

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

**Environmental Assessment
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Delamar Mountains Wilderness

Meadow Valley Range Wilderness

Mormon Mountains Wilderness



Sunflower Mountain in Meadow Valley Range Wilderness

**Wilderness Management Plan
And
Environmental Assessment**

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Introduction

Background

The United States Congress established the National Wilderness Preservation System to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States. Wilderness designation is intended to preserve and protect certain lands in their natural state. Only Congress, with Presidential approval, may designate areas as Wilderness. The Wilderness Act of 1964 defines wilderness characteristics, the uses of wilderness, and the activities prohibited within its boundaries.

Wilderness areas provide a contrast to lands where human activities dominate the landscape. No buffer zones are created around wilderness to protect them from the influence of activities on adjacent land. Wilderness areas are managed for the use and enjoyment of the American people in a manner that will leave them unimpaired for future use and enjoyment as wilderness, for their protection, preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

Scope of the Wilderness Management Plan

This Wilderness Management Plan (WMP) provides the primary management guidelines for the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas. Given their proximity, comparable natural resources, and similar management issues, it is appropriate to incorporate the administration of the three areas into a single ten year Plan. This Plan also addresses appropriate actions immediately adjacent to the wilderness areas including wilderness access and information provided to the public.

Wilderness characteristics are cumulatively identified by the Wilderness Act of 1964 as untrammeled (i.e., unrestrained, unhindered) by man, natural and undeveloped, having outstanding opportunities for solitude or primitive, unconfined forms of recreation, and the inclusion of supplementary values. This Wilderness Management Plan preserves the areas' characteristics by:

- Identifying the conditions and opportunities for which the wilderness areas would be managed.
- Creating specific guidelines for managing resources and activities existing in the wilderness.
- Identifying management needs outside of, and immediately adjacent to the wilderness areas including signing, staging areas, and access points.

The Wilderness Management Plan, Part 1 of this document, contains current comprehensive descriptions of the wilderness areas and proposed management actions and guidelines that relate to specific wilderness management categories. Part 2 is an Environmental Assessment fully describing and analyzing potential impacts relating to proposed management actions and guidelines and considered alternatives.

This Plan is in conformance with the goals, objectives, and decisions analyzed within the scope of the Ely District Approved Resource Management Plan (2008) and the Las Vegas Resource Management Plan and Final Environmental Impact Statement (1998).

This WMP is in conformance with the decisions analyzed within the Wilderness Disturbance Reclamation Environmental Assessment (NV-040-05-010).

Consistency with BLM Land Use Plans

The proposed action and alternative action are consistent with the goals, objectives, and decisions of the following Land Use Plans:

- Mormon Mesa Desert Wildlife Management Area Conservation Management Strategy, Clark Co, NV (2007).
- Master Plan for Lincoln County Nevada (2007).

Compliance with Laws, Statutes, and Regulations

The proposed action and alternative action are in compliance with the following laws:

- The Wilderness Act of 1964 (16 U.S.C. §§ 1131-1136, September 3, 1964, as amended 1978).
- The Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996).
- The Lincoln County Conservation, Recreation and Development Act of 2004 (Public Law 108-424).
- The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994).
- The Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984, and 1988).
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d, June 8, 1940, as amended 1959, 1962, 1972, and 1978).
- Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989).
- Executive Order 13186—Responsibilities of Federal Agencies to Protect Migratory Birds (2001).
- Management of Designated Wilderness Areas (43 CFR Part 6300).
- Recreation Management Restrictions: Occupancy Stay Limitation (43 CFR 8365.1-2(a) and Federal Register Notice NV-930-4333-02).
- Unlawful Manner of Camping Near Water Hole (Nevada Revised Statute 503.660).

- Executive Order 13112: Invasive Species (1999).
- Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation (2007).
- National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470 as amended through 2000).
- Federal Property and Administrative Services Act of 1949 (40 U.S.C. as amended through P.L. 106-580, Dec. 29, 2000).
- Archaeological Resources Protection Act of 1979, as amended (Public Law 96-95; 16 U.S.C. 470aa-mm).
- Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195).

Relationship to Policies and Guidelines

The proposed action and alternative action are in conformance with the following guidelines, manuals, and administrative laws:

- Management of Designated Wilderness Areas (BLM Manual 8560).
- Wilderness Management Plans (BLM Manual 8561).
- Grazing Guidelines (House Report No. 101-405, Appendix A).
- Wildlife Management Guidelines (House Report No. 101-405, Appendix B).
- BLM Emergency Stabilization and Rehabilitation Handbook H1742-1.

