actions outlined in your October 22, 2007, request. As required by 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over an action has been retained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the

action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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APPENDIX A. REQUEST TO APPEND AN ACTION TO THE PROGRAMMATIC BIOLOGICAL OPINION (FILE NO. 84320-2008-F-0078)

Name of Action: Date:

Requested by:
Title:
Agency/Office
Phone No.

Species Affected:

Critical Habitat Affected: Yes ____ No ____

I. Description of Action and Action Area (include map)

A. Habitat quality/suitability:

B. Surveys or assessments conducted:

II. Measures Proposed to Minimize the Effects of the Proposed Action

A. Recommendations for future programmatic actions:

III. Effects of Proposed Action on the Listed Species

A. No. of acres and plant communities disturbed:

B. Description of affected individuals of listed species:

C. Assessment of habitat rehabilitation recommended:

D. Are there additional effects of the action not considered in the programmatic biological opinion? If so, describe.

APPENDIX B. IMPORTANT FORAGE AND SHELTER PLANTS FOR THE DESERT TORTOISE.

Grasses	
Six-weeks three-awn	*Aristida adscensionis*
Gramma grass	*Bouteloua* sp.
Fluffgrass	*Erioneuron pulchellum*
Big galleta grass	*Hilaria rigida*
Bush muhly	*Muhlenbergia porteri*
Indian rice grass	*Oryzopsis hymenoides*
Sand dropseed	*Sporobolis cryptandrus*
Desert needle grass	*Stipa speciosa*
Six-weeks fescue	*Vulpia octoflora*
Shrubs	
White bursage	*Ambrosia dumosa*
Blackbrush	*Coleogyne ramosissima*
California buckwheat	*Eriogonum fasciculatum*
Mormon tea	*Ephedra* sp.
Spiny hopsage	*Grayia spinosa*
Little-leaf ratany	*Krameria parvifolia*
Creosote bush	*Larrea tridentata*
Forbs	
Windmills	*Allionia incarnate*
Two-seeded milkvetch	*Astragalus didymocarpus*
Layne's milkvetch	*Astragalus layneae*
Woolly bottlebrush	*Camissonia boothii*
Desert pincushion	*Chaenactis fremontii*
Nievitas	*Cryptantha* sp.
Rattlesnake weed	*Euphorbia albomarginata*
Sandmat	*Euphorbia micromera*
Deer vetch	*Lotus strigosus*
Desert dandelion	*Malacothrix glabrata*
Combbur	*Pectocarya recurvata*
Plantain	*Plantago* sp.
Desert globemallow	*Sphaeralcea ambigua*

APPENDIX C. LINCOLN COUNTY SECTION 7 FEE PAYMENT FORM

Entire form is to be completed by project proponent

Biological Opinion File Number: 84320-2008-F-0078

Biological Opinion issued by: Nevada Fish and Wildlife Office, Reno, Nevada

Species: Desert tortoise (*Gopherus agassizii*)

Project: _____

Number of acres anticipated to be disturbed: _____

Fee rate (per acre): _____

Total payment required: _____

Amount of payment received: _____

Date of receipt: _____

Check or money order number: _____

Project proponent: _____

Telephone number: _____

Authorizing agencies: Bureau of Land Management

Make checks payable to:

Deliver check to:

If you have questions, contact the Nevada Fish and Wildlife Office in Las Vegas at (702) 515-5230.

APPENDIX D. GENERAL DESERT TORTOISE QUALIFICATIONS STATEMENT

This form should be used to provide your qualifications to agency officials if you wish to undertake the duties of an authorized biologist with regard to desert tortoises during construction or other projects authorized under Sections 7 (Biological Opinions) or 10(a)(1)(B) (i.e. Habitat Conservation Plans) of the Endangered Species Act.

(If you seek approval to attach/remove/insert any devices or equipment to/into desert tortoises, withdraw blood, or conduct other procedures on desert tortoises, a recovery permit or similar authorization may be required. Application for a recovery permit requires completion of Form 3-200-55, which can be downloaded at http://www.fws.gov/forms/3-200-55.pdf.)

1. Contact Information:

Name	
Address	
City, State, Zip Code	
Phone Number(s)	
Email Address	

2. Date:

3. Areas in which authorization is requested (check all that apply):

□ San Bernardino, Kern, and Los Angeles Counties, California (Ventura office)
□ Riverside and Imperial Counties, California (Carlsbad office)
□ Nevada □ Utah □ Arizona

4. Please provide information on the project:

USFWS Biological Opinion or HCP No.		**Date:**
Project Name		
Federal Agency		
Proponent or Contractor		

5. If you hold, or have held, any relevant state or federal wildlife permits provide the following:

Species	Dates	State (specify) or Federal Permit Number	Authorized Activities

6. Education: Provide up to three schools, listing most recent first:

Institution	Dates attended	Major/Minor	Degree received

7. Desert Tortoise Training.

Name/Type of Training	Dates (From/To)	Location	Instructor/Sponsor
1. Classes			
2. Field Training			
3. Translocation			
4.			

8. Experience – Include only those positions relevant to the requested work with desert tortoises. Distinguish between Mojave desert tortoise and other experience. Include only your experience, not information for the project you worked on (e.g., if 100 tortoises were handled on a project and you handled 5 of those tortoises, include only those 5. List most recent experience first. Handling a Mojave desert tortoise must be authorized by a Biological Opinion or other permit and reported to the USFWS. Information proved in this section will be used by the USFWS to track the numbers of tortoises affected by previous projects (baseline). **Be sure to include a project supervisor or other contact that can verify your skills and experience in relation to your job performance.** Attach additional sheets as necessary.

Experience by project and activity:

Project Name, Job Title, Dates	Project Contact name, phone no., & Email address		Conduct Clearance Surveys (Hrs/Days)	Excavate DT burrows (No.)	Locate DT No. < 100mm ≥ 100mm	Relocate DTs (No.)	Excavate, and relocate DT nests (No.)
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Experience by project and activity (continued): Each project number should correspond with the project listed on the previous page

Project Number (Corresponds to previous page)		**Construct Artificial Burrows (No.)**	**Monitor project equipment and activities (Hrs/Days)**	**Oversee project compliance (Hrs/Days)**	**Supervise field staff (Hrs/Days)**	**DT fence Installation and inspection (Hrs/Days)**	**Present DT Awareness Training (No.)**
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Summary of experience:

Total time spent for all desert tortoise-related field activities (referenced above):
Specify total number of hours:
OR total number of 8-hour days: _____

Total number of miles/kilometers walked conducting survey transects:

Total number of wild, free-ranging desert tortoises you personally handled:

<100 mm: _____

≥100 mm: _____

I certify that the information submitted in this form is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. Ch.47, Sec. 1001.

Signed: _____Date:_____

ATTACHMENT 2.

PROGRAMMATIC INFORMAL CONSULTATION (FILE NO. 84320-2008-I-0079)

BLM requests concurrence from the Service that implementation of eight programs *may affect, but is not likely to adversely affect* listed species as indicated with an (**X**) in Table 1. A description of BLM's proposed action can be found in the programmatic biological opinion (Attachment 1).

Table 1 Effect Determinations for Listed Species by Program

PROGRAMS	**Desert Tortoise**	**Big Spring Spinedace**	**White River Springfish**	**Pahrump Poolfish**	**SW Willow Flycatcher**
Vegetation Management		**X**		**X**	
Weed Management				**X**	
Wild Horse Management	**X**				**X**
Lands, Realty, and Renewable Energy			**X**		
Travel and OHV Management		**X**		**X**	
Recreation				**X**	
Geology and Mineral Extraction		**X**			

The Service reviewed BLM's request including minimization measures and concurs with their determinations of effect for the programs and species identified above in Table 1.

Justification for Concurrence

1. Vegetation and Weed Management

Big Spring Spinedace and Pahrump Poolfish

Refer to the biological opinion for a description of effects to the Big Spring spinedace from weed management activities. Vegetation management activities in Condor Canyon would focus on improving vegetation in the upland areas adjacent to the stream. No vegetation or weed treatments are planned for the area immediately adjacent to Shoshone Ponds. Therefore, effects to the Big Spring spinedace and Pahrump poolfish are anticipated to be negligible in the short term and beneficial in the long term.

2. Wild Horse Management

a. Desert Tortoise:

All herd management areas (HMAs) occur outside the range of the desert tortoise in the planning area. Wild horses will remain within two HMAs that will be eliminated in the RMP/Final EIS that overlap approximately 74,550 acres of desert tortoise habitat. BLM may conduct emergency gathers and implement measures to minimize the potential effects of the gathers on the desert tortoise. These measures include: trap sites will be located/in areas that will not impact tortoises or their habitat; holding facilities will not be located within ACECs and preferably outside tortoise habitat; vehicle use will be restricted to existing roads and 25 miles per hour; trash will be contained and removed; hay or grains will not be used for trap enticements in tortoise habitat, nor used for feed in ACECs; and discharge of firearms will be restricted.

b. Southwestern Willow Flycatcher

All horses will be removed from HMAs that overlap with southwestern willow flycatcher habitat along the Meadow Valley Wash and Clover Creek. Wild horses will be removed from the Applewhite, Blue Nose Peak, Clover Creek, Clover Mountains, Delamar Mountains, Little Mountain, Meadow Valley Mountains, and Miller Flat HMAs. Removal of wild horses from these HMAs should result in reduction of erosion, habitat degradation, and spread of noxious and invasive weeds.

3. Lands, Realty, and Renewable Energy

White River Springfish

The disposal of Federal land in Pahranagat Valley for urban growth may promote the development of water resources in the valley to support expansion of new communities, which may affect the White River springfish if water development results in depletion of spring flows at Ash Springs. The source of the water that may be required for future land development within the planning area is unknown at this time, and there is not adequate information available to determine effects of future water development on listed species. Applications for new water rights, or changes to existing rights would be required to obtain additional water. As water sources are identified through the State Engineer's permitting process, potential effects to White River springfish must be considered, and if necessary, addressed either under section 7 or section 10 of the Act, as appropriate.

4. Travel/OHV Management/Recreation

Big Spring Spinedace and Pahrump Poolfish

BLM will restrict vehicular travel to existing roads and trails until the road designation process is completed. At that time, all vehicular travel will be restricted to roads and trails designated as open or limited use. Cross country travel will no longer be allowed,

and no OHV events occur close to occupied habitat; therefore, the chance that vehicular travel would result in an adverse affect to these species is unlikely. Casual recreational activities such as camping may occur in the vicinity of occupied habitat, but the likelihood that these activities will adversely affect the species is remote.

5. Geology and Mineral Extraction

Big Spring Spinedace

The Condor Canyon ACEC is closed to locatable minerals and mineral materials development; therefore, effects from these activities are not expected to occur. Condor Canyon is located within an area of high potential oil and gas development, and any future minerals development would be implemented only under certain conditions that would protect Big Spring spinedace and its designated critical habitat. Although Condor Canyon is considered a high potential oil and gas development area, management prescriptions for the ACEC allow no surface occupancy from this activity, and BLM anticipates that development of oil and gas resources in this area is unlikely.

Conclusion: This response constitutes programmatic informal consultation. When a specific action is proposed that may affect but is not likely to adversely affect a listed species, BLM should complete the second phase of informal consultation by completing the attached form (Appendix A) and submitting it to the Service for concurrence at the action level. This informal consultation does not authorize any take of any listed species.

APPENDIX A (TO ATTACHMENT 2). **INFORMAL CONSULTATION FORM**

(Pages 1-3 to be completed by BLM)

Date: _____

Service File No.: _____ **Agency/Case Project No.:** _____

Species: _____

Project Name: _____

County/State: _____

Jurisdictional land managers: _____

Federal Agency

Name: Bureau of Land Management

Address: _____

City/State/Zip: _____

Contact/Title: _____

Phone/Fax: _____

Project Proponent

Name: _____

Address: _____

City/State/Zip: _____

Contact/Title: _____

Phone/Fax: _____

Service File No.: _____ **Agency/Case Project No.:** _____

Brief Project Description:
(exact location, size, prior site disturbance, starting date, and duration; attach photos of site if available.)

Habitat Description (including surveys conducted and results)**:**

Service File No.: _____ **Agency/Case Project No.:** _____

Minimization Measures:

Additional Comments:

Listed Species: _____

Determination: _____ No effect (for informational purposes only; no Service response required)

_____ Not likely to adversely affect

If determination is *likely to adversely affect*, initiate formal consultation.

Critical Habitat Affected? _____ Yes _____ No

If yes, determination: _____ Not likely to adversely modify

If determination is *likely to adversely modify*, initiate formal consultation.

Signature: _____ _____

(Agency Representative) Date

Title: _____

(This page to be completed by the U.S. Fish and Wildlife Service)

Service File No.: _____ **Agency/Case Project No.:** _____

Service Response:

Based on the information provided, the agency has determined that the action, as proposed and analyzed, *is not likely to adversely affect* listed species. The U.S. Fish and Wildlife Service

_____ concurs _____ does not concur (see suggested alternatives) with this determination.

Justification for Response:

Suggested Alternatives:

Conclusion:

Signature: _____ _____

Robert D. Williams, Field Supervisor Date
Nevada Fish and Wildlife Office

ATTACHMENT 3.
TECHNICAL ASSISTANCE (FILE NO. 84320-2008-TA-0080)

Introduction

BLM has requested technical assistance from the Service for the following non-listed species of concern. These species were chosen based on factors such as listing history and status, rarity, population trends, and imminence of threats. Some management actions BLM has proposed to implement as part of their Proposed Action will benefit these species. Those actions are identified under the sub-heading "*BLM Proposed Management Actions*". As part of the technical assistance, the Service is providing management recommendations in addition to BLM's proposed management actions to address potential effects to the species and contribute to BLM's proposed conservation efforts. Implementation of the following management recommendations by the action agency is discretionary, but can assist in conserving the species, thus avoiding the need to list the species in the future.

1. Western burrowing owl (*Athene cunicularia hypugaea*)

Species Description

The western burrowing owl is a small ground-dwelling owl with a total length of about 8 to 10 inches and a wing span of about 21 inches. The legs are long and sparsely feathered and the head is round and lacks eartufts. Adults have a distinct facial ruff, framed by buffy-white eyebrow-to-mallar stripe on the interior part and a white throat. Back and crown are brown with white spots and the underparts are buffy-white with broad brown stripes. Juveniles largely lack adult white spots on back and crown, and the belly is an unmarked buffy color without stripes.

Species Range

Burrowing owl range covers much of the western United States, extending from the Great Plains in the east to the California Coast in the west. North to south, the range extends from southern Canada into Central and South America (Haug *et al.* 1993). Additional populations occur in Florida and the Caribbean.

Habitat

Burrowing owls prefer open, arid, treeless landscapes with low vegetation. The species is found throughout the Great Basin and Mojave landscapes as well as in and around golf courses, cemeteries, road allowances, vacant lots, airports, and other similar habitats associated with urban environments (Haug *et al.* 1993, Floyd *et al.* 2007). Species occurrence is strongly associated with presence of fossorial mammals.

Distribution in the Planning Area

Burrowing owls occur throughout the planning area in appropriate lower-elevation, basin habitats, although densities should be anticipated to be low (Floyd *et al.* 2007). Occurrence likely restricted to spring and summer breeding months, however, potential exists for year-round residence in southern Lincoln County. Data on winter occurrences are limited.

Reasons for Concern

From 1994 to1996, the western burrowing owl was designated by the Service as a Category 2 Candidate species under the Endangered Species Act. In 1996 the Category 2 designation was discontinued. The burrowing owl is currently federally protected by the Migratory Bird Treaty Act. The burrowing owl is listed by the Service as a National Bird of Conservation Concern and as a Bird of Conservation Concern in Regions 1 (Pacific Region, mainland only), 2 (Southwest Region), and 6 (Mountain-Prairie Region) (Klute *et al*. 2003). Additionally, the species is recognized as a species of concern or sensitive species by various Federal, State, and nongovernmental organizations. Apparent cause for concern stems from suggested population declines including documented peripheral range contractions in several large regions, notable in the northeast Great Plains and Canada. However, estimates of population trends in many regions are generally inconclusive due to limited sample sizes and high degree of data variability. Primary threats across the North American range of the species are habitat loss due to land conversions for agricultural and urban development, and habitat degradation and loss due to reductions of burrowing mammal populations. The elimination of burrowing mammals through control programs and habitat loss has been identified as the primary factors responsible for declines of burrowing owls. Additional threats to burrowing owls include habitat fragmentation, predation, illegal shooting, indirect effects of disease, collision with stationary and moving objects, pesticides, and other contaminants.

BLM Proposed Management Actions That May Benefit the Species

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

VEG-4: Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid scale (watershed level).

SS-2: Develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-34: Identify the spatial and temporal habitat needs for the western burrowing owl to help achieve the desired range of conditions of the various vegetation communities.

SS-35: Work with the Service, NDOW, and other partners (*e.g.*, Great Basin Bird Observatory, Partners in Flight) to conduct breeding bird surveys to document the population status and trends of western burrowing owls.

MIN-3: Open to leasing, subject to moderate constraints – Protect resources beyond the standard lease terms and conditions by requiring timing and controlled surface use restrictions.

Raptors – Raptors (*i.e.*, hawks, eagles, owls, etc.) are protected under numerous laws including the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Endangered Species Act of 1973. Timing limitations are required to protect raptor nesting activities.

MIN-4: Stipulation Maintenance – Regularly maintain wildlife databases of species subject to the above MIN-3 stipulations to reflect current inventory status. For example an updated greater sage-grouse lek inventory may show the location of a new lek for which the lease stipulation will be applied in subsequent lease sales.

Additional Management Recommendations

1. Review and follow conservation recommendations included in: Klute, D. S., L. W. Ayers, M. T. Green, W. H. Howe, S. L. Jones, J. A. Shaffer, S. R. Sheffield, and T. S. Zimmerman. 2003. Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States. U.S. Department of Interior, Fish and Wildlife Service, Biological Technical Publication FWS/BTP-R6001-2003, Washington, D.C.

2. Review and incorporate into management programs, the use of the survey protocol and mitigation guidelines available at http://www2.ucsc.edu/scpbrg/section1.htm.

3. Conserve burrowing mammal and reptile species that form burrowing owl nest sites, which is essential for maintaining burrowing owl populations.

4. Use applicable information and results from the Rangeland Standards & Guidelines to assist with special status species habitat assessments and to make recommendations for habitat protection and enhancements when necessary.

5. Share data and planning accomplishments with the Service to enhance the species baseline information.

References

Floyd, T., C. S. Elphick, G. Chisholm, K. Mack, R. G. Elston, E. M. Ammon, and J. D. Boone. 2007. Atlas of the Breeding Birds of Nevada. University of Nevada Press, Reno, Nevada.

Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing Owl (Speotyto cunicularia). *In The Birds of North America*, Number 61 (A. Poole and F. Gill, Editors). Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union.

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2. Greater sage grouse (*Centrocercus urophasianus*)

Species Description

The greater sage-grouse is the largest North American grouse species. Adult males range in size from 26 to 30 inches and weigh between 3.8 and 6.4 pounds; adult females range in size from 19.7 to 23.6 inches and weigh between 2.2 and 3.9 pounds (Schroeder *et al.* 1999). Males and females have dark grayish-brown body plumage with many small gray and white speckles, fleshy yellow combs over the eyes, long pointed tails, and dark-green toes. Males also have blackish chin and throat feathers, conspicuous phylloplumes (specialized erectile feathers) at the back of the head and neck, and white feathers forming a ruff around the neck and upper belly. During breeding displays, males also exhibit olive-green apteria (fleshy bare patches of skin) on their breasts (Schroeder *et al.* 1999).

Species Range

Prior to settlement of the western United States by European immigrants greater sage-grouse were found in 13 States and 3 Canadian provinces - Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Colorado, Utah, South Dakota, North Dakota, Nebraska, Arizona, British Columbia, Alberta, and Saskatchewan (Schroeder *et al.* 2004). Greater sage-grouse still occur in most of these states and provinces except for Nebraska, British Columbia, and possibly Arizona where they have been extirpated. Sagebrush habitats that potentially supported greater sage-grouse covered approximately 463,509 square miles before the year 1800 (Schroeder *et al.* 2004). Current distribution is estimated at 258,075 square miles or 56 percent of the potential pre-settlement distribution.

Habitat

Sage-grouse depend on a variety of shrub-steppe habitats throughout their life cycle, and are considered obligate users of several species of sagebrush (*e.g.*, Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), mountain big sagebrush (*A. t. vaseyana*), and basin big sagebrush (*A. t. tridentata*) (Connelly *et al.* 2004)). Sage-grouse also use other sagebrush species such as low sagebrush (*A. arbuscula*), black sagebrush (*A. nova*), fringed sagebrush (*A. frigida*) and silver sagebrush (*A. cana*). Thus, sage-grouse distribution is strongly correlated with the distribution of sagebrush habitats (Schroeder *et al.* 2004).

During the spring breeding season, male sage-grouse gather together to perform courtship displays at sites called leks. Areas of bare soil, short-grass steppe, windswept ridges, exposed knolls, or other relatively open sites may serve as leks (Connelly *et al.* 2004). Leks are often surrounded by denser shrub-steppe cover, which is used for escape, thermal and feeding cover. Leks range in size from less than 0.1 acres to over 90 acres and can host from several to hundreds of males (Connelly *et al.* 2004). Males defend individual territories within leks and perform elaborate displays with their specialized plumage and vocalizations to attract females for mating. A relatively small number of dominant males accounts for the majority of breeding on each lek (Schroeder *et al.* 1999).

Sage-grouse typically select nest sites under sagebrush cover, although other shrub or bunchgrass species are sometimes used (Connelly *et al.* 2004). The sagebrush understory of productive nesting areas contains native grasses and forbs, with horizontal and vertical structural diversity that provides an insect prey base, herbaceous forage for pre-laying and nesting hens, and cover for the hen while she is incubating (Schroeder *et al.* 1999, Connelly *et al.* 2000, Connelly *et al.* 2004). Shrub canopy and grass cover provide concealment for sage-grouse nests and young, and are critical for reproductive success. Vegetation characteristics of nest sites, as reported in the scientific literature have been summarized by Connelly *et al.* (2000). Females have been documented to travel more than 12.5 miles to their nest site after mating (Connelly *et al.* 2000), but distances between a nest site and the lek on which breeding occurred is variable (Connelly *et al.* 2004). While earlier studies indicated that most hens nest within 2 miles of a lek, more recent research indicates that many hens actually move much further from leks to nest based on nesting habitat quality (Connelly *et al.* 2004). Research by Wakkinen *et al.* (1992) demonstrated that nest sites are selected independent of lek locations.

Hens rear their broods in the vicinity of the nest site for the first 2 to 3 weeks following hatching (Connelly *et al.* 2004). Forbs and insects are essential nutritional components for chicks (Johnson and Boyce 1990, Connelly *et al.* 2004). Therefore, early brood-rearing habitat must provide adequate cover adjacent to areas rich in forbs and insects to assure chick survival during this period (Connelly *et al.* 2004). Sage-grouse move from sagebrush uplands to more mesic areas during the late brood-rearing period (3 weeks posthatch) in response to summer desiccation of herbaceous vegetation (Connelly *et al.* 2000). Summer use areas can include sagebrush habitats as well as riparian areas, wet meadows and alfalfa fields (Schroeder *et al.* 1999). These areas provide an abundance of forbs and insects for both hens and chicks.

Sage-grouse will use free water although they do not require it since they obtain their water needs from the food they eat. However, natural water bodies and reservoirs can provide mesic areas for succulent forb and insect production, thereby attracting sage-grouse hens with broods (Connelly *et al.* 2004). Broodless hens and cocks will also use more mesic areas in close proximity to sagebrush cover during the late summer (Connelly *et al.* 2004). As vegetation continues to desiccate through the late summer and fall, sage-grouse shift their diet entirely to sagebrush (Schroeder *et al.* 1999). Sage-grouse depend entirely on sagebrush throughout the winter for both food and cover. Sagebrush stand selection is influenced by snow depth (Connelly *et al.* 2000), and, in some areas, topography (Crawford *et al.* 2004). Many populations of sage-grouse migrate between seasonal ranges in response to habitat distribution (Connelly *et al.* 2004). Migration can occur between winter and breeding/summer areas, between breeding,

summer and winter areas, or not at all. Migration distances of up to 100 mi have been recorded; however, average individual movements are generally less than 21 miles (Schroeder *et al.* 1999). Migration distances for female sage-grouse generally are less than for males (Connelly *et al.* 2004). Almost no information is available regarding the distribution and characteristics of migration corridors for sage-grouse (Connelly *et al.* 2004). Sage-grouse dispersal (permanent moves to other areas) is poorly understood and appears to be sporadic.

Distribution in the Planning Area

Sage-grouse may occur throughout the Great Basin portion of the planning area in suitable habitat. The southern extent of sage-grouse distribution occurs in the transition zone between the Great Basin and Mojave Deserts or approximately the latitude of Pioche, Nevada. Distribution including leking sites, summer/brood rearing habitat and winter range is relatively well known within the District.

Reasons for Concern

Rangewide as well as various population segments of greater sage-grouse have been petitioned for listing under the Act numerous times since the late 1990s. Currently, the only population segment listed under the Act occurs in central Washington. The greater sage-grouse is not covered or managed under the provisions of the MBTA. Reasons for concern include loss, degradation, and fragmentation of sagebrush habitats due to both anthropogenic and natural factors including wildfire, conversion, grazing, and infrastructure development. Additional impacts stem from drought, disease, and disturbance. During the Service's 12-month finding to list the greater sage-grouse under the Act (70 FR 2244), a panel of sage-grouse experts were asked to rank potential threats to the species. Acting alone or synergistically, threats identified as most pertinent were: invasive species, infrastructure related to energy development and urbanization, wildfire, agriculture, grazing, energy development, urbanization, weather, and pinyon-juniper expansion. In 2008, the Service initiated a status review of the greater sage-grouse to determine if the species should be protected under the Act. That effort is currently underway.

BLM Proposed Management Actions That May Benefit the Species

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

VEG-4: Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid scale (watershed level).

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

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

VEG-17: Integrate treatments to: Establish and maintain the desired herbaceous state or early shrub state where sagebrush is present along with a robust understory of perennial species.

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

VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat.

SS-2: Develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-10: Mitigate all discretionary permitted activities that result in the loss of special status species habitats on a ratio of 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.

SS-37: Manage greater sage-grouse habitat by implementing those actions and strategies identified in BLM National Sage-Grouse Habitat Conservation Strategy, Greater Sage-Grouse Conservation Plan for Nevada and Eastern California, and local greater sage-grouse conservation plans that the Ely District Office has the authority to implement.

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

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

SS-40: Outside of designated corridors, above-ground facilities will not be constructed within 0.25 mile of greater sage-grouse leks. Underground facilities will not be installed within 0.25 mile of greater sage-grouse leks unless the vegetation can be established to pre-disturbance conditions within a reasonable period of time. No new roads will be constructed within 0.25 mile of greater sage-grouse leks. Exceptions may be granted by the authorized officer, in consultation with NDOW, if the project can be designed so that it will not affect breeding activity nor degrade the integrity of the habitat associated with the lek, or if the lek has been inactive for at least 5 consecutive years or the habitat has changed such that there is no likelihood that the lek will become active.

SS-41: Where appropriate, restrict permitted activities from March 1 through May 15 within 2 miles of an active greater sage-grouse lek.

SS-42: Where appropriate, restrict permitted activities from November 1 through March 31 within greater sage-grouse winter range.

MIN-3: Open to leasing, subject to moderate constraints – Protect resources beyond the standard lease terms and conditions by requiring timing and controlled surface use restrictions.

Greater Sage-grouse – The greater sage-grouse is a Nevada BLM sensitive species and was petitioned for listing under the Endangered Species Act as a threatened or endangered species. Timing limitations are required to protect greater sage-grouse breeding and nesting activities and habitat during the crucial winter period.

MIN-4: Stipulation Maintenance – Regularly maintain wildlife databases of species subject to the above MIN 3 stipulations to reflect current inventory status. For example an updated greater sage-grouse lek inventory may show the location of a new lek for which the lease stipulation will be applied in subsequent lease sales.

MIN-6: Open to leasing, subject to major constraints. The no surface occupancy for greater sage-grouse leks is a 0.25-mile buffer.

Additional Management Recommendations

1. Continue to work with states to implement state and local conservation plans which guide monitoring and threat identification and abatement.

2. Use information and results from Rangeland Standards & Guidelines to assist with special status species habitat assessments and to make recommendations for habitat protection and enhancements when necessary.

3. Share data and planning accomplishments with the Service to enhance the species baseline information.

References

Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation of greater sage-grouse and sagebrush habitats. Western Association Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming. USA.

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3. Yellow-billed cuckoo (Western distinct population segment) (*Coccyzus americanus*)

Species Description

The yellow-billed cuckoo is a medium-sized bird with an average length of 12 inches and weighing about 2 ounces. The cuckoo has a slender tail and a fairly stout and slightly down-curved bill which is blue-black with yellow on the base of the lower mandible. Plumage is grayish-brown above and white below, with rufous primary flight feathers. The tail feathers are boldly patterned with black and white below, giving the appearance of large white spots. The legs are short and bluish-gray, and adults have a narrow, yellow eye ring. Juveniles resemble adults, except the tail patterning is less distinct, and the lower bill may lack yellow coloring.

Species Range

The species ranges throughout North America from southern Canada to the Greater Antilles and northern Mexico. Recently, its range has contracted in the western portion of the United States. Its northern limit along the western coast is now in the Sacramento Valley, California; and the northern limit in the interior west is southern Idaho. Due to its decline in the western United States, the western Distinct Population Segment (DPS) of the cuckoo was placed on the Service's candidate list of threatened and endangered species considered for protection under the Act. The limits of the DPS were defined as the area west of the crest of the Rocky Mountains. In Montana, Wyoming, northern and central Colorado, the crest coincides with the Continental Divide. In southern Colorado and New Mexico the crest coincides with the eastern boundary of the Rio Grande drainage, including the Sangre de Cristo Mountains and excluding the drainage of the Pecos River. In west Texas, the boundary is the line of mountain ranges that form a southeastern extension of the Rocky Mountains to the Big Bend area of west Texas and along the western boundary of the Pecos River drainage. The northern and southern extent of the DPS is the Canadian and Mexican international boundaries.

Habitat

Western yellow-billed cuckoos breed in large blocks of dense riparian habitats, most often including woodlands with tall cottonwoods and willows. Dense understory foliage may be an important factor in nest site selection, and cottonwoods may provide important foraging habitat. Home ranges are typically about 25 acres in size, but may be as large as 99 acres. Cuckoos west of the Continental Divide nest almost exclusively near water.

Distribution in the Planning Area

Western yellow-billed cuckoos are known to occur in Pahranagat Valley and along the Meadow Valley Wash in Lincoln County. Nesting has not been documented, but comprehensive survey efforts, particularly in Pahranagat Valley, are limited by inaccessibility to private lands where much of the habitat occurs. Within the planning area, yellow-billed cuckoos have been detected north of Elgin along the Meadow Valley Wash, on the Pahranagat National Wildlife Refuge (NWR), and on private lands north of the refuge in Pahranagat Valley.

Reasons for Concern

The yellow-billed cuckoo's range and population numbers in the western United States have declined substantially over the last 50 years. Contracted range and population declines are mainly attributed to loss of riparian habitat from dams, flow alterations, channel modification, and clearing of land for agriculture, pesticide use, non-native plant invasion (salt cedar), and brown-headed cowbird parasitism. The Service published a 12-month finding in the Federal Register on July 25, 2001, that described the distributional extent of the western distinct population segment of the yellow-billed cuckoo and found that the listing of the western DPS was warranted but precluded by other higher priority listing actions. The yellow-billed cuckoo western DPS was subsequently placed on the candidate species list for future consideration for listing as a threatened or endangered species under the Act.

BLM Proposed Management Actions That May Benefit the Species

VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, in order to provide for stable water flow and bank stability.

VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat.

WL-1: Emphasize management of priority habitats for priority species.

WL-4: Mitigate all discretionary permitted activities that result in the loss of aquatic and priority wildlife habitats by improving 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.

WL-16: When planning projects, consider migratory birds, as appropriate, to minimize take and limit impacts.

WL-17: Work with the Service, NDOW, and other partners (e.g., Great Basin Bird Observatory, Partners in Flight) to conduct breeding bird surveys to document the population status and trends of those migratory bird species of concern.

SS-2: Develop and implement an interagency inventory and monitoring program for species status plant and animal species.

SS-20: Limit livestock grazing in the Lower Meadow Valley Wash ACEC through terms and conditions and/or season-of-use restrictions on grazing permits in accordance with a site-specific ACEC plan.

LR-2: Retain lands within ACECs.

Additional Management Recommendations

1. Avoid the authorization of actions that would promote or contribute to declines in surface and ground water resources.

2. Avoid disposal of BLM-administered lands that contain riparian areas.

3. Upon completion of salt cedar removal projects in the Meadow Valley Wash, revegetate project sites with native riparian plant species to ensure no net loss of large woody riparian vegetation.

References

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Service. 2001. Endangered and threatened wildlife and plants; 12-month finding for a petition to list the yellow-billed cuckoo (Coccyzus americanus) in the western continental United States. Federal Register 66:38611-38626.

4. Bald eagle (*Haliaeetus leucocephalus*)

Species Description

The bald eagle is a large raptor with a wingspread of about 7 feet. Adults have a dark brown body and wings, white head and tail, and a yellow beak. Juveniles are mostly brown with white mottling on the body, tail, and undersides of wings. Adult plumage is usually obtained by the sixth year. In flight, the bald eagle often soars or glides with wings held at a right angle to the body.

Species Range

The range of the bald eagle extends from Alaska and Canada throughout the United States and into northern Mexico.

Habitat

Bald eagles frequent estuaries, large lakes, reservoirs, major rivers, and some seacoast habitats. These areas must have an adequate food base, and appropriate perching and nesting sites that meet certain requirements to support bald eagles. In winter, bald eagles often congregate at specific wintering sites that are generally close to open water and that offer good perch trees and night roosts.

Distribution in the Planning Area

The only consistent nesting territory within the planning area occurs in the vicinity of the Ruby Lake NWR. There are several nests in the area and active sites have varied annually but all sites occur on land either managed by the NWR or private parcels located in the area. An additional nest site has been documented on the Pahranagat NWR, although this site has not been active in nearly a decade. Bald eagles are known to traditionally winter in several locations within the planning area. These sites include Pahranagat Valley in and around the Pahranagat NWR; Ruby Valley in and around the Ruby Lake NWR; White River Valley near the Kirch Wildlife Management Area; Little Smoky, Railroad, and Big Sand Spring Valleys surrounding the Pancake Range; Antelope Valley near the Goshute Indian Reservation; and Steptoe Valley from Ely extending north.

Reason for Concern

The bald eagle was listed as endangered in 1967 under the Endangered Species Preservation Act of 1966, in response to declines in the population attributed to effects from the use of dichlorodiphenyltrichloroethane (DDT) and other organochlorine compounds. Only those eagles south of the 40th parallel were considered endangered. In 1978, the Service listed the bald eagle throughout the lower 48 states as endangered except in Michigan, Minnesota, Wisconsin, Washington and Oregon, where it was designated as threatened. In 1995, the Service reclassified the bald eagle from endangered to threatened status throughout the lower 48 states. In July of 2007, the Service determined that the bald eagle had recovered to the point that it no longer required protection under the Act, and removed the bald eagle from the list of threatened and endangered species. In March 2008, bald eagles in the Sonoran Desert of Central Arizona were relisted as threatened, while a status review is conducted. The Service is required to monitor species populations for a minimum of 5 years after delisting. The availability of a draft monitoring plan for the bald eagle was published in the Federal Register on July 9, 2007 (72 FR 37373). Although not final, the draft plan proposes to monitor bald eagle populations every 5 years for a 20-year period. The bald eagle remains protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

BLM Proposed Management Actions That May Benefit the Species

VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat.

SS-10: Mitigate all discretionary permitted activities that result in the loss of special status species habitats on a ratio of 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.

LR-5: Retain all public lands with springs and creeks that contain fisheries in federal ownership unless the disposal of these lands will result in the acquisition of lands with higher quality habitat.

Additional Management Recommendations

1. Avoid the authorization of actions that would promote or contribute to declines in surface and ground water resources.

2. Avoid disposal of BLM-administered lands that contain riparian areas.

3. Maintain large cottonwoods along the edges of lakes and streams to provide roosting sites for wintering birds.

References

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5. Pygmy rabbit (*Brachylagus idahoensis*)

Species Description

The pygmy rabbit is the smallest North American rabbit. Adult weights range from 0.54 to 1.2 pounds and adult lengths range from approximately 9 to 12 inches (70 FR 29253). Adult females are generally larger than adult males. The species can be distinguished from other rabbits by its small size, gray color, short rounded ears, small hind legs, and the absence of white on the tail (66 FR 59734).

Species Range

The pygmy rabbit's current geographic range includes most of the Great Basin and some of the adjacent intermountain areas of the western United States (Green and Flinders 1980). The northern boundary extends into southeastern Washington and southern Idaho. The eastern boundary extends into southwestern Montana and southwestern Wyoming. The southeastern boundary extends into southwestern Utah. Central Nevada and eastern California provide the southern and western boundaries (Bailey 1936, Washington Department of Fish and Wildlife 1995). The isolated population occurring in Washington is currently listed by the Service as an endangered distinct population segment.

Habitat

Pygmy rabbits typically occur in areas of tall, dense sagebrush cover, and are highly dependent on sagebrush to provide both food and shelter throughout the year (70 FR 29253). The pygmy rabbit is one of only two rabbits in North America that digs its own burrows, and as such is thought to be restricted to areas with suitable soils which are sufficiently deep and loose enough to allow burrowing. Burrows are typically dug into gentle slopes or mound/inter-mound areas of more level or dissected topography (Wilde 1978, Gahr 1993).

Distribution in the Planning Area

The pygmy rabbit may occur throughout the majority of the planning area in appropriate habitats. The species is likely absent from the Mojave Desert portion of the District located in southern Lincoln County. Rabbit densities should be anticipated to be variable across the Great Basin section of the District based on habitat requisites. Species distribution is likely not contiguous across or among a single or multiple Basins.

Reasons for Concern

From 1991 to 1996, the pygmy rabbit was designated by the Service as a Category 2 candidate species under the Act. In 1996, the Category 2 designation was discontinued and the pygmy rabbit was removed from the candidate list at that time. In January 2008, the Service published a 90-day finding on a petition to list the pygmy rabbit, concluding that the petition presented substantial scientific or commercial information indicating that listing the species may be warranted. Apparent cause for concern stems from suggested population declines and reductions in distribution. Primary threats across the North American range of the species are habitat loss, degradation, and fragmentation due to natural and anthropogenic causes including wildfire; agricultural, urban, and energy developments; recreation; grazing; and other associated activities that disturb or alter sagebrush habitats. Additional threats to pygmy rabbits may include alterations to predator-prey dynamics, illegal shooting, disease, collisions with moving objects, pesticides, and other contaminants.

BLM Proposed Management Actions That May Benefit the Species

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

VEG-4: Design management strategies to achieve plant composition within the desired range of conditions for vegetation communities, and emphasize plant and animal community health at the mid scale (watershed level).

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

SS-2: Develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-10: Mitigate all discretionary permitted activities that result in the loss of special status species habitats on a ratio of 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.

SS-43: Survey all proposed ground disturbing activities in suitable pygmy rabbit habitat utilizing the appropriate protocol. Surveys will be completed by a qualified biologist approved by the Ely District Office.

Additional Management Recommendations

1. Support mapping, surveying, and monitoring efforts of potential, suitable pygmy rabbit habitat on BLM-administered lands with the Ely District planning area.

2. Draft survey guidelines have been developed for pygmy rabbit and are available upon request from the Service. We recommend surveys be completed prior to ground disturbing activities and that the needs of the species are considered during project planning and implementation.

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6. Meadow Valley Wash desert sucker (*Catostomus clarki* ssp.)

Species Description

Very little information is available on the Meadow Valley Wash (unnamed) subspecies of desert sucker; however, it is assumed that species description, habitat preferences, and other life history information for the subspecies should be generally similar to that for the species.

The desert sucker is silvery tan to darkish green above and silvery to yellowish below. There is a distinct notch at each corner of the mouth. The edge of the jaw inside the lower lip has a hard cartilaginous sheath. The upper lip is recurved and there is a small flap of skin at the base of each pelvic fin.

Adults reach a maximum size of 13 inches and probably live 8 to 10 years. It is an herbivore, feeding on encrusted diatoms and algae scraped from stones and other surfaces by its cartilage-sheathed jaws. In Arizona the desert sucker spawns at age 3, in late winter to early spring on riffles in a manner similar to other suckers. The young tend to congregate in large numbers along the bank in quiet waters then progressively move into the main stream as they increase in size.

Species Range

The species ranges throughout the lower Colorado River basin downstream from Grand Canyon in south central and southern Arizona, and in western New Mexico. In the Great Basin, it is present in the pluvial White River near Preston and Lund in White Pine County, Nevada; and in the Meadow Valley Wash in Lincoln County, Nevada. Three subspecies are recognized: White River desert sucker (*C. c. intermedius*), Virgin River desert sucker (*C. c. utahensis*), and the Meadow Valley Wash desert sucker (*C. c.* [unnamed]). The unnamed subspecies is known only from the Meadow Valley Wash.

Habitat

The desert sucker is found in rapids and flowing pools of streams and rivers primarily over bottoms of gravel-rubble with sandy silt in the interstices. Adults may live in pools during the day then move to swift riffles and runs to feed and spawn. Waters can be turbid or muddy, but it also lives in clear trout waters. Water temperatures are variable depending on the season, and range from 45 to 85ºF during June to September. Adults may live in water as deep as 6 to 8 feet but are frequently found at depths of 3 to 4 feet.

Distribution in the Planning Area

The Meadow Valley Wash desert sucker occurs in the Condor Canyon area of Meadow Valley Wash north of Caliente, and in perennially-flowing reaches of the Meadow Valley Wash south of Caliente and the Clover Creek east of Caliente.

Reasons for Concern

The Meadow Valley Wash subspecies of desert sucker was formerly designated by the Service as a Category 2 Candidate species under the Act. In 1996, the Category 2 designation was discontinued and the Meadow Valley Wash desert sucker was removed from the candidate list at that time. The subspecies is protected by the State of Nevada as a sensitive species. The desert sucker is a narrowly distributed subspecies that occurs only within the Meadow Valley Wash and Clover Creek streams in Lincoln County. Alteration of historic flows has reduced the amount of available habitat. Other threats include flood control and agricultural activities that result in dewatering of stream reaches. The effect of nonnative aquatic species on the Meadow Valley Wash desert sucker is not known.

BLM Proposed Management Actions That May Benefit the Species

VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, in order to provide for stable water flow and bank stability.

LR-5: Retain all public lands with springs and creeks that contain fisheries in federal ownership unless the disposal of these lands will result in the acquisition of lands with higher quality habitat.

Additional Management Recommendations

1. Ensure that routes for organized recreational activities avoid crossing the Meadow Valley Wash and Clover Creek to prevent erosion and increased sedimentation of stream channels.

2. Use best management practices as described in *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States* (BLM 2007c), for herbicide use close to aquatic habitats during nonnative species removal projects.

3. Avoid the authorization of actions that would promote or contribute to declines in surface and ground water resources.

4. In the event that a stream reach must be temporarily dewatered or diverted as a result of any BLM-authorized activities, and after obtaining all necessary Federal, state, and local permits, follow direction provided by the Meadow Valley Wash Fish Translocation and Salvage Protocol (available from the Service) for translocating native fish to alternate upstream habitats prior to initiation of the activity.

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7. Meadow Valley Wash speckled dace (*Rhinichthys osculus* ssp.)

Species Description

The Meadow Valley Wash speckled dace is one of many undescribed subspecies of the speckled dace, *Rhinichthys osculus*. The speckled dace is a small fish in the minnow family, reaching a length of only 3 to 4 inches. Females are generally larger than males. It is gray or gray-brown with scattered and vague darker flecks, usually above the midline of the sides. The lower sides and belly are yellowish or creamy-white. Life span is short, with individuals rarely living beyond 3 years. The speckled dace is a bottom-dwelling fish, feeding on benthic organisms such as aquatic insects, freshwater shrimp, plant material, and zooplankton.

Species Range

Although the species occurs over wide and diverse habitats throughout the western United States, it has adapted at the sub-specific level in response to the many variable habitats within which it is found. The Meadow Valley Wash subspecies is endemic to Nevada, only found in the Meadow Valley Wash and Clover Creek within reaches that support perennial or intermittent flows.

Habitat

The Meadow Valley Wash speckled dace lives in a wide variety of habitats, from swift, cold riffles of mountain streams to the quiet waters of isolated cool or warm springs. It is uncommon in water over 3 feet deep. It is rarely found singly, but avoids forming large schools except during spawning. It is most active at night, spending the day among rocks in shallow water or in slightly deeper areas.

Distribution in the Planning Area

The Meadow Valley Wash speckled dace co-occurs with the Meadow Valley Wash desert sucker in the Condor Canyon area of Meadow Valley Wash, and in perennially-flowing reaches of the Meadow Valley Wash south of Caliente and Clover Creek to the east of Caliente.

Reasons for Concern

The Meadow Valley Wash speckled dace was formerly designated by the Service as a Category 2 Candidate species under the Act. In 1996, the Category 2 designation was discontinued and the Meadow Valley Wash speckled dace was removed from the candidate list at that time. The subspecies is protected by the State of Nevada as a sensitive species. Similar to the Meadow Valley Wash desert sucker, the Meadow Valley Wash speckled dace is a narrowly distributed subspecies that occurs only within the Meadow Valley Wash and Clover Creek streams in Lincoln County. Alteration of historic flows has reduced the amount of available habitat. Other threats include flood control and agricultural activities that result in dewatering of stream reaches. The effect of nonnative aquatic species on the Meadow Valley Wash desert sucker is not known. The adaptability of this species to a wide range of habitats exhibits the importance of both the species as a whole and the numerous subspecies as mechanisms for evolutionary studies.

BLM Proposed Management Actions That May Benefit the Species

VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, in order to provide for stable water flow and bank stability.

LR-5: Retain all public lands with springs and creeks that contain fisheries in federal ownership unless the disposal of these lands will result in the acquisition of lands with higher quality habitat.

Additional Management Recommendations

1. Ensure that routes for organized recreational activities avoid crossing the Meadow Valley Wash and Clover Creek to prevent erosion and increased sedimentation of stream channels.

2. Use best management practices as described in *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States* (BLM 2007c), for herbicide use close to aquatic habitats during nonnative species removal projects.

3. Avoid the authorization of actions that would promote or contribute to declines in surface and ground water resources.

4. In the event that a stream reach must be temporarily dewatered or diverted as a result of any BLM-authorized activities, and after obtaining all necessary Federal, state, and local permits, follow direction provided by the Meadow Valley Wash Fish Translocation and Salvage Protocol (available from the Service) for translocating native fish to alternate upstream habitats prior to initiation of the activity.