Wilderness Overview

The Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness Areas were added to the National Wilderness Preservation System by the Lincoln County Conservation, Recreation and Development Act of 2004 (Public Law 108-424, November 30, 2004; LCCRDA). The Delamar Mountains encompass 111,328 acres and ranges from 2300-6300 feet elevation; Meadow Valley Range includes 123,508 acres from 2100-5022 feet elevation; and Mormon Mountains contains 157,938 acres ranging in elevation from 2200-7414 feet. The Bureau of Land Management, Ely District Office, has sole management responsibility of the Delamar Mountains Wilderness. Management of the Meadow Valley Range and Mormon Mountains is shared between the Ely District Office and the Bureau of Land Management, Las Vegas Field Office. Approximately 13,000 acres exists within the Las Vegas Field Office. Existing conditions for each wilderness area are displayed in Maps 3 – 5 (Pages 10 – 12).

These wilderness areas are situated in close proximity to one another in southeastern Nevada, 50 to 75 miles north of Las Vegas. They are primarily within Lincoln County, except for southern portions of the Meadow Valley Range and Mormon Mountains, which lie in northeastern Clark County. State Highway 93 and Kane Springs Road, a bladed dirt road, provides relatively easy access to the west and southeastern portion of the Delamar Mountains, as well as the southern and northwestern portion of the Meadow Valley Range. The southern portion of the Mormon Mountains is accessed by I-15 exit 100, then proceeding on the Carp-Elgin Road. Additional access from the north includes

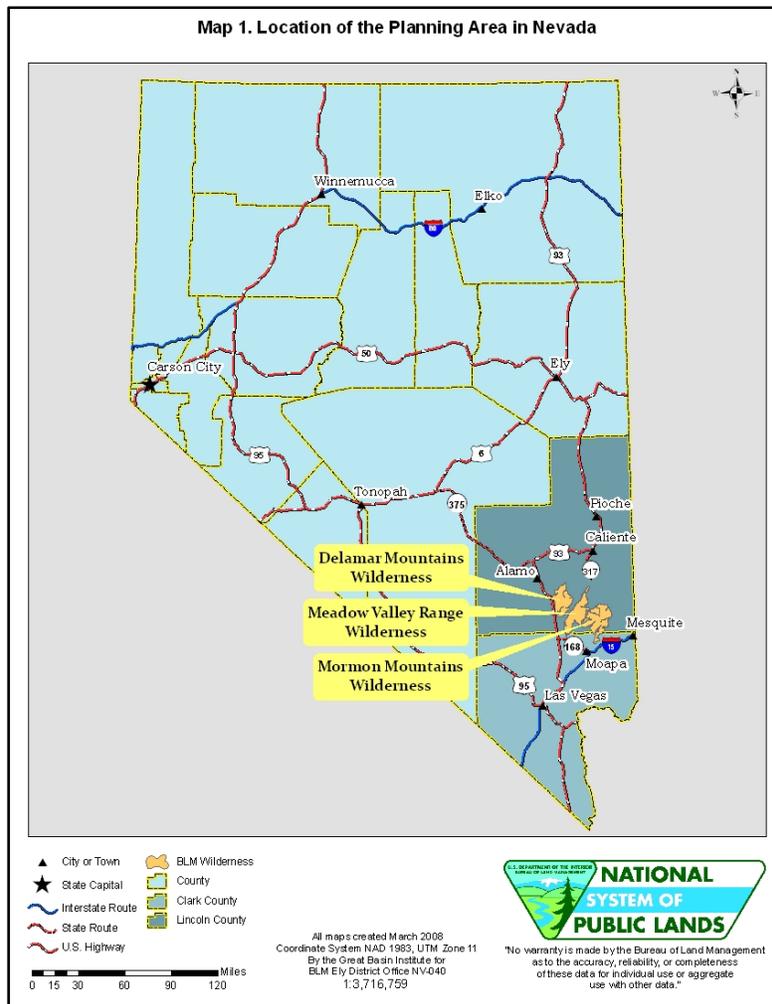
Highway 317 from Caliente consisting of numerous maintained unpaved roads and ATV routes. Several cherry stem routes (dead end roads that form a portion of a wilderness boundary and remain outside of wilderness) penetrate into all three wilderness areas.



View from Delamar Mountains Wilderness to Meadow Valley Range Wilderness

Recreational use levels are currently low with most use occurring during the cooler months of fall thru spring. Moapa and Mormon Peak, within Mormon Mountains, are popular hiking destinations. Recreational activities include caving, hiking, backpacking, camping, wildlife viewing, upland game hunting, and photography. Horseback riding is limited due to the scarcity of water.