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8. Arizona toad (*Bufo microscaphus*)

Species Description

Arizona toads are medium-sized toads that measure 2-3 inches in length (snout to urostyle). Their background color varies from olive to brown to pink with light stripe/patch on head and back. Arizona toad may or may not have spots on their back (dorsum). Pure Arizona toads do not have cranial crests or mid-dorsal stripes which are characteristics of the Woodhouse toad. Parotid glands are oval in shape and a lighter color towards the front of the head.

Species Range

The Arizona toad occurs in localized populations throughout southern California, southern Nevada, western-central Arizona, western New Mexico, and northwestern Mexico.

Habitat

The Arizona toad inhabits streams and intermittent desert washes and arroyos, palm oases, Joshua tree and sagebrush-mixed chaparral communities. The toad breeds in clear, quiet water along streams and does not depend directly on rainfall to initiate breeding.

Distribution in the Planning Area

The species primarily occurs along the Meadow Valley Wash however, no systematic surveys have been conducted to document the distribution of the species in Nevada. In the early 1990s, a

graduate student (San Diego State University) located a substantial population of Arizona toads in Meadow Valley Wash on Route 317 from Elgin to south of Caliente. This may be the only remaining population in Nevada.

Reasons for Concern

The distribution of Arizona toads in Nevada, which is the northernmost extent of the species' range, has likely been reduced from its historical distribution. Degradation of intermittent and perennial streams from invasive salt cedar, livestock grazing, stream channelization for flood-control and irrigation are recognized as important threats to the species in Nevada. Woodhouse toads hybridize with Arizona toad and out-compete the Arizona toad in disturbed and modified (lentic) habitats.

BLM Proposed Management Actions That May Benefit the Species

VEG-2: Develop specific management objectives through the watershed analysis process.

WR-1 and **WR-2**: Implement actions to ensure that activities do not degrade water quality.

WR-4: Control land uses to promote desired watershed vegetation conditions.

Additional Management Recommendations

1. Remove salt cedar and replace with native canopy species such as willow and cottonwood.

2. Establish project avoidance areas, particularly mining projects, along the Meadow Valley Wash between Elgin and Caliente to minimize impacts to the remaining habitat for the Arizona toad including OHV events.

3. Manage aquatic habitat to retain stream (lotic) environments. Ponded (lentic) areas provide the woodhouse toad (*Bufo woodhousii*) a competitive advantage over Arizona toads.

4. Consider the conservation needs of the Arizona toad during the watershed analysis process.

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9. Banded Gila monster (*Heloderma suspectum cinctum*)

Species Description

The Gila monster and Mexican beaded lizard (*H. s. horridum*) are the only two species of venomous lizards. Gila monsters have enlarged, grooved teeth in their lower jaw immediately adjacent to the opening of the venom duct which conveys venom from the venom gland. The dorsal coloration of the Gila monster is black with pink or orange. In the southern subspecies, the reticulated Gila monster (*H. s. suspectum*), the light markings or bands, are broken up to form a reticulated pattern. In the northern subspecies, the banded Gila monster, the light markings generally form an unbroken band across the back. They are the largest lizard in the U.S. measuring up to 22 inches in total length, and are able to store more energy than smaller lizards. They store fat in their tail and in their bodies. Gila monsters have low resting metabolic rates, are capable of consuming meals up to one-third their body weight, and are capable of storing large amounts of fat in their tails and body, thus making frequent searching for food unnecessary. Therefore, they are rarely seen above ground. It has been suggested that Gila monsters may consume their entire yearly energy budget in three or four large meals.

Gila monsters are most active above-ground during spring. Not only is this when mating occurs, but it is when their main source of food (vertebrate nests) is most abundant. They are diurnal but most activity occurs in the morning. Gila monsters have a home range of about one square mile. They are usually solitary animals, but do gather in communal areas in the spring for mating.

The Gila monster inhabits hot desert regions of the southwestern U.S. and northern Mexico. Because Gila monsters spend over 95 percent of their time resting in sub-surface refugia, the characteristics of shelters used by Gila monsters may be important in influencing patterns of distribution and abundance. Gila monsters feed predominately on juvenile mammals and eggs of ground nesting birds and reptiles (Lowe *et a*l. 1986; Beck 1990; Beck 2005).

A component of Gila monster venom (Exendin-4) is currently being investigated as a promising new drug to treat type-2 diabetes.

Species Range

The range of the banded Gila monster includes extreme southeastern California, southern Nevada, southwestern Utah, and western Arizona (Beck 2005). Banded Gila monster populations show a patchier pattern of geographic distribution in the Mojave Desert than in the Sonoran Desert. The upper elevational limit for the species is approximately 5,000 feet.

Habitat

Banded Gila monsters are often confined to the margins of certain rocky outcrops, along sandy areas bordering such cliffs, and along arroyos and riparian areas (Woodbury 1931, Beck 1985). Habitat parameters for the Gila monster are complex involves geology, hydrology, vegetation communities, climatic factors, animal communities that share Gila monster habitat, and human-altered habitat.

Recent work in New Mexico has shown that Gila monsters select habitats based on the availability and quality of potential retreat sites (Beck and Jennings 2000). Gila monsters show great fidelity to shelters year after year, and alter their choice of shelters as conditions change seasonally. Humidity may play an important role in habitat selection. Shelters used by Gila monsters during the hottest, driest time of the year are significantly more humid inside than are other shelters (Beck and Jennings 2000). Gila monsters have unusually high rates of water loss (especially for desert lizards), which may strongly influence their habitat requirements and seasonal patterns of activity and habitat use.

Distribution in the Planning Area

The lack of knowledge about distribution patterns and habitat requirements has severely limited management options for this lizard. The map below, developed by NDOW, estimates the distribution of Gila monsters in the planning area.

Reasons for Concern

From 1991 to 1996, the Gila monster was designated by the Service as a Category 2 candidate species under the Act. In 1996, Category 2 designation was discontinued and the Gila monster was removed from the candidate list at that time. There are serious concerns that fragmentation of habitat has reduced not only individual numbers within localities, but also the overall range of the Gila monster, to only a fraction of its historical abundance and distribution, especially in the Mojave Desert (Beck 1985). Other reasons for concern include: Overcollection for personal and commercial (herpetoculture) purposes; malicious killing; road kills; development associated with urbanization; modification of desert riparian and wash habitat coincidental to various land uses; livestock grazing, mining, recreation, and agricultural development.

Gila monsters have enormous black market value. "Legal" banded Gila monsters are selling for $1,600-$2,000 from reptile dealers on the internet. The cumulative effects of illegal collection on Gila monster populations are unknown but may be catastrophic. There are several reasons that banded Gila monster populations are declining in the Mojave Desert. Gila monsters are long-lived, show low reproductive potential, very low rates of metabolism, patchy and localized

population distributions, a specialized diet (eggs and young of vertebrate nests), and very low levels of activity (Lowe *et al*. 1986, Beck 1990, Beck and Lowe 1994). These traits make Gila monsters particularly vulnerable to population decline in response to habitat disturbance, fragmentation, illegal collection, and other factors, yet also make them difficult to study.

As urban development continues within, or contiguous with Gila monster habitat, Gila monsters will likely be negatively affected by loss of habitat, and indirectly through human-related land uses. As development occurs, Gila monsters will be impacted by: Increases in the number and distribution of free-ranging dogs and other opportunistic predators of Gila monsters; vandalism and intentional killing; illegal collection; and construction of new roads or increases in traffic levels on existing roads resulting in mortality and injury of Gila monsters. The current status of the banded Gila monster is unknown but believed to be declining in certain portions of its range (Beck 2005).

BLM Proposed Management Actions That May Benefit the Species

SS-2: Develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-24: Manage desert tortoise habitat [which partially overlaps Gila monster habitat] by implementing those actions and strategies identified in the Desert Tortoise Recovery Plan and appropriate actions from future habitat conservation plans that the Ely District Office has the authority to implement.

SS-30: Manage leased public lands in the Coyote Springs area in accordance with Public Law 100-275 dated March 31, 1988, and the Land Lease Agreement signed July 14, 1988.

SS-32: Where appropriate, restrict permitted activities from March 1 through October 31 within desert tortoise habitat [which includes the period of highest Gila monster activity].

LR-1: Retain lands or interest in lands within designated critical habitat for federally listed threatened and endangered species unless the disposal results in the acquisition of land with higher quality habitat.

LR-2: Retain lands within ACECs.

LR-40 through **LR-49**: Establishes avoidance areas and includes measures to minimize effects to the desert tortoise which may also protect Gila monsters.

RE-4 through **RE-6**: Establishes avoidance areas, some of which are occupied by Gila monsters.

TM-1 through **TM-8**: Minimizes impacts of roads.

REC-13: Designate event routes and develop additional mitigation in subsequent activity level plans.

Additional Management Recommendations

1. Establish desert washes as avoidance areas for OHV activities particularly from March through mid-June.

2. Coordinate with NDOW and the Service to identify and map key habitat for the Gila monster and implement special management for these areas.

3. Include Gila monsters in desert tortoise awareness programs presented for project personnel.

4. Include Gila monster in transportation and recreation management plans in coordination with NDOW and the Service.

5. Eliminate livestock grazing from the Beaver Dam Slope to minimize effects to Gila monsters that are known to occur there and allow the area to recover from long-term grazing effects.

6. For projects that may occur within the range of the Gila monster, BLM should provide project personnel a copy of the NDOW November 17, 2005, protocol (*Gila Monster Protocol for Minimizing Impacts in the Construction Site*) which is attached (Appendix B)

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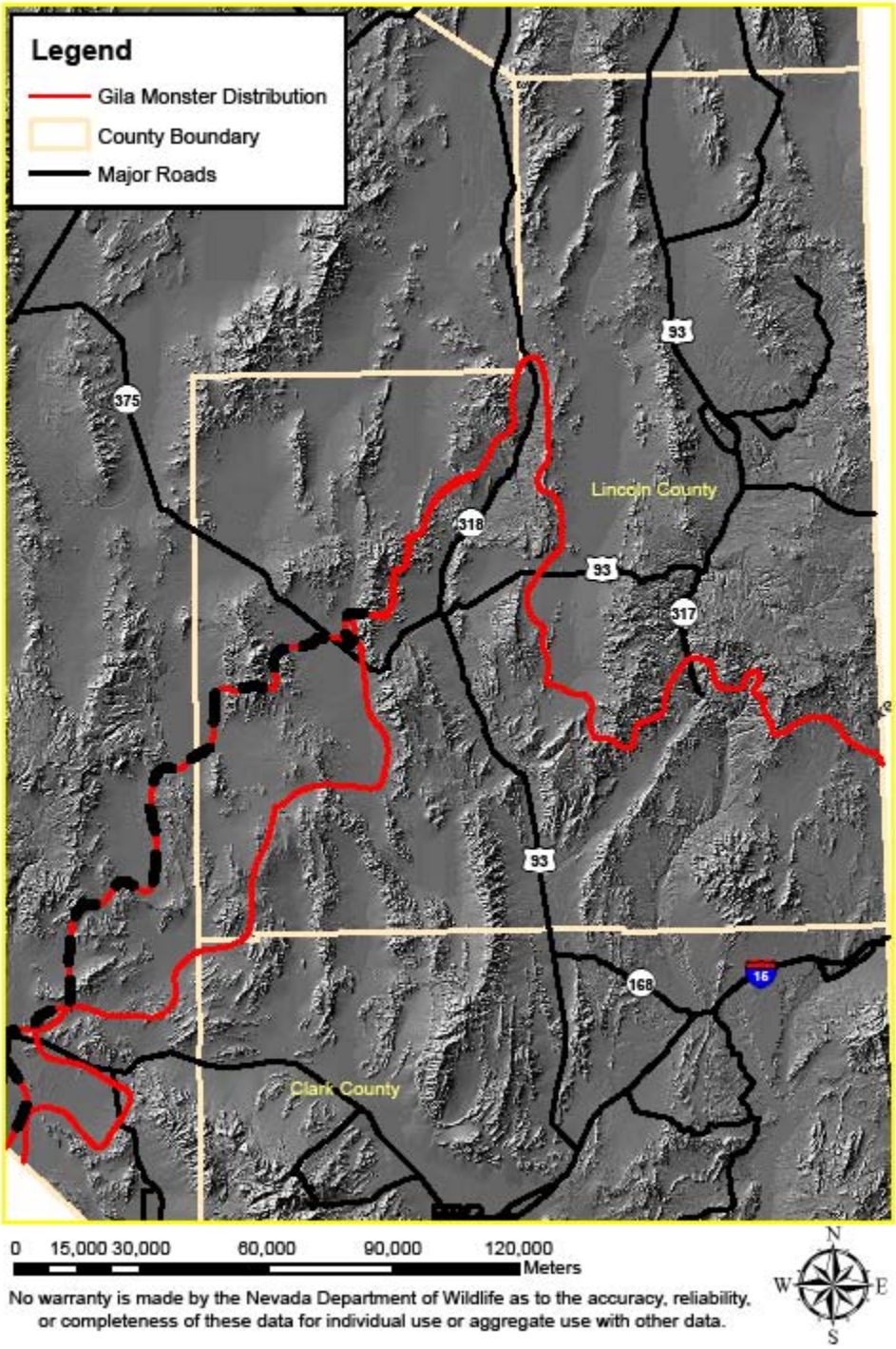
Estimated Gila Monster Distribution in Lincoln Co.



No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

10. Sunnyside green gentian (*Frasera gypsicola*)

Species Description

Sunnyside green gentian is a pale green or whitish perennial with a short, wide root crown from which arise numerous branches tightly pressed together (Barneby 1942). The leaves are thin and grass-like, always opposite, close together, and approximately 2 to 3.5 inches long. The leaves form a depressed mound 4 to 8 inches wide. Mature plants stand approximately 4 to 8 inches high. Flowers are typically present in June and July and are white and freckled with purple-blue.

Species Range

Global distribution appears to be limited to the White River Valley in White Pine and Nye Counties in Nevada; a disjunct population also exists in Millard County, Utah (Forbis 2007). Prior to 2005, 7 to 9 populations had been documented with an estimated population size of approximately 70,000 individuals on about 800 acres (Smith 2000). Recent surveys funded by the Service and conducted by The Nature Conservancy have discovered several new populations and found that some of the previously known populations are more extensive than previously thought. None of the newly discovered populations have increased its known range.

Habitat

The habitat has been described as open, dry, alkaline, often salt-crusted and spongy silty-clay soils on calcareous flats and barrens, with little if any gypsum content (Smith 2000, Nevada Natural Heritage Program 2001), where the plant is typically found in cushion-plant associations around 5180-5510 feet elevation and surrounded by sagebrush, greasewood, and occasionally barberry and swamp cedar vegetation. Recent studies have found Sunnyside green gentian to be more closely associated with Pleistocene gypsum spring mounds and less commonly in saline bottoms (Forbis 2007). On some of the gypsum spring mounds, the species co-occurs Tiehm blazingstar (*Mentzelia tiehmii*) another White River Valley endemic with an even narrower range (Forbis 2007).

Distribution in the Planning Area

Distribution in the planning area is the same as the *Species Range*, with the exception of the disjunct population in Utah.

Reasons for Concern

From 1991 to 1996, the Sunnyside green gentian was designated by the Service as a Category 2 candidate species under the Act. In 1996, the Category 2 designation was discontinued and the Sunnyside green gentian was removed from the candidate list at that time. The species is currently not afforded any specific recognition under the Act. The species was included in a petition to list 206 species, dated July 24, 2007. The petition is currently under review by the Service. Sunnyside green gentian is currently considered a fully protected species under Nevada State law and a Sensitive Species by BLM. The population trend of the species is not known but

distributional surveys appear relatively complete. The reasons for concern stems primarily from the species restricted range, small population sizes, and extreme habitat specialization.

Potential impacts likely include any management action or natural event, which has the potential to disturb the plant's habitat or diminish its populations including, but not limited to recreation, energy development, wildfire, grazing, and climate change. OHV recreation likely poses the greatest and most imminent ongoing threat to the species; a significant increase in OHV use has been reported in the vicinity of Hot Creek Butte associated with recreational use of the nearby hot spring (Forbis, pers. comm., February 7, 2008).

The most likely impacts from energy development are likely to be related to potential solar generation facilities and infrastructure located to take advantage of the energy transmission corridor that passes to the west of known populations. Because of the rarity of the known populations, however, impacts from solar energy development should be easily avoidable with proper planning.

Neither wildfire nor grazing is likely to pose a significant threat at this time. The generally sparsely-vegetated nature of the habitat in which the Sunnyside green gentian occurs is unlikely to provide sufficient fuel to sustain wildfire. However, an increase in annual fine fuels, such as cheatgrass (*Bromus tectorum*), as a result of climate change or surface disturbance by OHVs or livestock, could increase the potential for wildfire to occur and/or spread, and pose a more significant threat to the species. The low forage value of the habitat suggests that the effects of grazing are likely limited to the occasional tramping and/or grazing of individuals.

Climate change is likely to pose a significant threat over the coming decades to species adapted to specialized habitats, such as the Sunnyside green gentian. Its habitat only exists within an elevation range of about 300 feet on the floor of the White River Valley making migration in response to changed environmental conditions impossible unless the species can evolve into a broader range of habitats. The extreme habitat specialization of the Sunnyside green gentian suggests that both migration and evolution are unlikely within the time frame over which climate changes are currently predicted to occur.

BLM Proposed Management Actions That May Benefit the Species

SS-2: Develop and implement an interagency inventory and monitoring program for special status plant and animal species.

SS-36: Inventory and monitor populations of the Sunnyside green gentian in conjunction with the development of the White River Valley ACEC management plan.

Additional Management Recommendations

1. Partner with the Nevada Division of Forestry and the Nevada Fish and Wildlife Office to delineate with a global positioning system the population boundaries of all reported occurrences of the Sunnyside green gentian in the White River Valley, obtain basic

population estimates, and identify and assess the significance of site-specific threats to the species.

2. Collaborate with the Nevada Division of Forestry and the Nevada Fish and Wildlife Office to develop a conservation strategy for the Sunnyside green gentian that provides sufficient assurances to preclude a federal listing of the species. At a minimum, the conservation strategy should address the following points:

    a. The population and threat data obtained through implementation of management recommendation No.1 above.

    b. Development and implementation of a multistage (i.e., a combined qualitative and quantitative) long-term monitoring strategy for status and trend assessment.

    c. Collection and long-term conservation storage of representative germplasm of the Sunnyside green gentian in the designated seed bank for threatened and endangered plants of the Great Basin at the Red Butte Garden and Arboretum at the University of Utah, Salt Lake City (Maunder *et al*., 2004).

    d. Specific management strategies to address and mitigate all identified significant threats to the long-term viability of the species.

3. Incorporate conservation of the Sunnyside green gentian into all management and permitting actions that may affect any population of the species. Because of the rarity of this species, the emphasis should be placed on impact avoidance. If avoidance is not possible, impact minimization and mitigation measures should be implemented. All mitigation measures should include specific performance standards for success and should identify remedial actions if the performance standards are not met.

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Meadow Valley Wash
Fish Translocation and Salvage Protocol

April 2008

The following protocol has been adapted from a work plan developed by EDAW, Inc. on behalf of Union Pacific Railroad (UPRR) to safely and thoroughly translocate all native fish species from UPRR project sites related to flood repair damage activities that occurred along the Meadow Valley Wash and Clover Creek in 2005 (EDAW *in litt.* 2005). This protocol is appropriate to use for native fish translocation in those situations where dewatering of a portion of the stream is necessary and cannot be avoided. Use of this protocol shall be coordinated with the Nevada Department of Wildlife and U.S. Fish and Wildlife Service prior to commencement of projects.

1. Prior to initiating fish translocation activities, a preliminary site assessment will be conducted to visually evaluate general conditions of the stream reach that is to be dewatered and upstream habitat for potential release locations.

2. Block nets shall be placed above (i.e., upstream) and below (i.e., downstream) the designated construction area to isolate fish movement and prevent fish from entering the site on the morning of the fish translocation. The upstream block net shall be placed across the channel approximately 100 feet above the designated construction area. Placement of the downstream block net will be determined on a case-by-case basis, depending on the nature of the project, but shall be placed in the most appropriate area to minimize the number of fish entering the work area.

3. Once the stream reach has been isolated, the triple-pass electrofishing survey methodology (see below) based on historic stream survey methods will be employed throughout the entire length of the reach to capture, remove, and count fish. State and/or Federal agency personnel will be notified 2 days prior to the survey and on-site to observe the activities of the project fisheries biologist and assistants while conducting the electrofishing survey. Other components of the survey methodology include water quality, riparian, and aquatic invertebrate assessments as described below under "Electrofishing Survey Methodology".

4. A minimum of 5 passes with a seine net and hand dip nets shall be made throughout the entire length of the reach to attempt to capture and remove remaining fish from the channel. Seine passes shall continue as necessary until a diminishing return on fish captured per pass is reached (i.e., numbers of fish captured per pass are reduced to a level where the method is deemed no longer effective). The project fisheries biologist shall make the determination when a diminishing return on fish captured has been reached.

5. Additional electrofishing passes shall be made as necessary until it has been reasonably determined by the project fisheries biologist that all fish have been removed from the site.

6. Captured fish from electrofishing (step 3) and seining (step 4) shall be placed in 5-gallon buckets with fresh, clear water and transported by foot to upstream release site(s) identified in step 1. Buckets containing native fishes shall be moved to the release site frequently, with no more than 200 fish in a bucket at one time and kept in buckets for no longer than 15 minutes. All native fish species shall be released in pools or slow moving currents and shall be allowed to gently swim out of the buckets. Nonnative aquatic species that can be legally captured shall be destroyed. A minimum of one representative bucket sample from the entire translocation effort shall be counted for total individuals by species. Any potential fish mortalities shall also be noted.

7. Once all fish have been captured, transported, and released, the project fisheries biologist shall clear the site for dewatering. During the stream diversion and dewatering phase, the project fisheries biologist and a minimum of 5 assistants shall monitor the reach (with fish removal and transporting equipment) for any stranded fish that may have been missed during steps 3, 4, and 5. The stream diversion and subsequent wetting of one channel and dewatering of the other shall take place incrementally (a portion of the total flow will be diverted to allow the water to recede slowly in one channel while minimizing erosion potential and turbidity in the other channel). Any stranded fish shall be immediately captured, transported and released upstream as described above. Manual capture shall also include removal of native fish that are hiding or occurring under rocks in the dewatered channel. If it is deemed that additional personnel are necessary due to a large quantity of fish, the project fisheries biologist shall request assistance from Nevada Department of Wildlife or U.S. Fish and Wildlife Service staff. Once all potentially stranded fish have been removed, transported, and released, the site shall be thoroughly inspected for any potential stranded fish. If the site is deemed to be absent of fish after inspection, the project fisheries biologist shall clear the site for continued construction operations.

8. Nevada Department of Wildlife and U.S. Fish and Wildlife Service shall be notified two days prior to the expected date that the fish translocation and salvage will begin.

9. Within 10 business days after the fish translocation and salvage, the project fisheries biologist shall prepare a written report of findings for submittal to the appropriate resource agencies. The report shall include a description of all fish translocation and salvage activities and estimates for total fish translocated and salvaged by species (including any potential mortalities). State and Federal agency personnel shall be responsible for water quality, riparian, and aquatic invertebrate data collection, and analyzing and summarizing data collected during the triple-pass electrofishing survey (step 3).

Citation

EDAW, Inc. 2005. Letter transmitting Meadow Valley Wash Fish Translocation and Salvage Protocol and Electrofishing Survey Methodology to the Ely BLM Field Office, December 15, 2005.

Recommended equipment:

- 2 block nets of sufficient size to block channel (approximately 1/8-inch mesh)
- 1 backpack electrofishing unit
- Minimum of 2 electrofishing dip nets (long-handled, non-metallic, insulated handles)
- Eavy rubber gloves and/or other appropriate safety equipment for electrofishing
- Polarized glasses for dipnetters
- 5-gallon buckets, 10 minimum
- Minimum of 4 long-handled dip nets for general netting (dip nets should have a straight frame and a 90 degree angle to allow fishing in narrow places
- Minimum of 5 small aquarium nets

Electrofishing Survey Methodology

Transects are sampled with multiple-pass electroshocking in 25 meter transects. Block nets with 1/8-inch mesh are set at the bottom and top of each transect prior to sampling to prevent both immigration and emigration of fish during the sampling period. A three pass depletion sample for each transect is then implemented using a backpack electroshocker, with an output of approximately 1 ½ amps.

All fish captured during the sampling are stored in 5 gallon buckets, with fish from each pass in separate buckets. The captured fish are enumerated by species and a subset of approximately 100 individuals per species measured for total length (millimeters) prior to release below the lower block net. Population estimates based upon depletionj numbers at each transect are generated using the Zippin method (various references, e.g., Zippin 1956, Zippin 1958).

For each transect, water temperature and dissolved oxygen are recorded using a meter. A sample unit and location description is recorded for each transect including qualitative vegetation, substrate composition and aquatic invertebrate presence by order of family (where possible through field identification). The vegetation noted is divided into three subcategories: aquatic, riparian, and upland. Estimates of relative abundance of vegetation and invertebrates are described. Also, at each transect a digital picture is taken looking up and downstream from the downstream transect marker. These pictures are on file in the Nevada Department of Wildlife, Southern Region office in Las Vegas, Nevada.

References

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APPENDIX B (TO ATTACHMENT 3) Gila Monster Protocol

APPENDIX E
GRAZING ALLOTMENT STATUS

Table E-1
Allotments Evaluated for Meeting Standards of Rangeland Health

Allotment Name	Map Unit Number[1]	Allotment Number	Public Acres	Season of Use	Total Active Animal Unit Months[2]
Badger Spring	3	00823	24,125	4/15 to 11/30	1,412
Baker Creek	4	10125	55,515	Cattle: 10/16 to 6/18, Sheep: 12/01 to 04/30	4,311
Bassett Creek	7	10114	7,328	3/1 to 2/28	591
Bastian Creek	8	10121	13,527	3/1 to 2/28	1,778
Batterman Wash	9	11018	39,878	Cattle: 11/15 to 6/15, Sheep: 12/1 to 4/15	2,093
Becky Creek	11	00404	12,904	11/1 to 3/15	671
Becky Springs	12	10101	40,621	Cattle: 11/15 to 2/28, Sheep: 11/1 to 4/30	3,842
Bennett Creek	13	00409	1,473	6/1 to 10/31	37
Bennett Spring	14	21006	48,264	10/16 to 4/30	3,498
Big Indian Creek	15	00410	6,144	7/1 to 10/19	99
Big Rock Seeding	16	00428	1,862	5/1 to 7/15, 9/1 to 2/28	621
Big Six Well	17	00812	2,412	12/1 to 5/31	140
Black Bluff	18	10122	32,200	Cattle: 9/1 to 5/15, Sheep: 9/1 to 4/15	1,668
Black Canyon	19	11007	8,438	10/16 to 4/30	1,105
Black Horse	21	10123	15,394	3/1 to 2/28	510
Brown Knoll	24	00831	10,366	11/1 to 5/31	161
Butte Seeding	27	00507	976	6/1 to 10/30	275
Cattle Camp/Cave Valley	29	00903	75,846	5/15 to 11/30	6,878
Cave Valley Ranch	30	00904	38,524	5/1 to 10/31	2,403
Cave Valley Seeding	31	00908	942	5/1 to 8/10	200
Cherry Creek	32	00403	153,107	5/1 to 2/28	6,562
Chimney Rock	33	00914	20,037	Cattle and Sheep: 5/1 to 11/1	1,233
Chin Creek	34	10104	148,017	Cattle: 11/1 to 5/31, Sheep: 11/1 to 10/31	13,115
Chokecherry	35	10131	32,334	10/16 to 6/5	3,327
Cleveland Ranch	36	10119	11,656	11/1 to 2/28	1,021
Coal Valley Lake	39	10108	115,176	Cattle: 9/1 to 5/15, Sheep: 11/1 to 4/10	4,821
Cold Creek	40	00603	62,103	Cattle: 4/16 to 10/31, Sheep: 11/01 to 03/31	5,803
Cold Spring	41	00909	10,253	5/1 to 9/30	1,265
Connors Summit	44	00915	27,316	3/1 to 2/28	2,449
Copper Flat	45	00427	40,058	Cattle and Sheep: 4/15 to 11/1	3,033
Cottonwood	46	21021	62,145	5/1 to 10/31	1,296
Cottonwood	46	11015	42,172	10/1 to 12/31, 4/1 to 5/31	1,177
Cottonwood	46	00132	49,975	11/1 to 6/15	2,248
Cove	47	00817	26,538	1/1 to 4/30	1,544
Crescent (N-4)	48	01028	61,502	Cattle: 3/1 to 2/28, Sheep: 10/1 to 2/28	951
Crestline	50	11023	2,415	3/1 to 2/28	55
Crossroads	51	21024	19,201	5/1 to 10/31	689
Crystal Springs	52	21025	7,596	8/1 to 5/31	437
Dark Peak	53	00827	19,477	Cattle and Sheep: 4/1 to 11/1	1,826
Dee Gee Spring	54	00815	4,975	12/1 to 5/31	200
Deep Creek	55	10103	23,932	11/1 to 5/15	2,934
Devil's Gate	58	10115	17,686	11/15 to 4/30	2,316
Douglas Point	60	00810	19,318	4/1 to 5/31	368
Dry Farm	61	11024	32,464	Cattle: 6/1 to 9/30, Sheep: 10/1 to 4/15	1,530
Dry Mountain	62	00609	27,552	Cattle and Sheep: 10/1 to 4/1	1,757
Duckcreek	63	00423	9,531	6/1 to 10/31	498
Duckcreek Basin	64	00419	8,301	4/1 to 9/30	436
Duckcreek Flat	65	00412	32,406	8/1 to 6/15	1,347
Duckwater	66	00701	807,662	Cattle and Sheep: 3/1 to 2/28	23,364
East Wells	67	00830	3,542	12/1 to 5/31	122
Enterprise	70	11031	21,585	5/1 to 10/31	1,261
Forest Moon	72	01010	108,273	Cattle: 6/1 to 3/31, Goats and Sheep: 1/1 to 3/31, 8/16 to 10/15	2,263
Fox Mountain	74	11001	73,412	11/1 to 4/10	6,322
Geyser Ranch	78	01101	237,413	3/1 to 2/28	12,308
Gilford Meadows	79	00424	4,666	5/1 to 9/30	420
Giroux Wash	80	00826	48,200	Cattle: 4/1 to 12/15, Sheep: 4/1 to 11/1	5,326
Gold Canyon	82	00413	23,640	6/20 to 11/30	1,068
Goshute Basin	83	00402	9,397	Cattle: 7/1 to 9/1, Sheep: 7/1 to 10/15	633
Goshute Mountain	84	10102	5,693	11/1 to 3/31 (Administered by Elko District Office)	465
Gourd Spring[3]	85	01071	57,700	10/1 to 5/31	3,458
Hamblin Valley	88	00133	105,831	Cattle and Sheep: 11/1 to 5/31	8,177
Hardy Spring	89	11022	124,008	10/15 to 5/15	3,478
Henrie Complex[3]	91	11034	165,060	11/1 to 4/30	1,380

Table E-1 (Continued)

Allotment Name	Map Unit Number[1]	Allotment Number	Public Acres	Season of Use	Total Active Animal Unit Months[2]
Horse Haven	95	00620	25,000	5/1 to 9/30	1,056
Indian Creek	96	00401	3,167	7/1 to 9/1	177
Indian George	97	10112	41,650	10/16 to 4/15	2,860
Indian Jake	98	00804	47,168	3/15 to 6/15, 9/1 to 2/28	2,948
Irish Mountain	99	11006	83,465	Cattle: 3/1 to 2/28, Sheep: 10/1 to 2/28	3,141
Jake's Unit Trail	N/A	00821	15,056	4/1 to 4/30, 11/1 to 11/30	832
Klondike	100	01085	7,072	10/16 to 4/30	678
Lake Area	101	00910	27,556	Cattle and sheep; 5/1 to 11/1	2,978
Little White Rock	104	00913	13,012	Cattle and Sheep: 5/1 to 11/01	904
Lovell Peak	105	00406	2,360	7/1 to 9/30	105
Lower Lake West[3]	107	11013	57,000	3/1 to 2/28	1,247
Majors Allotment	110	10126	99,193	Cattle: 3/1 to 5/31, Sheep: 5/1 to 10/31	12,535
Maybe Seeding	113	00828	941	12/1 to 5/31	300
McCoy Creek	114	10135	5,289	3/1 to 2/28	508
McDermitt Creek	116	00505	2,703	Administered by Elko District Office	630
McQueen Flat	118	00805	10,403	4/15 to 11/15	496
Meadow Creek	119	10113	8,273	3/1 to 2/28	445
Medicine Butte	121	00501	287,368	Cattle: 3/1 to 2/28, Sheep: 4/15 to 11/15	7,232
Middle Steptoe	122	00411	2,361	7/1 to 10/7	173
Mill Spring	123	10109	5,587	4/1 to 9/30	341
Monte Cristo	124	00614	6,138	6/21 to 9/18	1,125
Moorman Ranch	125	00802	123,491	3/1 to 2/28	10,099
Muncy Creek	127	20111	207,906	3/1 to 2/28	12,384
Murphy Gap	128	10110	35,210	Cattle and Sheep: 10/1 to 4/15	1,951
N4/N5	132	01049	43,500	3/1 to 2/28	825
Narrows	133	11002	6,909	12/1 to 2/28	535
Needles	134	11016	85,500	Cattle: 10/1 to 2/28, Sheep: 10/1 to 4/15	2,679
Newark	136	00608	218,105	Cattle: 11/1 to 10/31, Sheep: 11/1 to 4/1	9,061
North Butte	137	00502	26,467	2/15 to 4/15, 8/1 to 10/31	180
North Chokecherry	138	20134	8,692	10/15 to 05/15	770
North Cove	139	00816	25,446	12/1 to 5/31	1,004
North Steptoe	140	00405	12,701	10/1 to 3/15	700
Oak Wells	142	01051	29,139	3/1 to 2/28	511
Pleasant Valley	153	00110	5,113	4/15 to 9/30	405
Preston	154	00806	10,250	4/18 to 5/31	166
Preston Lund Trail	N/A	00822	10,856	4/1 to 4/30, 11/1 to 11/30	1,569
Rabbit Spring	155	01057	20,975	6/1 to 3/15	884
Railroad Pass	156	00601	27,025	Cattle: 6/1 to 9/30, Sheep: 4/5 to 11/15	3,542
Red Hills	160	00108	35,489	11/1 to 4/30	2,600
Rock Canyon	162	00808	7,256	12/1 to 5/31	432
Ruby Valley	165	00619	20,081	3/1 to 4/3, 11/1 to 2/28	467
Sampson Creek	167	10105	13,232	5/1 to 9/30	1,327
Sand Springs	170	01066	249,685	3/1 to 2/28	7,005
Sawmill Bench	171	00807	319	11/10 to 12/17	114
Schellbourne	173	00407	16,316	10/15 to 5/15	685
Schlarman	174	01068	5,345	11/1 to 4/30	240
Sheep Flat	179	01069	74,171	6/1 to 9/30	1,977
Sheep Pass	180	00905	26,800	4/1 to 12/31	1,150
Sheep Springs	181	01070	31,077	6/1 to 3/15	409
Sheep Trail Seeding	182	00829	564	12/1 to 5/31	200
Shoshone Unit Trail	N/A	10140	16,517	5/1 to 5/5, 5/31 to 6/4, 10/25 to 10/29	483
Silverado	185	00623	6,284	11/15 to 2/13	338
Six Mile	188	00613	21,335	Cattle: 4/15 to 10/31, Sheep: 11/1 to 4/15	1,209
Smith Creek	190	20117	68,072	11/16 to 6/15	5,355
Sorensen Well	192	00818	5,880	12/1 to 5/31	193
South Butte	193	00504	26,081	4/15 to 2/28	396
South Butte Seeding	N/A	00506	968	5/1 to 10/31	245
South Coal Valley	195	10120	46,701	Cattle: 9/1 to 5/15, Sheep: 12/1to 4/15	2,205
South Hiko Six-Mile	196	11008	33,018	3/1 to 2/28	858
South Pancake	197	00615	31,088	3/15 to 4/30, 11/15 to 1/15	1,155
South Spring Valley	198	10130	79,323	Cattle: 2/1 to 6/15, Sheep: 5/1 to 6/15, 9/1 to 9/30	6,329
Stephen's Creek	199	10118	3,784	Cattle and Sheep: 6/1 to 10/31	318
Steptoe	200	00415	44,025	3/1 to 2/28	2,836
Strawberry	201	00607	21,135	6/1 to 10/30	1,032

Table E-1 (Continued)

Allotment Name	Map Unit Number[1]	Allotment Number	Public Acres	Season of Use	Total Active Animal Unit Months[2]
Sunnyside	203	21023	219,519	6/1 to 10/31	5,402
Swamp Cedar	204	00832	6,333	12/1 to 5/31	192
Taft Creek	205	10116	28,294	Cattle: 4/15 to 11/30, Sheep: 11/1 to 2/28	1,831
Tamberlaine	206	00901	31,692	3/15 to 10/15	2,002
Thirty Mile Spring	208	00503	178,716	4/15 to 2/28	8,405
Timber Mountain	209	01004	43,839	Cattle and Sheep: 11/1 to 4/10	2,373
Tippett	210	10106	200,041	Cattle: 3/1 to 2/28, Sheep: 4/16 to 12/15	12,800
Tippett Pass	211	20107	77,161	Cattle: 11/1 to 5/31, Sheep: 10/1 to 6/15	8,177
Uvada	212	01079	13,608	5/1 to 10/31	463
Warm Springs	215	00606	306,971	3/01 to 2/28	7,744
Warm Springs	214	01080	1,401	3/1 to 2/28	74
Warm Spring Trail	N/A	00622	16,385	3/1 to 3/31, 4/15 to 5/1, 11/1 to 11/30, 11/15 to 12/1	2,481
Well's Station	216	00819	5,880	12/1 to 5/31	312
West Schell Bench	217	00433	25,915	5/1 to 11/1	1,389
West Timber Mountain	218	11020	12,570	12/1 to 4/15	735
White River	221	11009	9,725	10/1 to 5/15	501
White River Trail	N/A	11005	19,300	11/1 to 4/20	1,505
White Rock[3]	223	01078	32,916	10/1 to 5/31	2,880
White Rock	222	00902	80,513	3/1 to 12/31	7,473
Willard Creek	226	10127	10,246	4/15 to 11/30	1,132
Willow Springs Addition	228	00825	602	6/1 to 7/1	114
Willow Springs Seeding	229	00824	300	8/31 to 10/6	70
Willow Springs	227	10129	46,967	3/1 to 2/28	6,608
Wilson Creek	230	01201	1,077,994	Cattle and Sheep: 3/1 to 2/28	48,250
Worthington Mountain	231	11021	77,798	Cattle: 1/13 to 5/31, Sheep: 12/15 to 4/10	5,641
Total			**8,408,789**		**424,602**

[1] Map unit number refers to livestock grazing allotments shown on **Map 19**.
[2] There are a total of approximately 190,000 suspended animal unit months. These are a matter of record at the Ely District Office.
[3] Allotments with acres, animal unit months, or season of use adjusted, as a result of the 2000 Caliente Management Framework Plan Amendment for Management of Desert Tortoise Habitat.

Table E-2
Allotments Not Evaluated for Meeting Standards of Rangeland Health

Allotment Name	Map Unit Number[1]	Allotment Number	Public Acres	Season of Use	Total Active Animal Unit Months[2]
Applewhite	1	21001	28,448	3/1 to 2/28	562
Ash Flat	2	21002	3,247	5/1 to 3/24	74
Bald Mountain	5	21003	269,723	Cattle and Horses: 3/1 to 2/28	5,811
Barclay	6	11004	79,621	5/16 to 11/15	1,971
Big Wash[3]	232	03498	5,218	Closed by U.S. Forest Service	0
Black Hills	20	21008	3,610	3/1 to 2/28	156
Boulder Spring[4]	22	21009	13,537	10/1 to 3/31	416
Breedlove[4]	23	11010	89,500	3/1 to 2/28	698
Buckboard	25	21011	10,842	3/1 to 2/28	263
Buckhorn	26	21012	82,968	3/1 to 2/28	3,370
Caliente	28	21014	2,008	3/1 to 2/28	40
Choke Cherry Forest Service[3]	233	03496	9,898	Closed by U.S. Forest Service	0
Cliff Springs	37	21016	35,821	3/1 to 2/28	2,043
Clover Creek	38	21015	22,876	11/1 to 4/30, 5/1 to 10/27	613
Comet	42	21018	9,146	3/1 to 2/28	214
Condor Canyon	43	21019	44,035	3/1 to 1/24	676
Corta[5]	--	10033	1,130	Administered by Battle Mountain District Office	128
Crescent (N-5)	49	01062	36,689	11/1 to 4/30	1,540
Currant Ranch[5]	--	00153	10,500	11/1 to 2/28	177
Deer Lodge	56	21026	6,880	3/1 to 2/28	167
Delamar[4]	57	01083	203,000	3/1 to 2/28	5,558
Douglas Canyon	59	00811	11,422	6/9 to 8/30	175

Table E-2 (Continued)

Allotment Name	Map Unit Number[1]	Allotment Number	Public Acres	Season of Use	Total Active Animal Unit Months[2]
Ely Springs Cattle	68	11029	55,168	3/1 to 2/28	4,248
Ely Springs Sheep	69	21030	22,927	10/16 to 5/15	1,802
Gallagher Gap	75	00418	3,299	11/1 to 2/28	169
Garden Spring[4]	76	01065	38,823	Cattle and Horses: 10/1 to 5/31	2,809
Georgetown Ranch	77	00422	23,688	3/1 to 5/31, 10/1 to 11/30	1,675
Goat Ranch	81	00421	5,524	4/22 to 9/4	213
Grapevine[4]	86	11032	22,000	3/1 to 2/28	349
Haggerty Wash	87	00907	904	6/15 to 10/15	194
Haypress	90	11033	7,843	5/1 to 10/31	154
Heusser Mountain	92	00416	33,956	5/1 to 3/31	1,486
Highland Peak	93	11035	45,542	10/16 to 5/15	3,704
Highway	94	01036	4,251	3/1 to 2/28	118
Lexington[3]	234	03497	7,843	Closed by U.S. Forest Service	0
Lime Mountain	102	21005	67,144	10/1 to 5/15	6,754
Little Mountain[4]	103	00414	18,575	Relinquished	0
Lower Lake East[4]	106	21022	41,800	3/1 to 2/28	640
Lower Riggs[4]	108	01087	19,569	5/1 to 3/24	1,408
Mahogany Peak	109	01040	28,441	3/1 to 2/28	718
Mallory Springs	111	00136	12,186	Cattle: 6/1 to 8/31, Sheep: 9/1 to 5/31	940
Maverick Springs	112	00621	42,679	3/1 to 2/28	1,500
McCutcheon Springs	115	01054	18,276	3/1 to 2/28	446
McGuffy	117	01043	22,115	3/1 to 2/28	298
Meadow Valley	120	01041	3,971	Cattle: 11/1 to 4/30, Horses: 3/1 to 2/28	56
Mormon Peak[4]	126	01044	64,700	6/1 to 3/31	600
Murphy Wash[3]	129	03503	54,307	6/5 to 9/10	728
Mustang	130	01047	23,877	3/1 to 2/28	1,134
Mustang Flat	131	01048	5,987	5/1 to 10/31	147
Negro Creek	135	00120	31,985	3/1 to 2/28	3,727
North Steptoe Trail	N/A	00426	1,181	9/15 to 10/15, 3/1 to 3/30	253
Oak Springs	141	01050	193,609	3/1 to 2/28	9,268
Pahranagat East[4]	143	11027	34,146	8/1 to 5/31	511
Pahranagat West[4]	144	01081	70,138	10/1 to 5/31	2,144
Pahroc	145	01052	117,443	3/1 to 2/28	4,783
Panaca Cattle	146	01053	16,275	3/1 to 2/28	453
Peck	148	01055	17,741	3/1 to 2/28	397
Pennsylvania	149	01056	30,971	5/1 to 10/31	588
Pine Cone	150	01045	28,265	8/1 to 2/28	1,205
Pine Creek	151	11012	34,693	5/1 to 12/31	2,667
Pioche	152	01086	13,440	3/1 to 2/28	402
Rainbow	157	11028	7,033	3/1 to 2/28	665
Rattlesnake	158	01058	28,426	10/16 to 5/30	1,180
Red Bluff	159	01059	10,000	9/9 to 2/28, Administered by Tonopah Field Station	34
Road Side	161	01061	1,123	12/1 to 2/28	32
Rocky Hills	163	--	4,375	Relinquished	0
Sacramento Pass/Strawberry[3]	166	00123	40.582	5/1 to 12/30	2,008
Sand Hills	168	01088	11,585	6/1 to 10/31	229
Sawmill Canyon	172	01067	9,177	3/1 to 2/28	181
Schoolhouse Spring	175	00420	7,033	4/1 to 2/28	191
Scotty Meadows	176	10128	17,322	6/1 to 9/30	1,227
Second Creek	177	00417	7,776	5/1 to 2/28	358
Shadow Wells	178	01060	17,862	11/1 to 4/30	577
Shingle Creek[3]	183	03502	9,302	6/20 to 9/10	575
Shingle Pass	184	00906	74,788	5/16 to 10/15	2,724
Simpson	186	21004	8,379	3/1 to 4/30	747
Six Mile	187	01073	34,531	3/1 to 2/28	859
Six Mile Ranch	189	00814	2,232	4/1 to 4/30, 9/15 to 2/28	162
Snake Creek[3]	235	03499	3,086	Closed by U.S. Forest Service	0
Snow Springs[4]	191	01074	44,042	10/1 to 5/15	3,567
Soap Creek[3]	236	03508	1,284	Closed by U.S. Forest Service	0
Summit Spring[4]	202	01077	18,035	10/1 to 5/31	715
Terry[6]	207	--	30,163	11/1 to 5/31, Administered by St. George District Office	1,511
Tom Plain	212	00803	77,039	3/1 to 2/28	6,039
White Hills	219	01082	2,755	12/1 to 2/28	101
White Pine Seeding	220	00602	4,305	Administered by Elko District Office	258
Whiteman Creek	224	00408	5,417	5/1 to 2/28	384

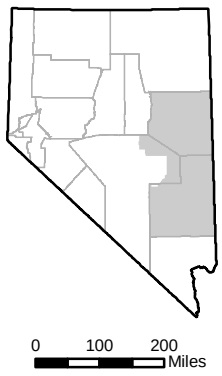
Table E-2 (Continued)

Allotment Name	Map Unit Number[1]	Allotment Number	Public Acres	Season of Use	Total Active Animal Unit Months[2]
Wild Horse	225	11017	18,014	3/1 to 2/28	315
Total			**3,247,411**		**120,665**

[1] Map unit number refers to livestock grazing allotments shown on **Map 19**.
[2] There are a total of approximately 190,000 suspended animal unit months. These are a matter of record at the Ely District Office.
[3] Eight allotments transferred to the BLM through the White Pine County Conservation, Recreation, and Development Act of 2006; availability of two of these allotments for livestock grazing will be determined.
[4] Allotments that had acres, animal unit months, or season of use adjusted, as a result of the 2000 Caliente MFP Amendment for Management of Desert Tortoise Habitat.
[5] Occur outside the planning area.
[6] Southern portion of Terry allotment has a season-of-use of 11/1 to 3/15 (critical desert tortoise habitat).