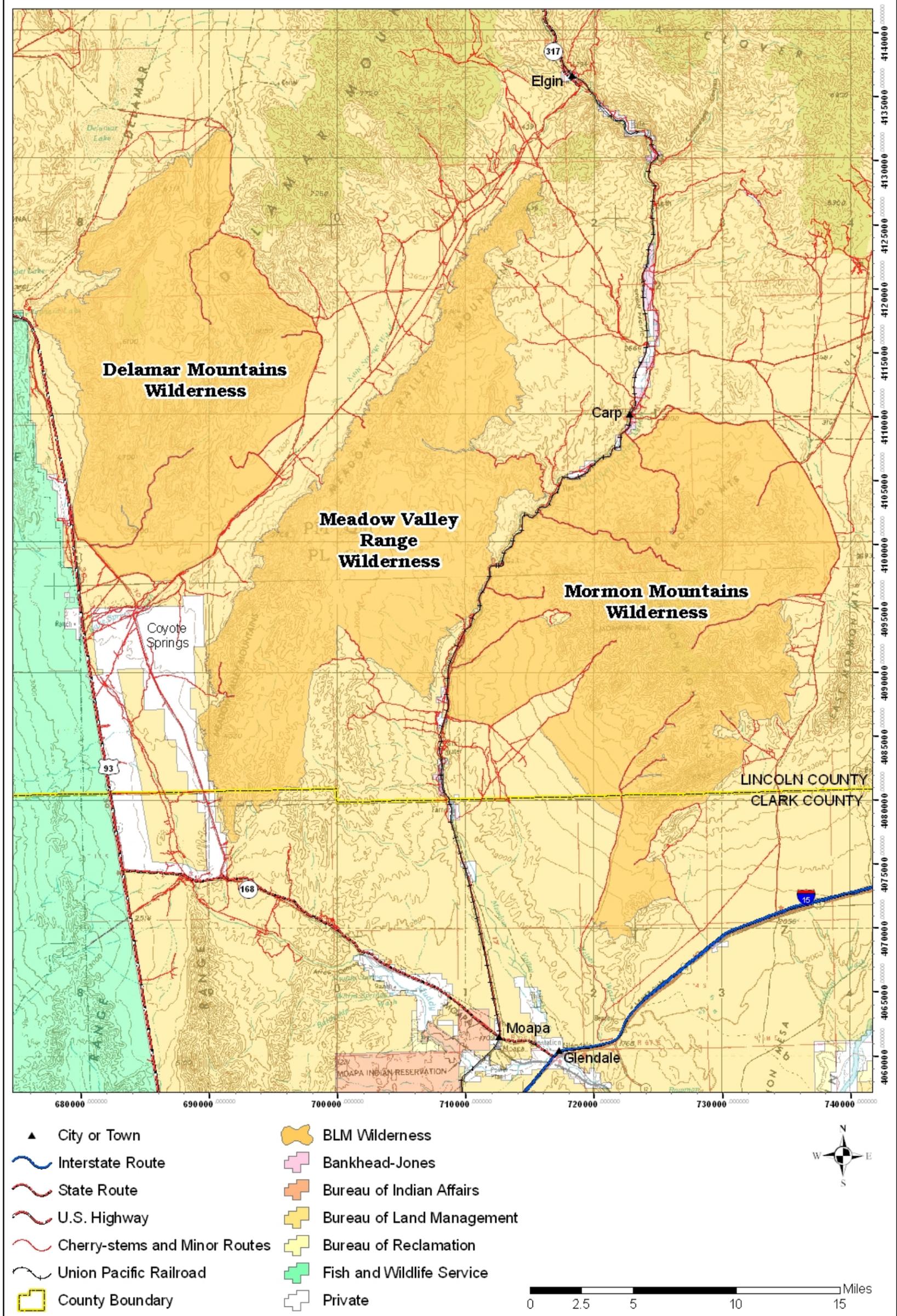
The geology is predominantly sedimentary rock layers of limestone, dolomite, sandstone, and shale that were deposited when the area was an extensive inland shallow sea, and are overlaid with much younger volcanic rock. Some of the unique geologic features include earthquake faults, one of which is responsible for creating the dramatic west face of the Meadow Valley Range, the relatively rare volcanic glass known as perlite, tuffs, “Apache tears,” small pockets of petrified wood, and a natural arch. The terrain varies from jagged peaks and ridges, rugged escarpments and narrowly carved canyons to gently sloping bajadas, extensive fans, and washes.



The soil is predominantly gravelly sandy loam. Yearly precipitation ranges between 4-8 inches with moderately rapid permeability and very high runoff. Water sources are scarce and limited to a few developed and undeveloped springs. Numerous wildlife water developments exist for the maintenance of large and small game populations, and are administered by the Nevada Department of Wildlife (NDOW).