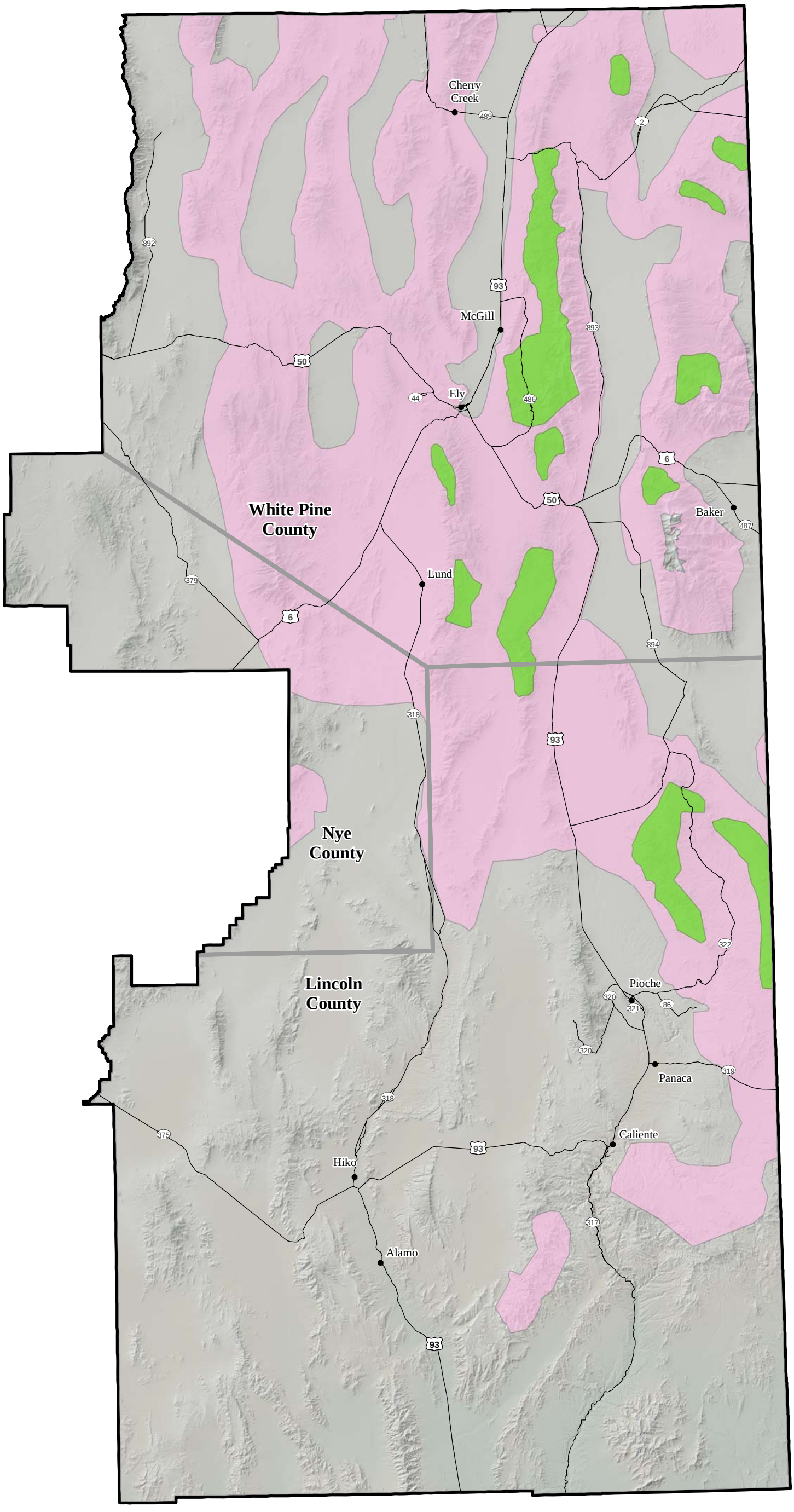
APPENDIX F
MAPS

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Elk crucial summer habitat
- Elk habitat



N

0 8 16
Miles

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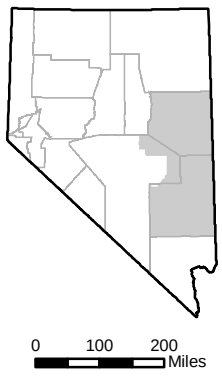
Ely District ROD/Approved RMP

Map 3

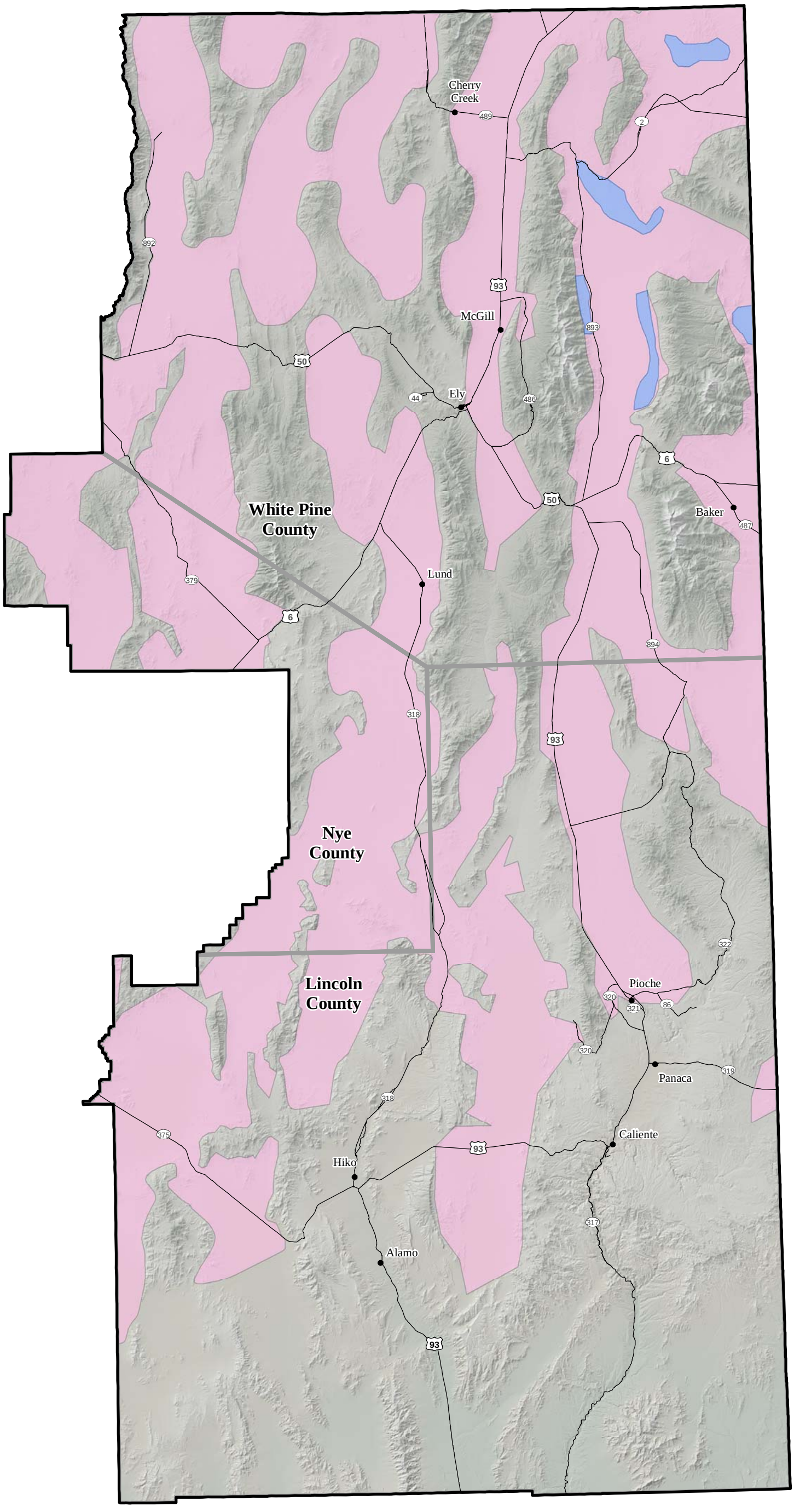
Elk Range

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Pronghorn crucial winter habitat
- Pronghorn habitat



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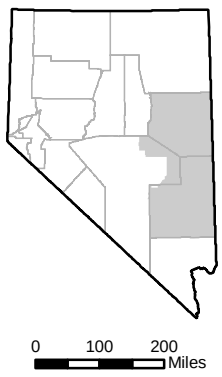
Map 4

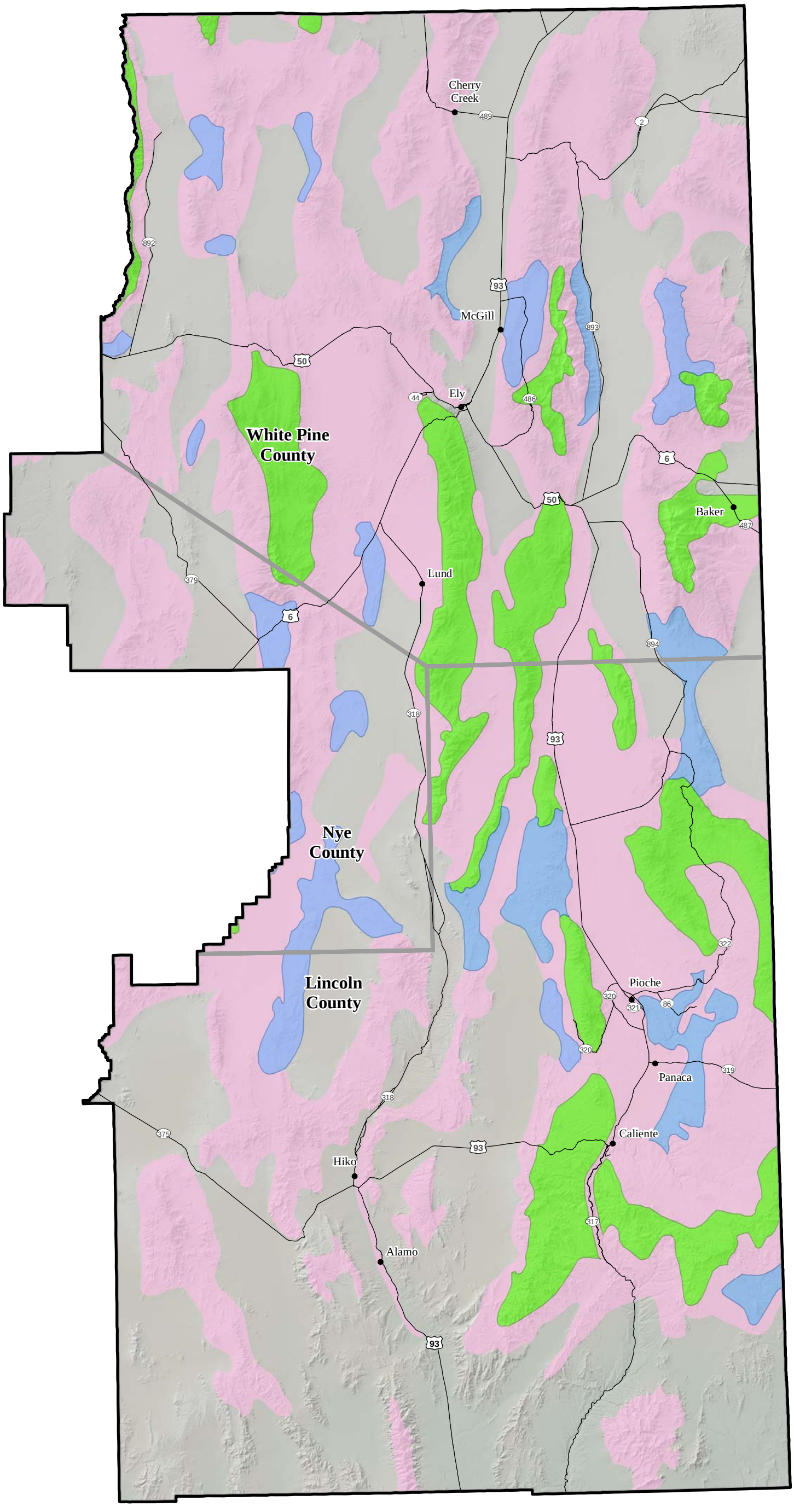
Pronghorn Range

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Mule deer crucial winter habitat
- Mule deer crucial summer habitat
- Mule deer habitat



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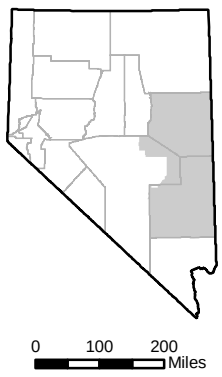
Map 5

Mule Deer Range

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Rocky Mountain bighorn occupied range
- Desert bighorn occupied range
- Rocky Mountain bighorn unoccupied range
- Desert bighorn unoccupied range

N

0 8 16 Miles

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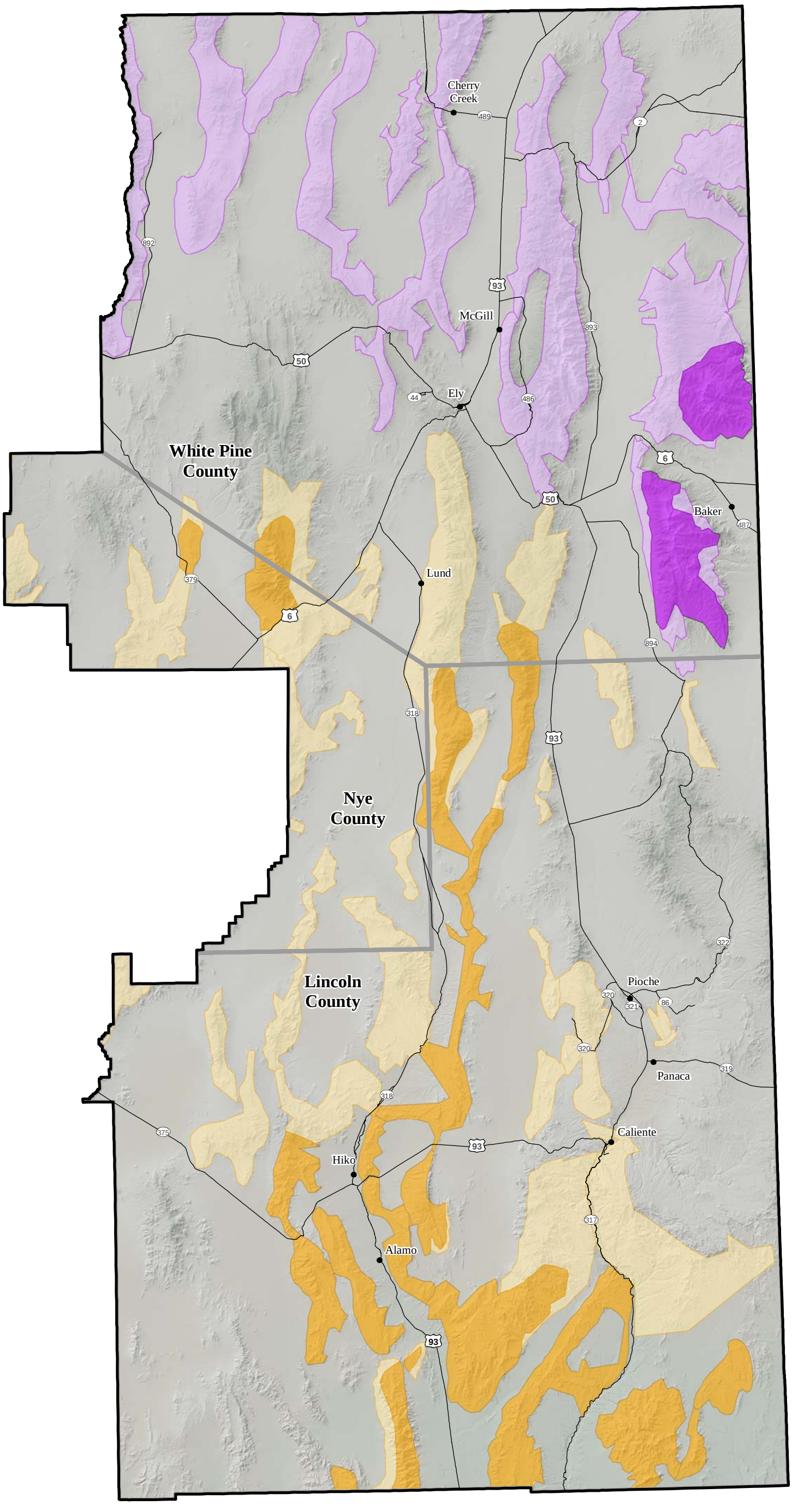

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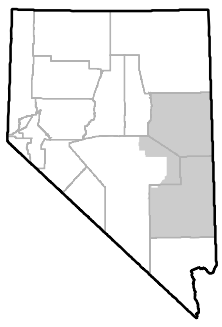
Map 6

Bighorn Sheep Range

Regional View



0 100 200 Miles

Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Desert tortoise habitat
- Desert tortoise ACECs
- Desert tortoise critical habitat

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 8 16 Miles

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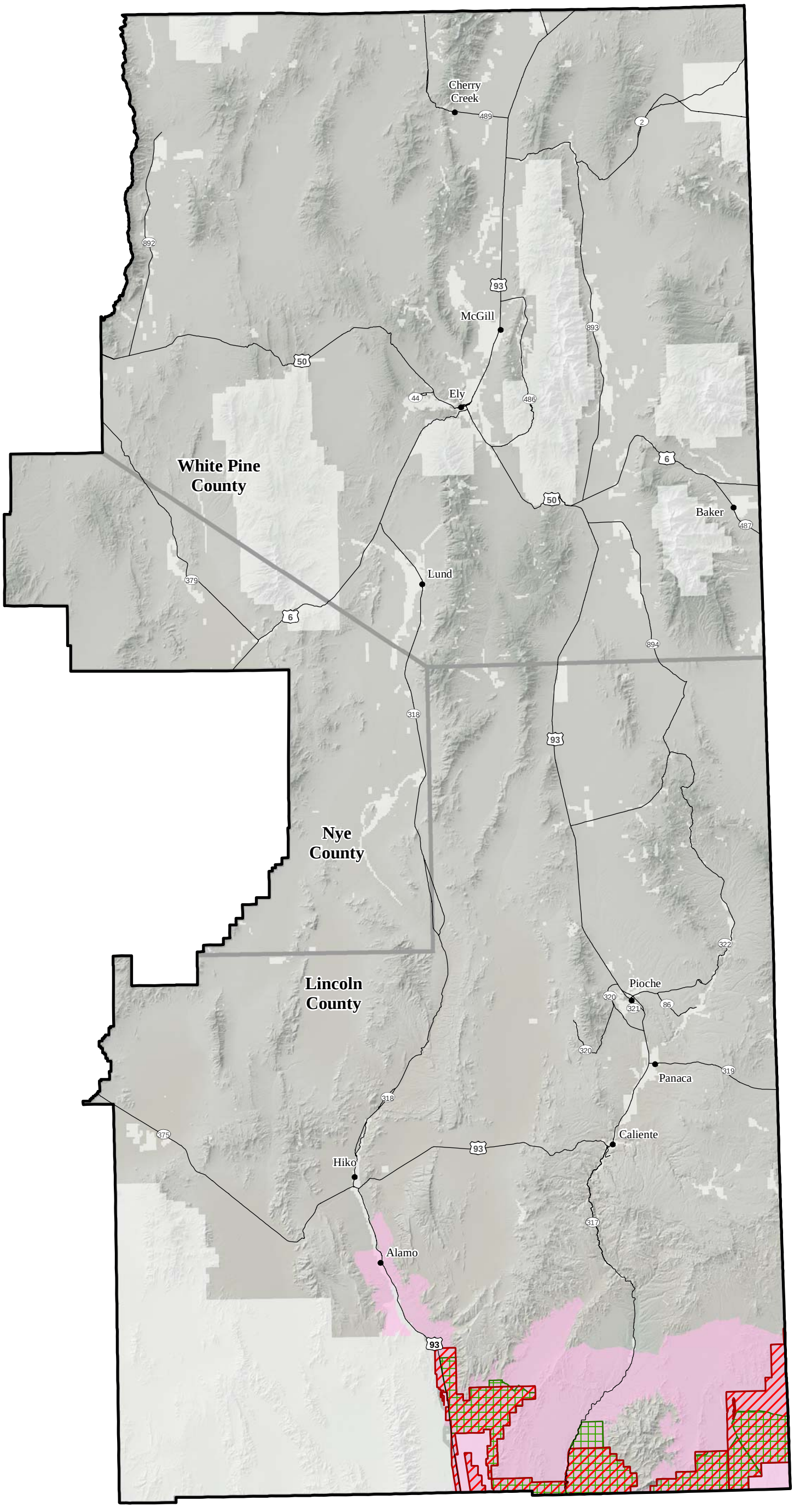
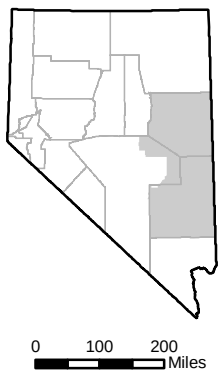


Ely District ROD/Approved RMP

Map 7

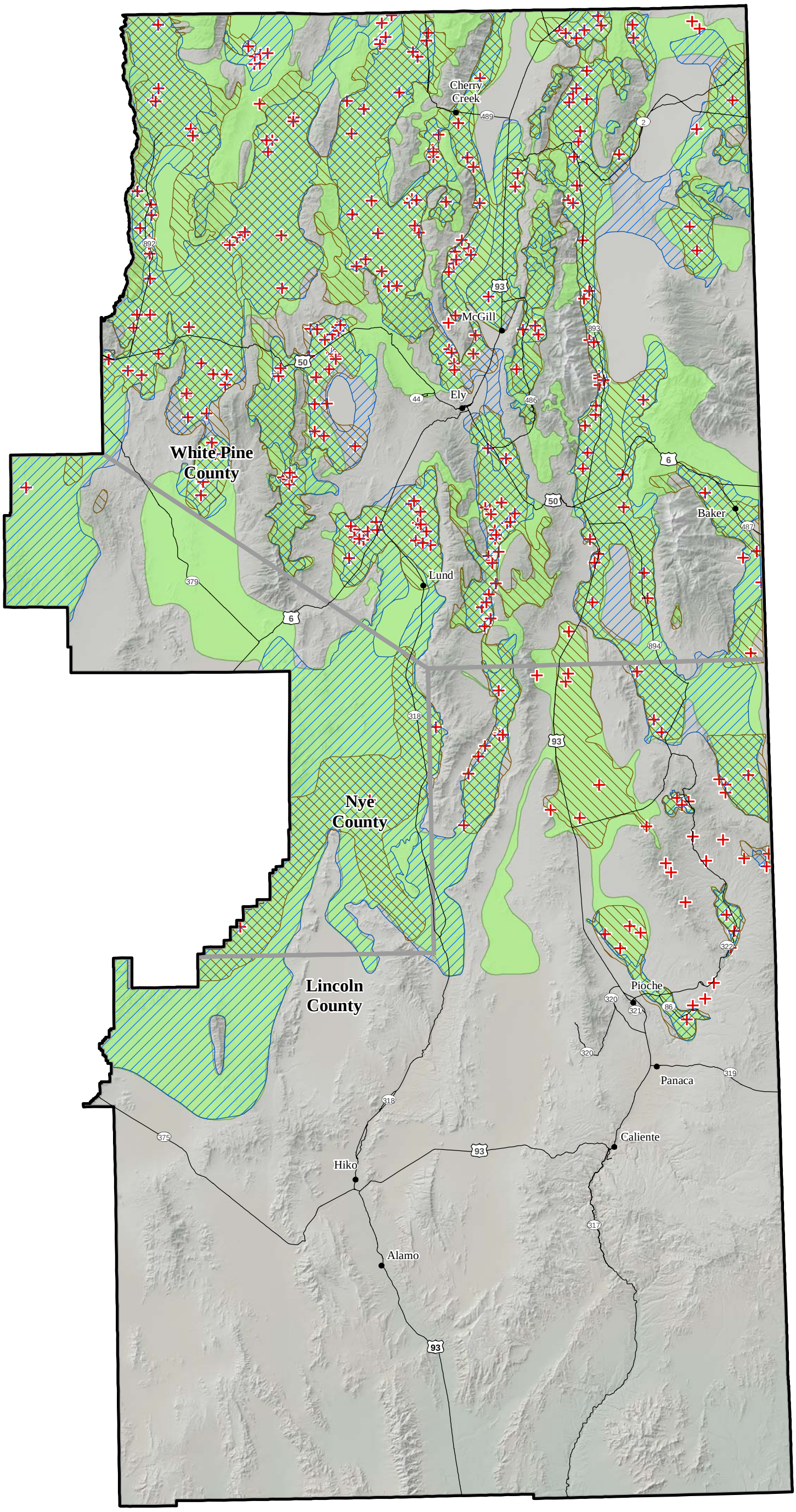
Desert Tortoise Habitat

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Greater sage-grouse lek
- Greater sage-grouse summer range
- Greater sage-grouse winter range
- Greater sage-grouse nesting range



N

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Miles

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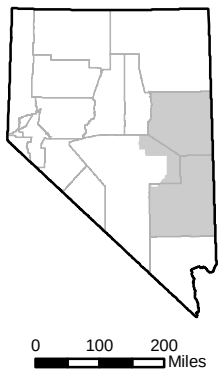
Map 8

Greater Sage-grouse Range and Leks

Regional View

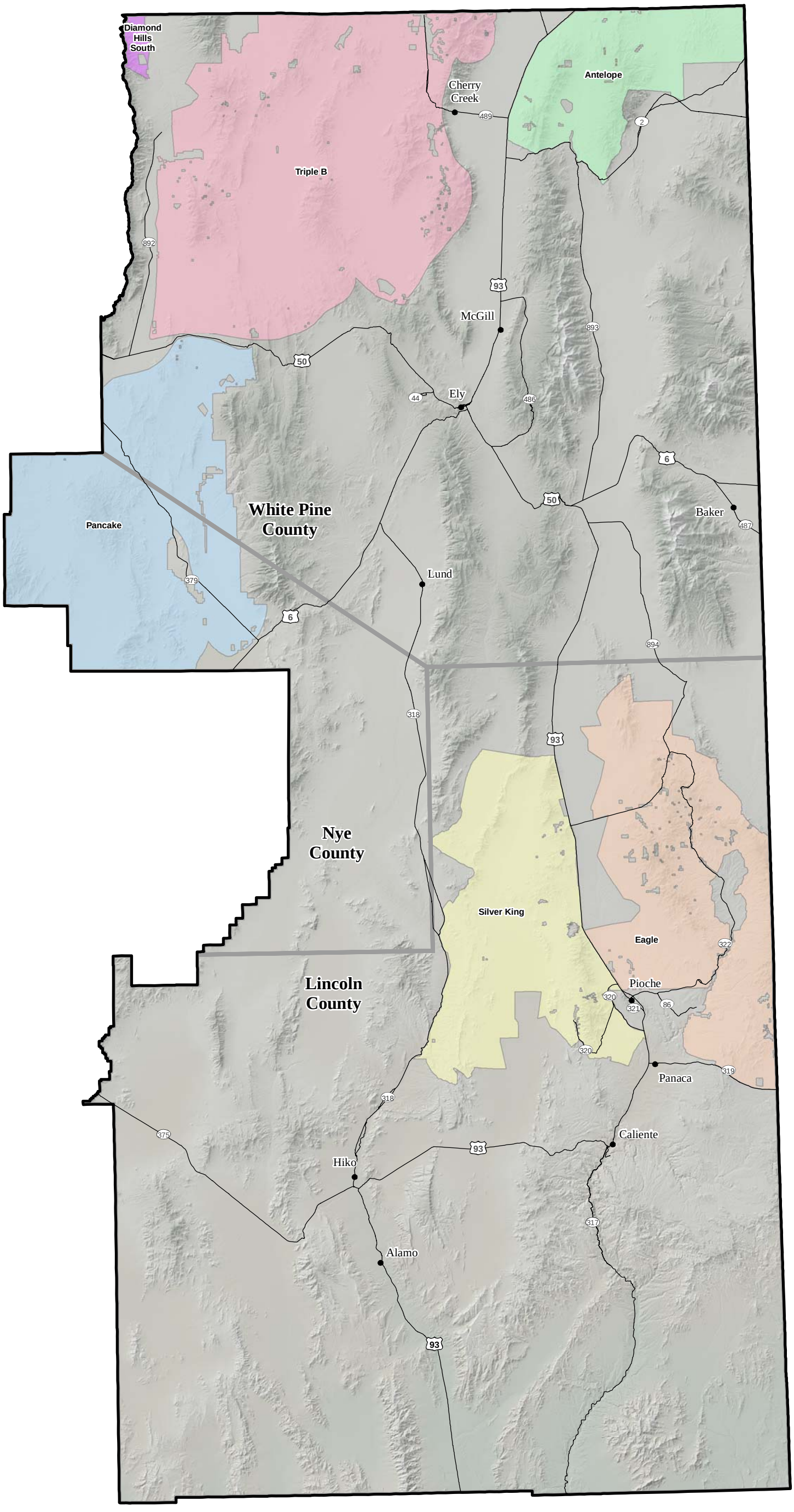


Legend

- Cities and Towns
- Roads
- County boundary

Wild horse herd management areas

- Antelope
- Diamond Hills South
- Eagle
- Pancake
- Silver King
- Triple B



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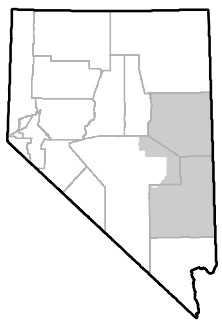
Map 9

Wild Horse Herd Management Areas

Regional View



0 100 200 Miles

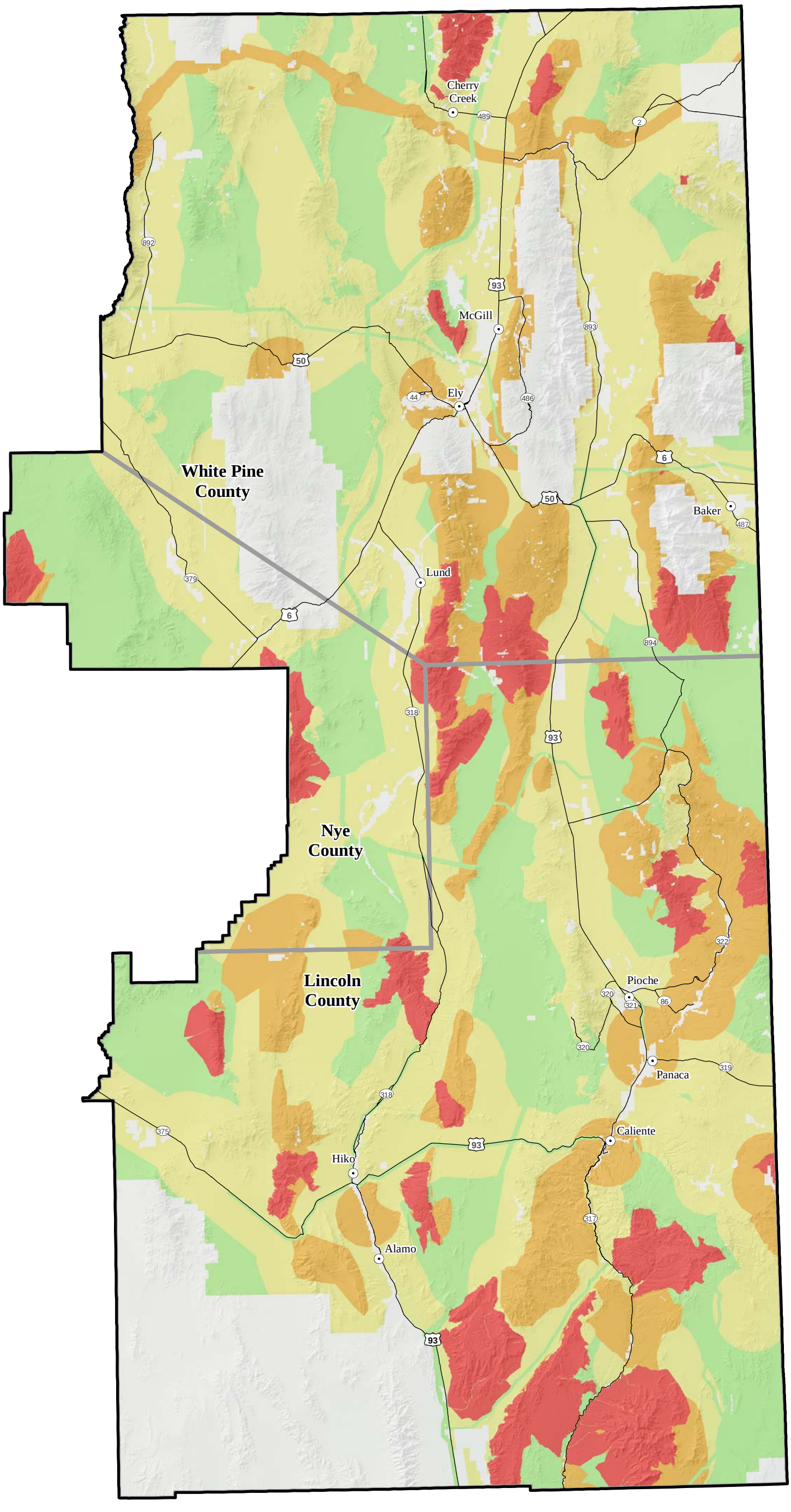
Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*

Visual Resources Management Classes

- Class I
- Class II
- Class III
- Class IV

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.



N

0 8 16 Miles

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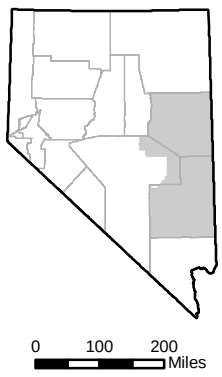
Map 10

Visual Resources Management Classes

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Lands available for disposal

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 8 16
Miles

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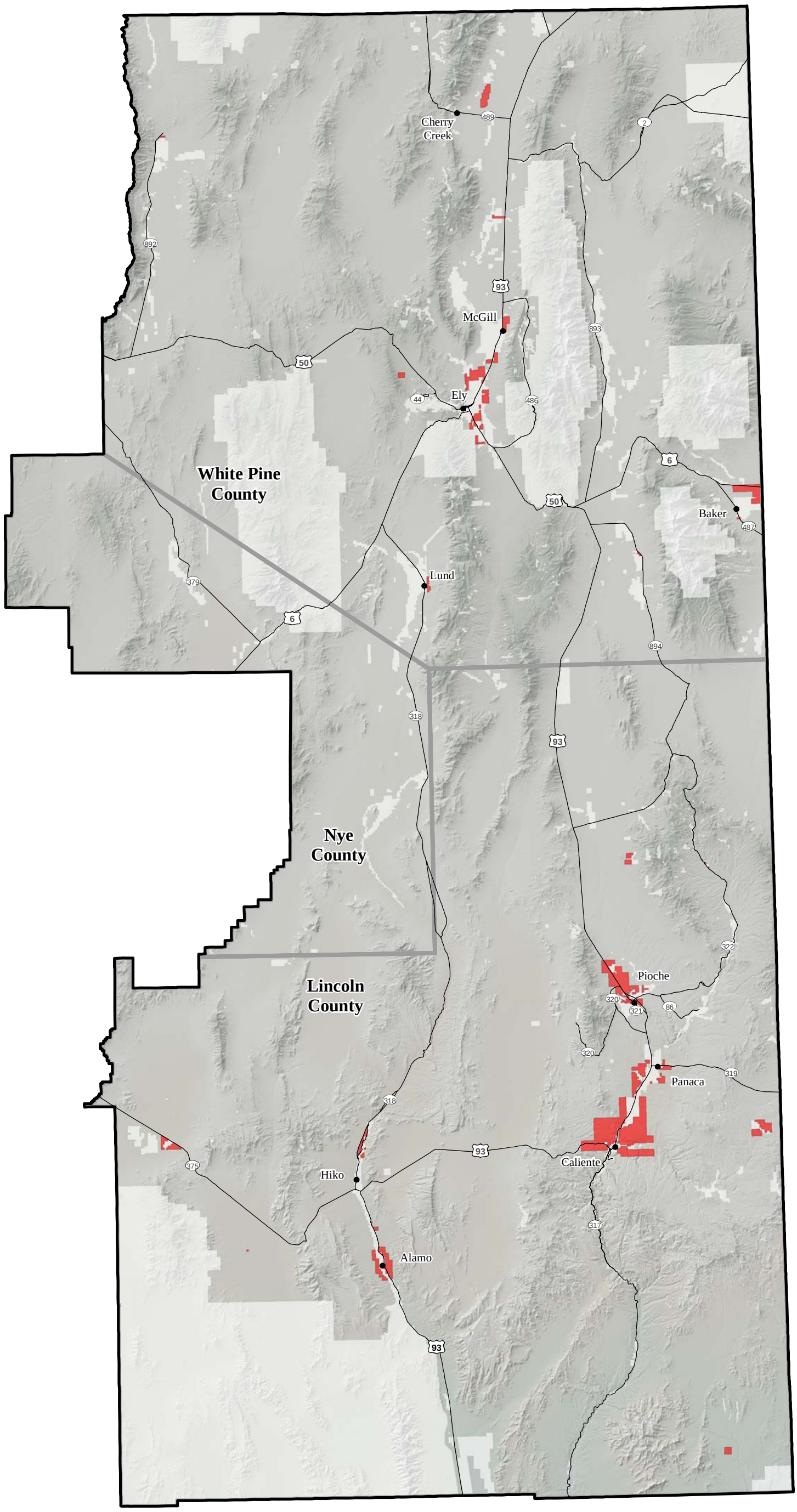
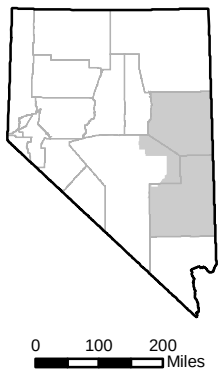


Ely District ROD/Approved RMP

Map 11

Lands Available for Disposal

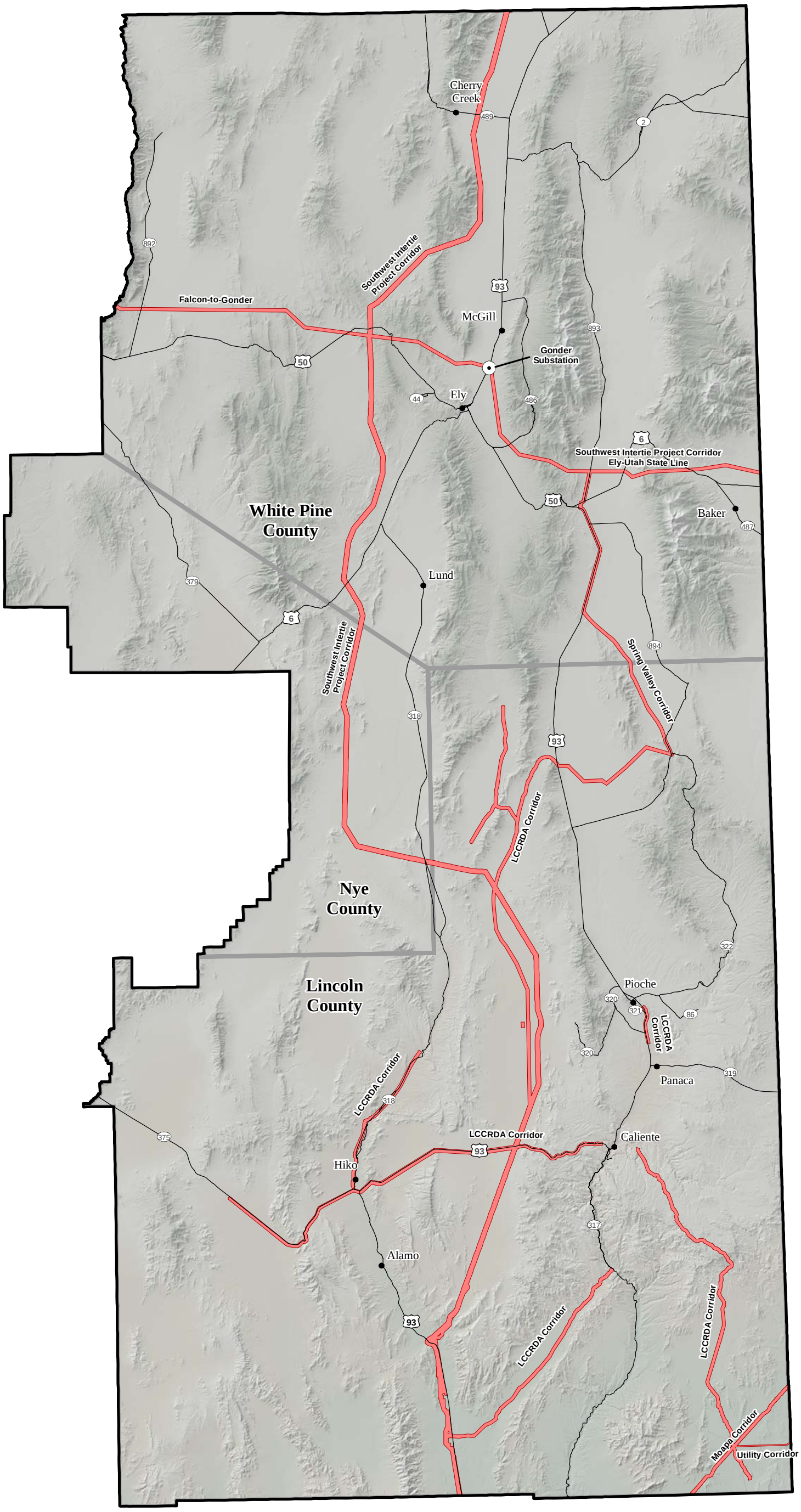
Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Proposed utility corridor

Note:
LCCRDA - Lincoln County Conservation, Recreation, and Development Act



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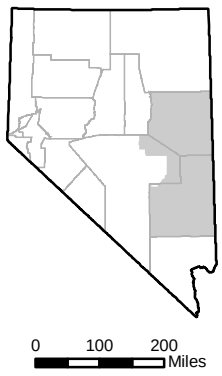
Map 12
Designated Utility Corridors

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Areas of moderate to high wind energy potential

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

Source:
National Renewable Energy Laboratory 2003. Annual average wind resource potential for the state of Nevada, United States at a 50 meter height.

N

0 8 16
Miles

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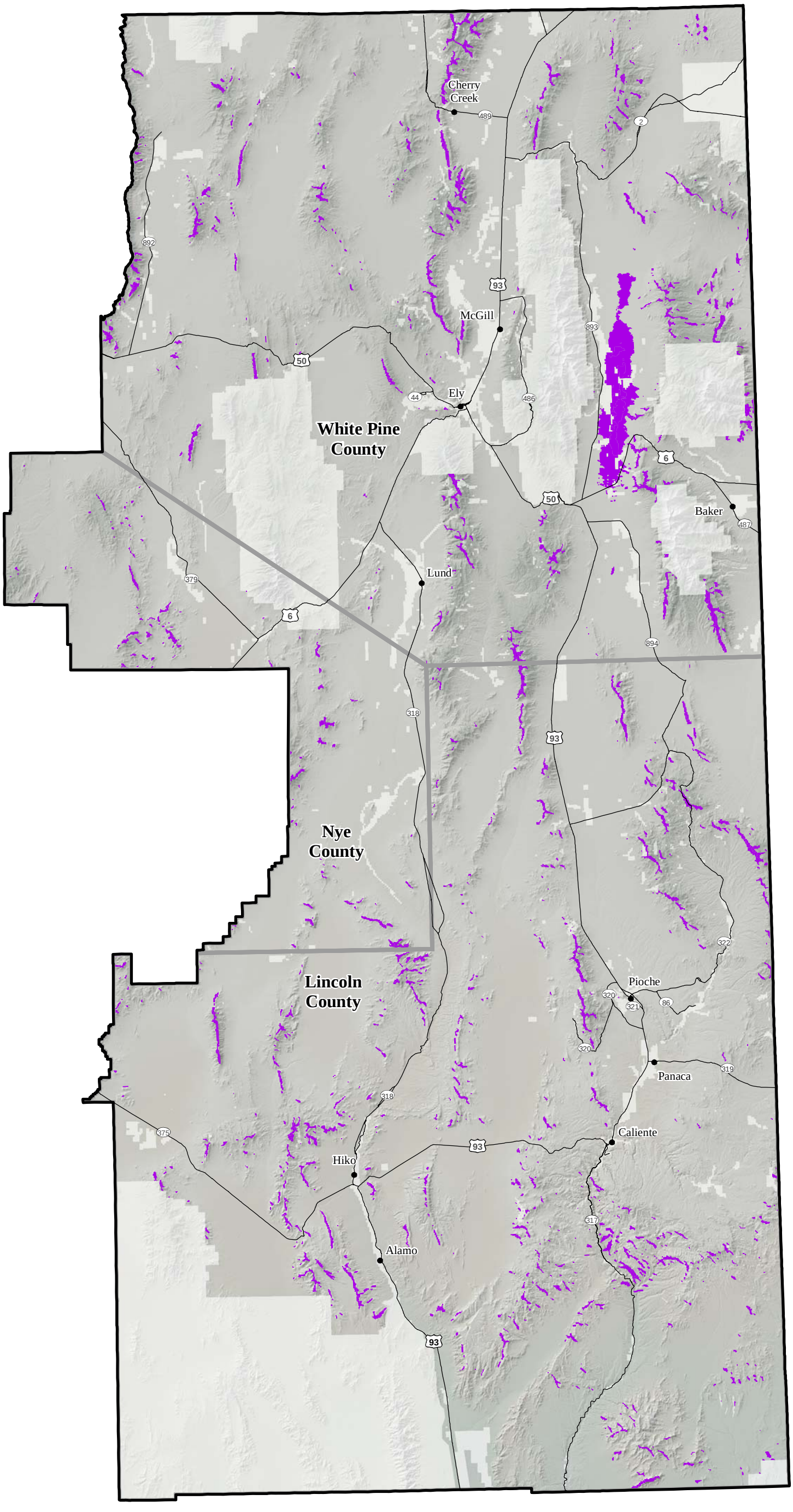

Ely District ROD/Approved RMP

Map 13

Areas of Moderate to High Wind Energy Potential

Regional View

0 100 200 Miles

Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Areas of moderate to high solar energy potential

Note:
* All land not shown as non-BLM administered land is BLM-administered land.

Source:
National Renewable Energy Laboratory 2004. Solar resource levels greater than 6.75 kWh/m2/day, slope less than 3%.

N

0 8 16 Miles

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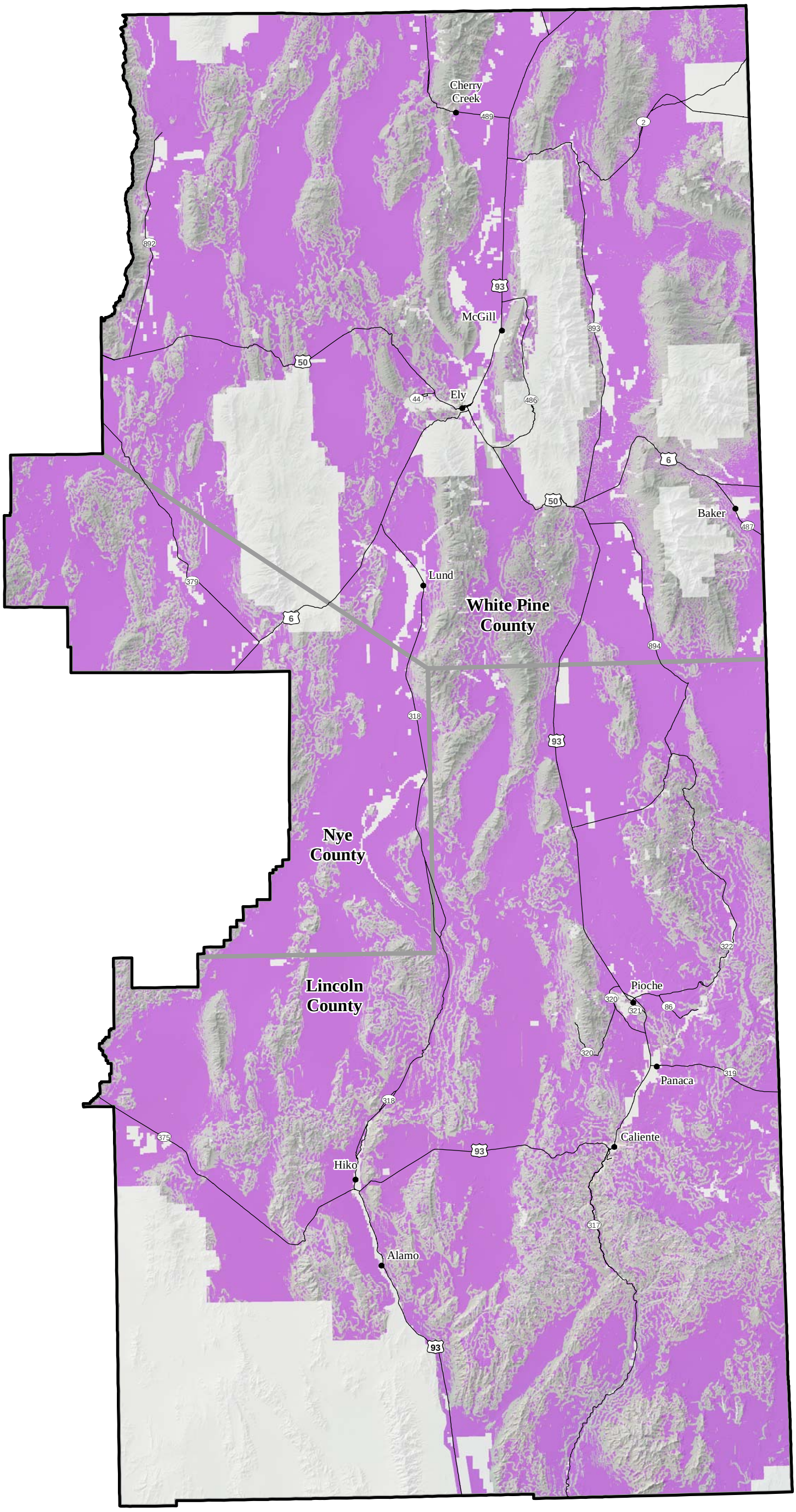
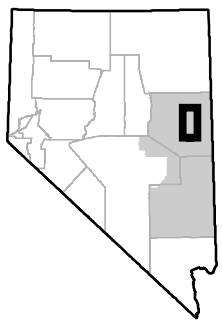


Ely District ROD/Approved RMP

Map 14

Areas of Moderate to High Solar Energy Potential

Regional View



0 100 200 Miles

Legend

- Cities and towns
- Roads

Duck Creek Transportation Plan

- Closed
- Private
- Non-motorized vehicles
- Open

Land Status

- Bureau of Indian Affairs
- BLM
- Private
- State of Nevada
- U.S. Forest Service

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 1.5 3 Miles

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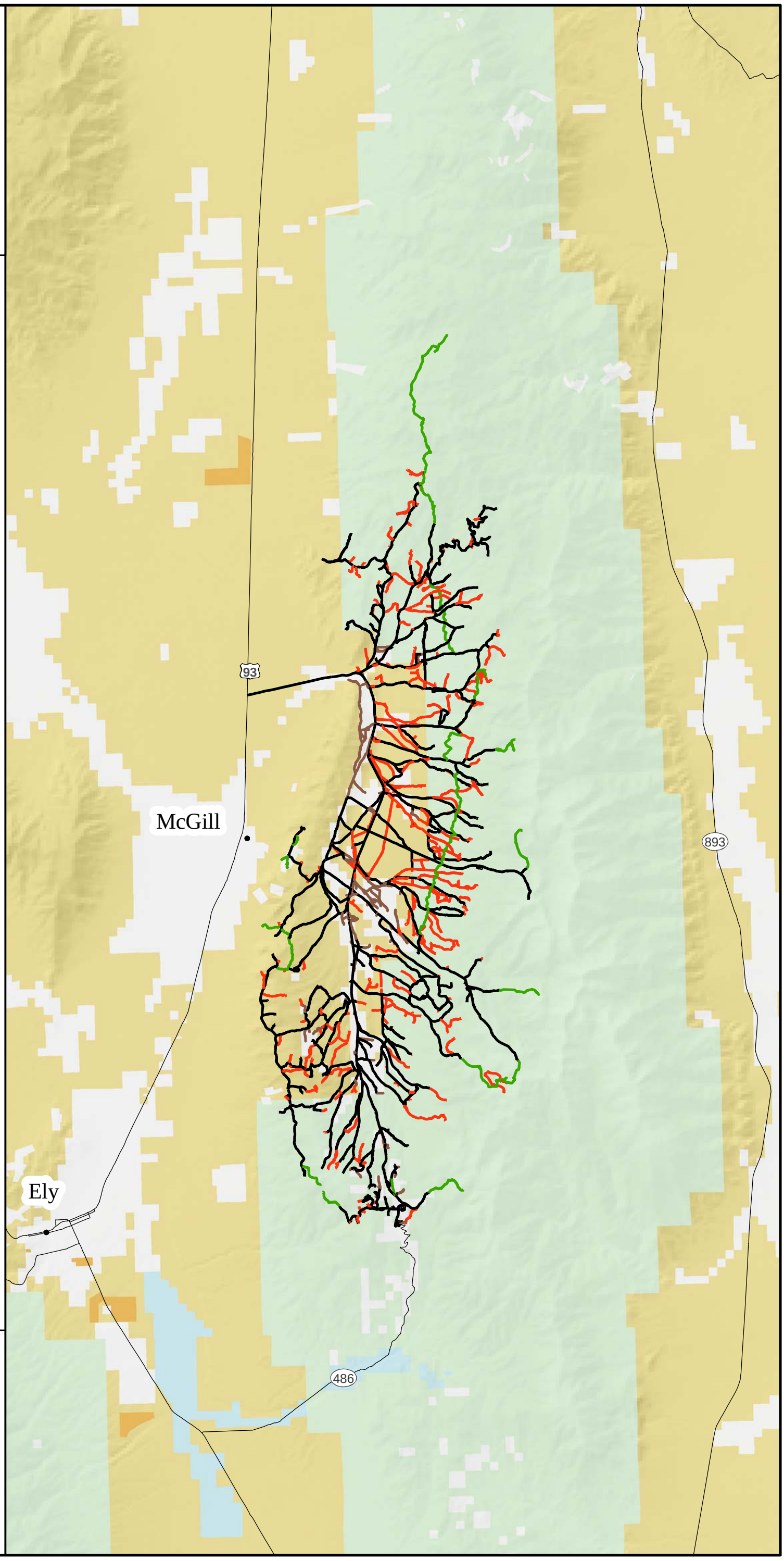
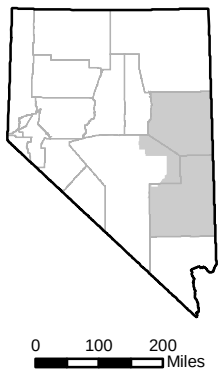


Ely District ROD/Approved RMP

Map 15

Duck Creek Transportation Plan

Regional View



Legend

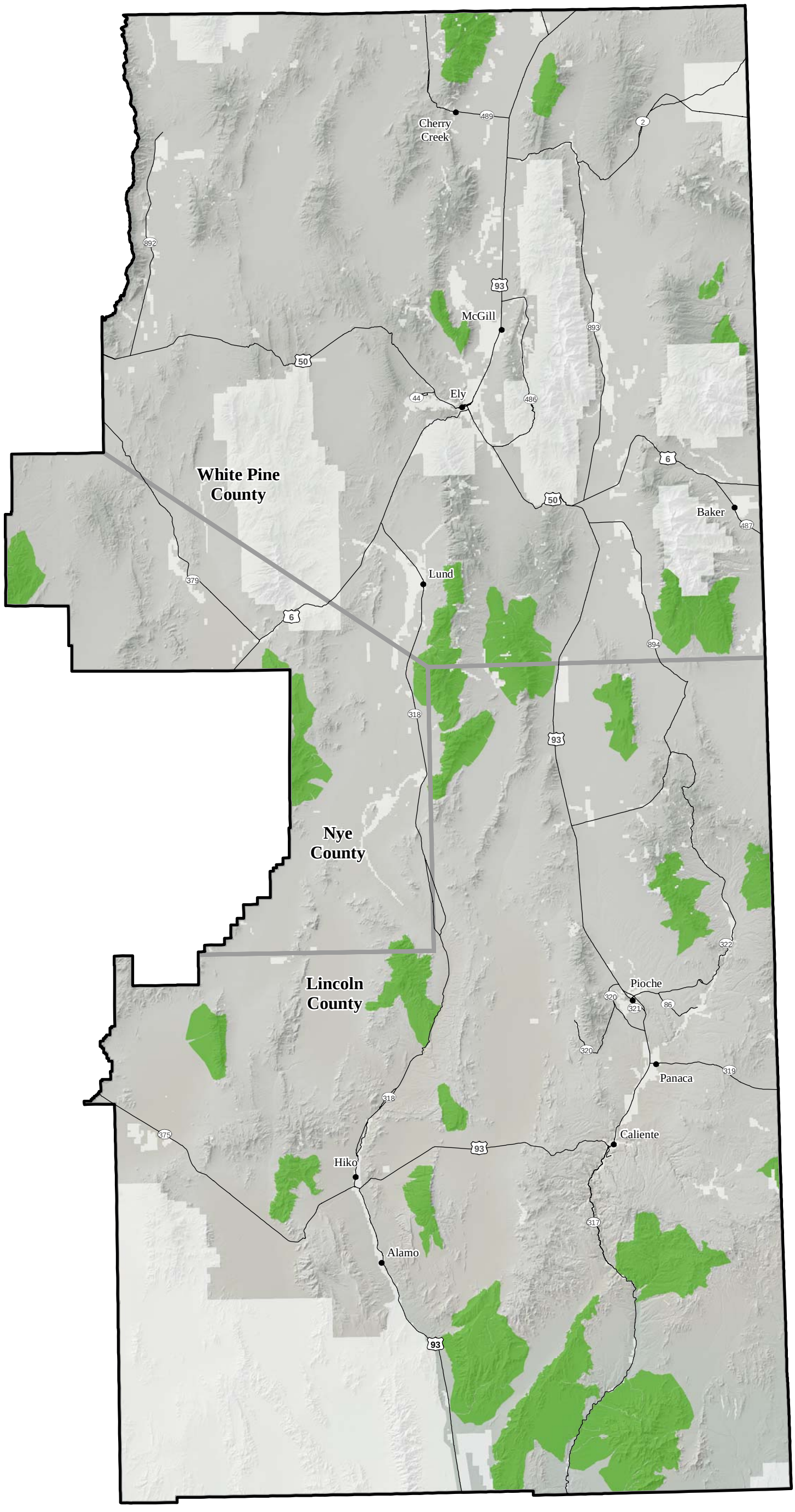
- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Areas closed to off-highway vehicle use**

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

** The remainder of the decision area would limit off-highway vehicle use to designated roads and trails.

N

0 8 16
Miles



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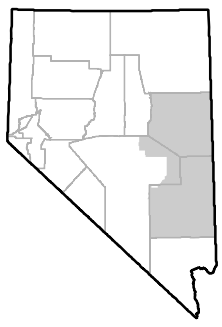
Ely District ROD/Approved RMP

Map 16

Off-highway Vehicle Use Designations

Regional View



0 100 200 Miles

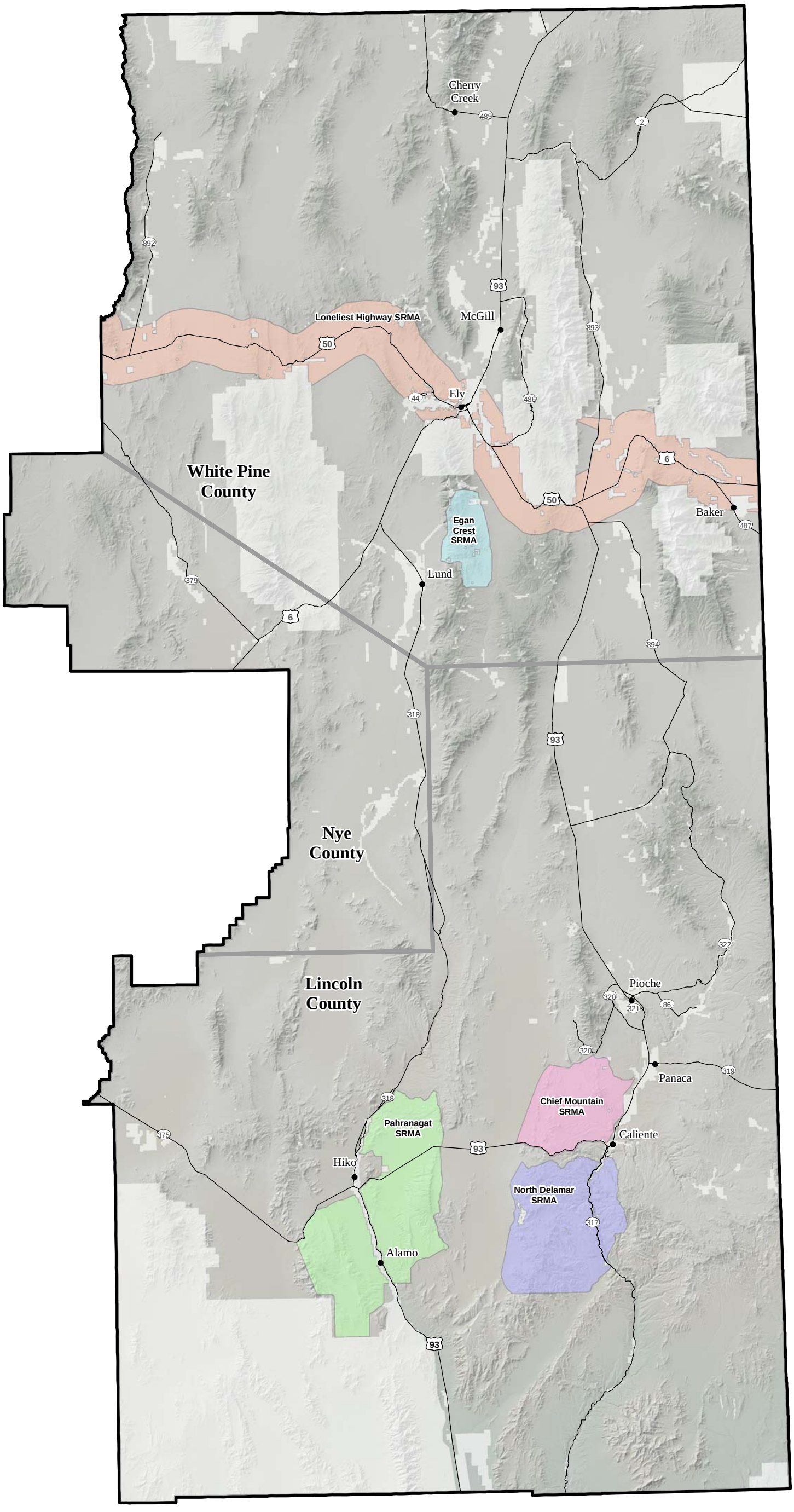
Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*

Special recreation management areas (SRMAs)

- Chief Mountain
- Egan Crest
- Loneliest Hway
- North Delamar
- Pahranagat

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.



N

0 8 16 Miles

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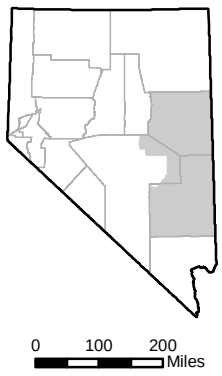
Map 17

Special Recreation Management Areas

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*

Motorcycle special recreation permit (SRP) areas

- Alamo
- Caliente
- Ely
- Pioche

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 8 16
Miles

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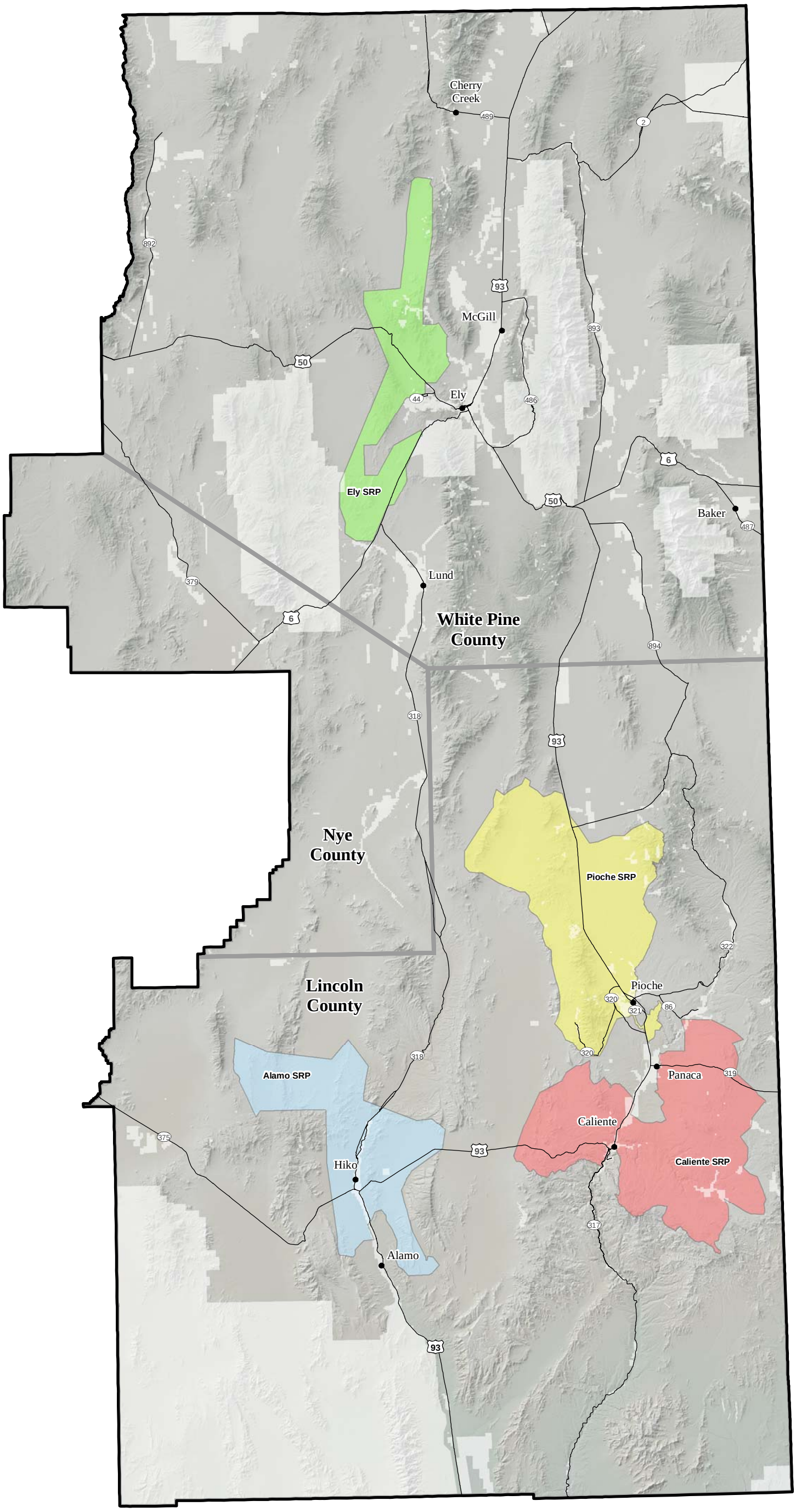

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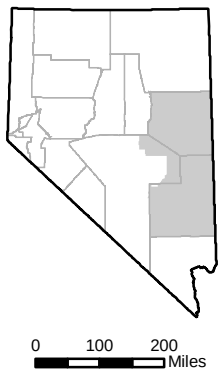
Map 18

Motorcycle Special Recreation Permit Areas

Regional View



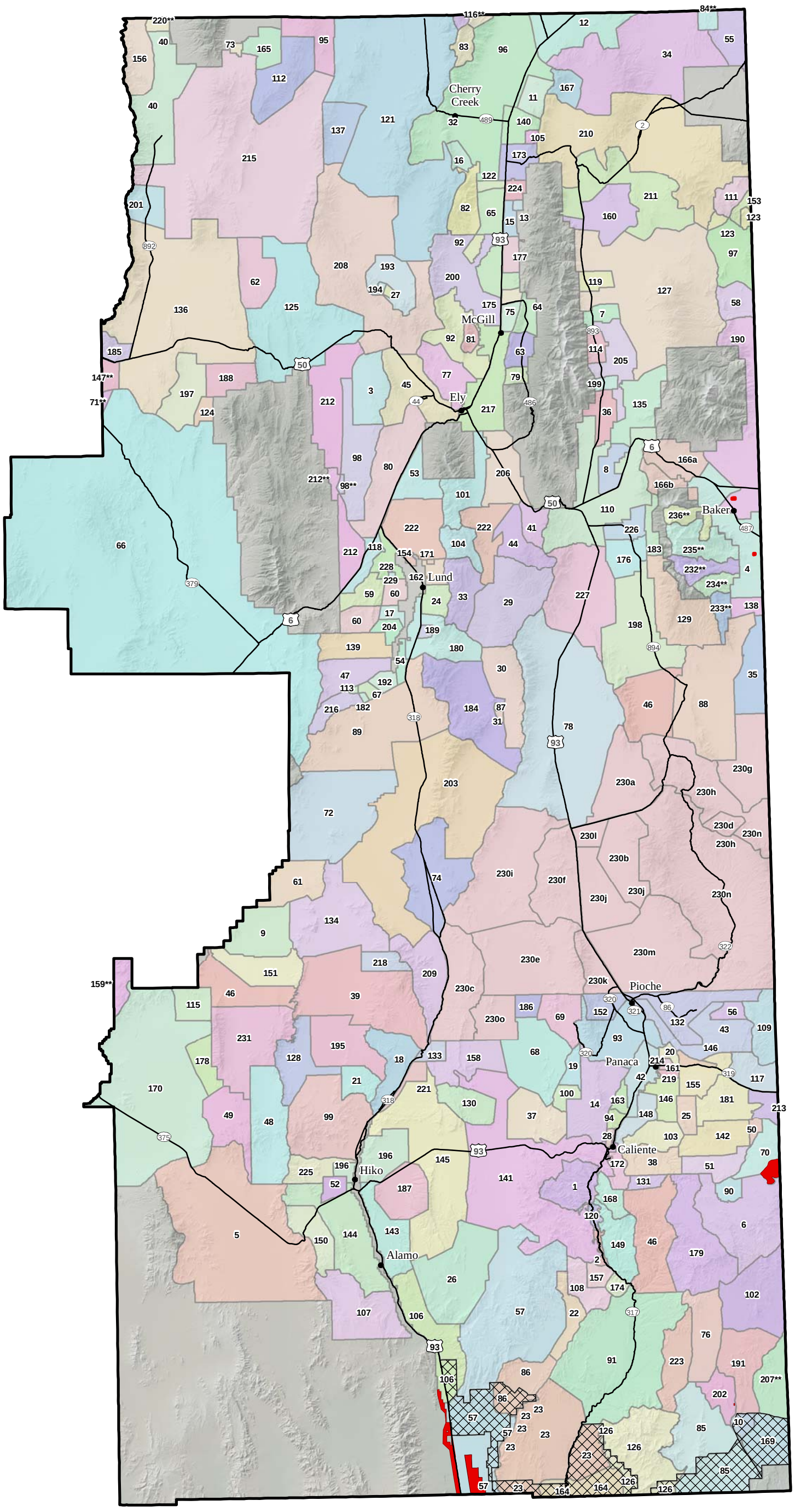
Legend

- Cities and towns
- Roads
- 46 — Grazing allotment boundary (a variety of colors are used to aid in discerning boundaries between allotments)
- Areas unavailable for livestock grazing associated with desert tortoise ACECs
- Areas unavailable for livestock grazing.

Note: Grazing allotments names are keyed by number to tables in Appendix F.

These numbers have no relation to BLM grazing allotment numbers.

Note:
** Grazing allotments that occur within the planning area, but are not administered by the Ely District.



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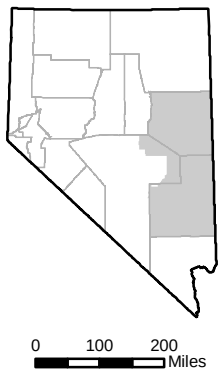
Map 19

Livestock Grazing Allotments and Areas Unavailable for Livestock Grazing

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered Land

Fluid Minerals Management

- Closed
- No surface occupancy
- Open, subject to lease notice
- Open, subject to surface use and/or timing restrictions

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 8 16
Miles

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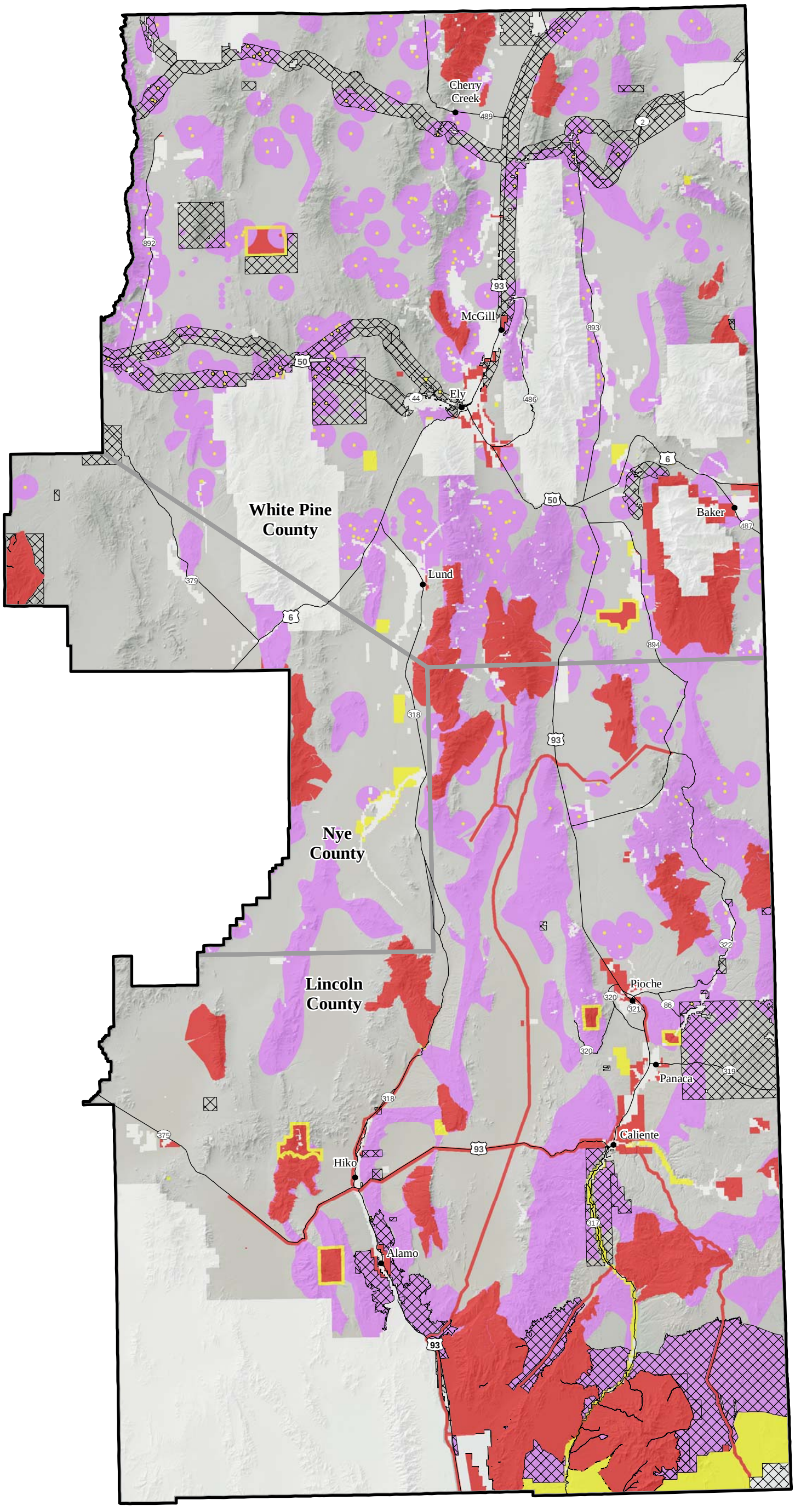

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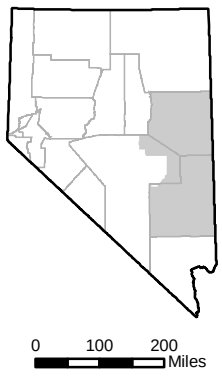
Map 20

Fluid Leasable Minerals

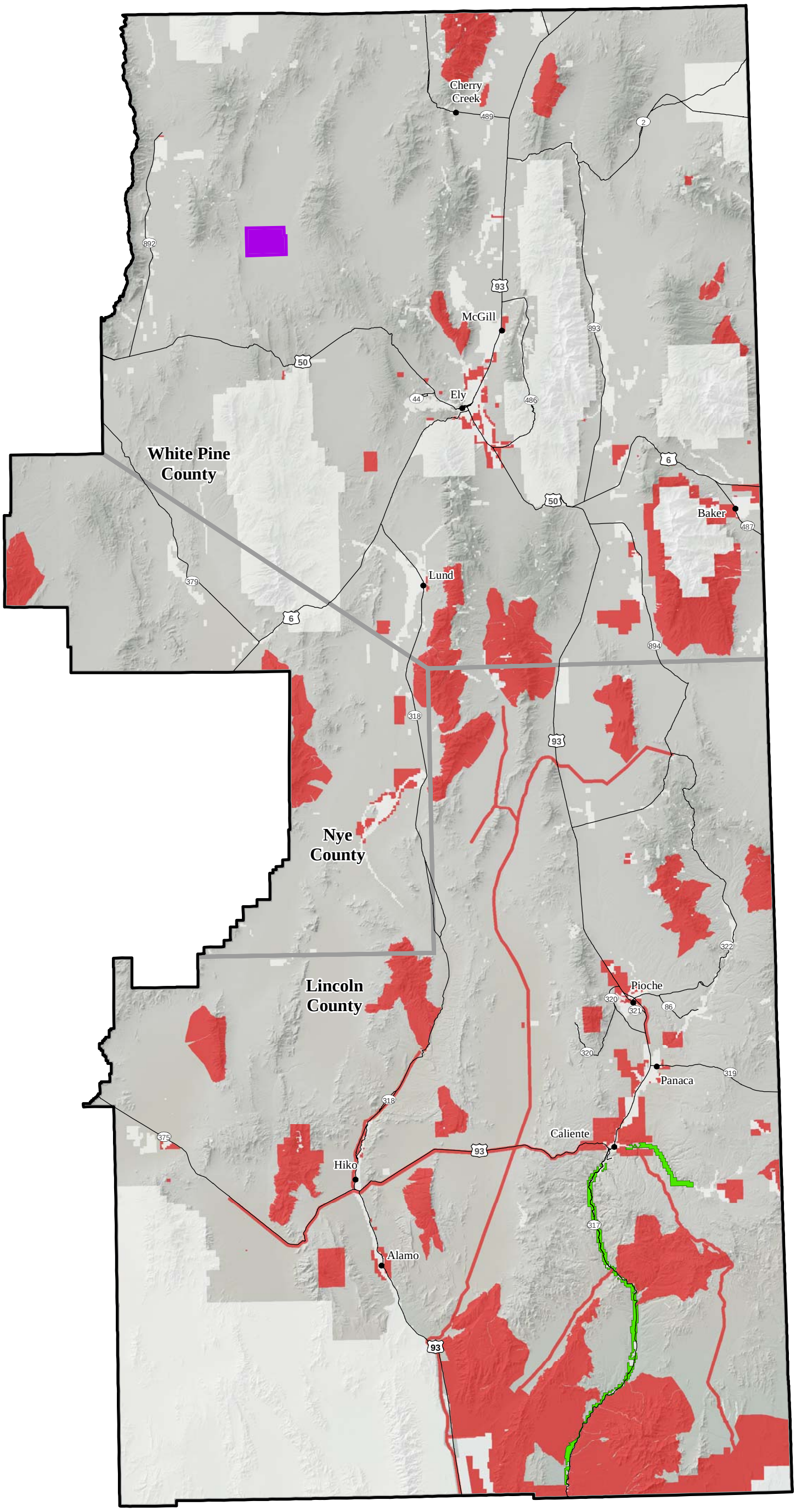
Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered land*
- Areas closed to solid leasable and locatable minerals, and to mineral materials
- Areas closed only to solid leasable and locatable minerals
- Areas closed only to mineral materials

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.



N

0 8 16
Miles

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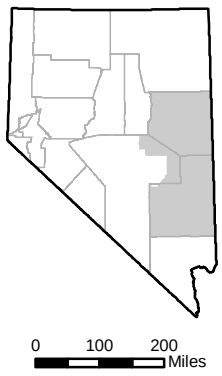
Map 21

Areas Closed to Solid Leasable and Locatable Minerals and to Mineral Materials

Regional View



Legend

- Cities and towns
- Roads
- County boundary

Fire Management Units**

- Fire use
- Non-fire use

Note:
** Numbers match the last two digits of the fire management unit number.

N

0 8 16
Miles

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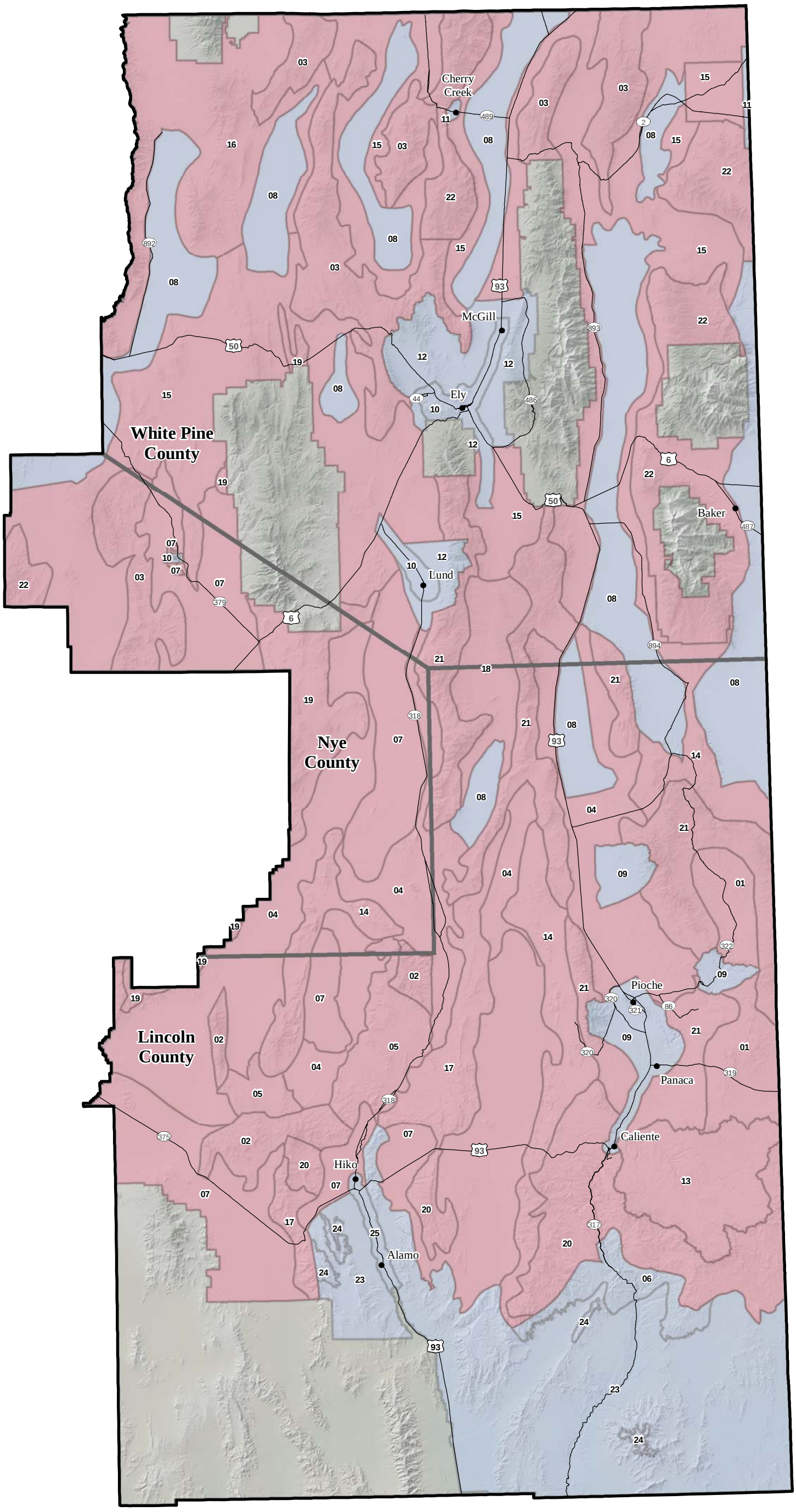

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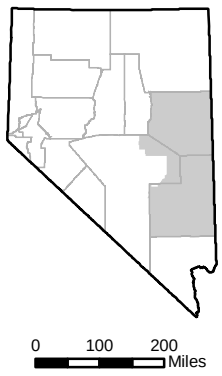
Map 22

Fire Management Units

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Non-BLM-administered Land
- Pony Express Trail
- Wilderness
- Wilderness Study Area
- Areas of Critical Environmental Concern (ACECs)
- Archaeological District
- Rockhounding area

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 8 16
Miles

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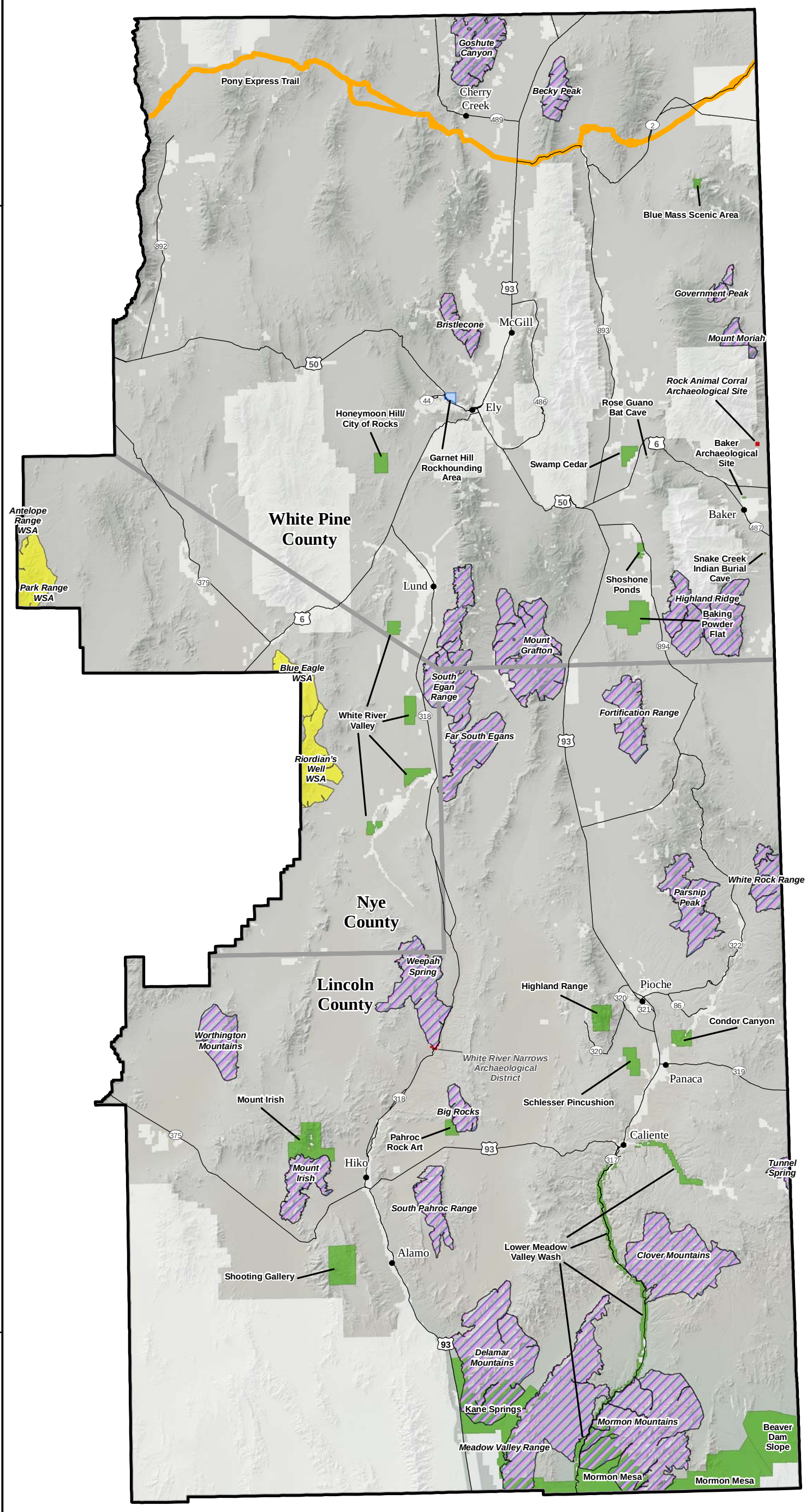

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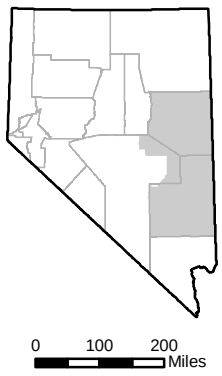
Map 23

Special Designations

Regional View



Legend

- Cities and towns
- Roads
- County boundary
- Mt. Wilson Back-country byway
- Silver State Trail Back-country byway
- Rainbow Canyon Back-country byway
- Non-BLM-administered land

Note:
* All land not shown as non-BLM-administered land is BLM-administered land.

N

0 8 16
Miles

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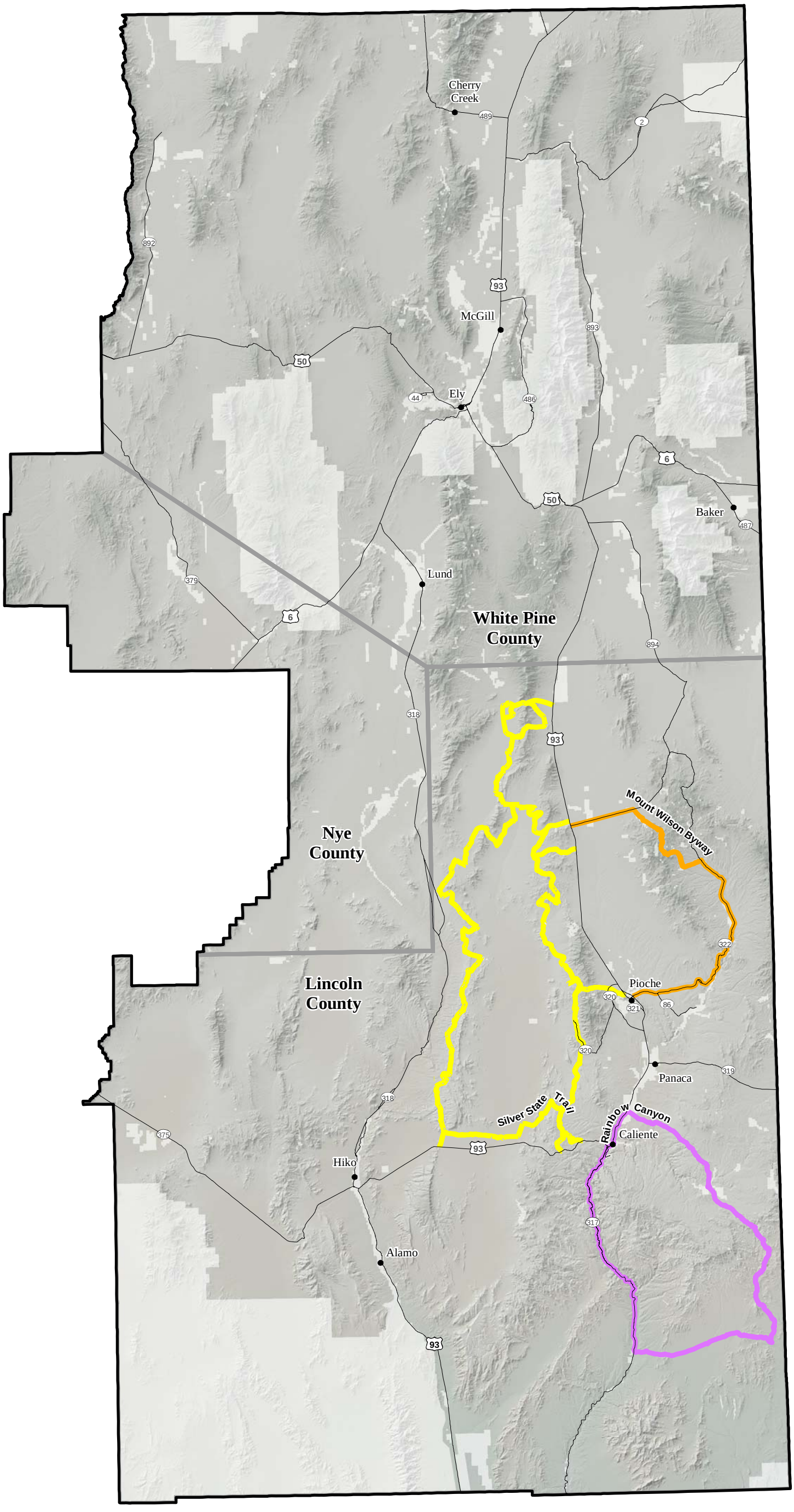

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Map 24

Back-country Byways