Vegetation on the lower slopes and bajadas consists primarily of low desert scrub with such plants as blackbrush (*Coleogyne ramosissima*), eastern Mojave buckwheat (*Eriogonum fasciculatum*), Joshua tree (*Yucca brevifolia*), teddybear cholla (*Opuntia bigelovii*), among other succulents, creosotebush (*Larrea tridentata*), white bearpoppy (*Arctomecon merriamii*), saltbrush (*Atriplex canescens*), desert holly (*Atriplex hymenelytra*), Nevada jointfir (*Ephedra nevadensis*), and Clark mountain agave (*Agave utahensis nevadensis*). Small stands of ponderosa pine (*Pinus ponderosa*) can be found on some mountain peaks of the Mormon Mountains, while singleleaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) occur in portions of all three areas.

Map 2. Overview of the Wilderness Areas





Meadow Valley Wilderness

Examples of non-native invasive plant species include Tamarisk (*Tamarix* spp.) and Sahara mustard (*Brassica tournefortii*), which are designated Nevada noxious weeds, and annual grasses such as red brome (*Bromus madritensis* spp. *rubens*) and cheatgrass (*Bromus tectorum* L.).

Fire has historically been an extremely infrequent natural occurrence in the scrub-dominated desert. The presence of introduced non-native annual grasses, predominately red brome, has changed the natural fire cycle by yielding abundant fine fuel. Fires can carry through this fuel to burn native vegetation, causing their long term loss. Current fire management objectives are suppression of all fire. All three areas had extensive fires in 2005 that burned a total of 146,271 acres within Wilderness. Additional fires occurred in 2006. As of the end of 2007, Emergency Stabilization and Rehabilitation (ES&R) actions have been taken to seed 3,564 acres aerially and 40 acres by hand.

The areas' varying climates and elevations provide important habitat for a wide spectrum of wildlife. Desert tortoise (*Gopherus agassizii*), banded Gila monster (*Heloderma suspectum cinctum*), desert banded gecko (*Coleonyx variegatus variegates*), sidewinder (*Crotalus cerastes*), and long-nosed leopard lizard (*Gambelia wislizenii*) occur at lower elevations. Higher in the mountains, it is possible to spot desert bighorn sheep (*Ovis canadensis nelsoni*), mule deer (*Odocoileus hemionus*), bobcat (*Lynx rufus baileyi*), and mountain lion (*Felis concolor*). Burrowing owl (*Athene cunicularia*), and an impressive suite of raptors including golden eagle (*Aquila chrysaetos*), prairie falcon (*Falco mexicanus*), and ferruginous hawk (*Buteo regalis*) can also be seen.



Mormon Mountains Wilderness

The Mormon Mesa and Kane Springs Area of Critical Environmental Concern (ACEC) overlap these wilderness areas and were created primarily to protect critical habitat for the federally threatened desert tortoise. The Delamar Mountains Wilderness encompasses 27,066 acres of the Kane Springs ACEC, the Meadow Valley Range encompasses portions of the Kane Springs and Mormon Mesa ACECs totaling 12,723 acres, and the Mormon Mountains Wilderness encompasses 45,735 acres of the Mormon Mesa ACEC (See Maps 3 – 5 and 6, Pages 10 – 12 and 26). Approximately 236,860 acres of desert tortoise habitat (including ACECs and critical habitat) exist within wilderness boundaries. No other federally listed species are known to occur, however several BLM and state sensitive species are known or are likely to occur.

Fossils found throughout the area offer a glimpse into life hundreds of million years ago when the area was at the bottom of a sea. Prehistoric cultural resources abound and include petroglyphs, pictographs, agave roasting pits, lithic scatters, rock shelters, grinding stones, and prehistoric camp sites. More recent human occupation by early settlers is evidenced by the presence of various historic resources such as glass bottles, metal cans, barbed wire, and camp structures.

The wilderness areas contain mineral deposits of copper, vermiculite, and gypsum. While there are no current active mine claims, the Mormon Mountains Wilderness contains evidence of previous activities in the form of an abandoned mining site, two shafts, and three tunnels/caves.

Active grazing permits existed at the time of wilderness designation and are authorized to continue under the direction of the Congressional Grazing Guidelines. The portions of nine grazing allotments located within ACECs were closed for species protection following the federal listing of desert tortoise. Grazing permits located entirely within ACECs were purchased from permittees and are currently in “retired” status (See Maps 3 – 5 and 6, Pages 10 – 12 and 26). Presently, Delamar Mountains Wilderness contains 4 grazing allotments, Meadow Valley Range Wilderness contains 6 allotments, and Mormon Mountains Wilderness contains 4 allotments. Several range developments (fences, pipelines, developed springs, corrals, troughs, and reservoirs) currently exist for the maintenance and support of livestock grazing operations.

Human-caused disturbances, in the form of unauthorized vehicle routes, existed within these areas at the time of wilderness designation. They have since undergone route decommissioning and initial rehabilitation. Total miles are as follows: Delamar Mountains 20 miles; Meadow Valley Range 28 miles; and Mormon Mountains 44 miles.

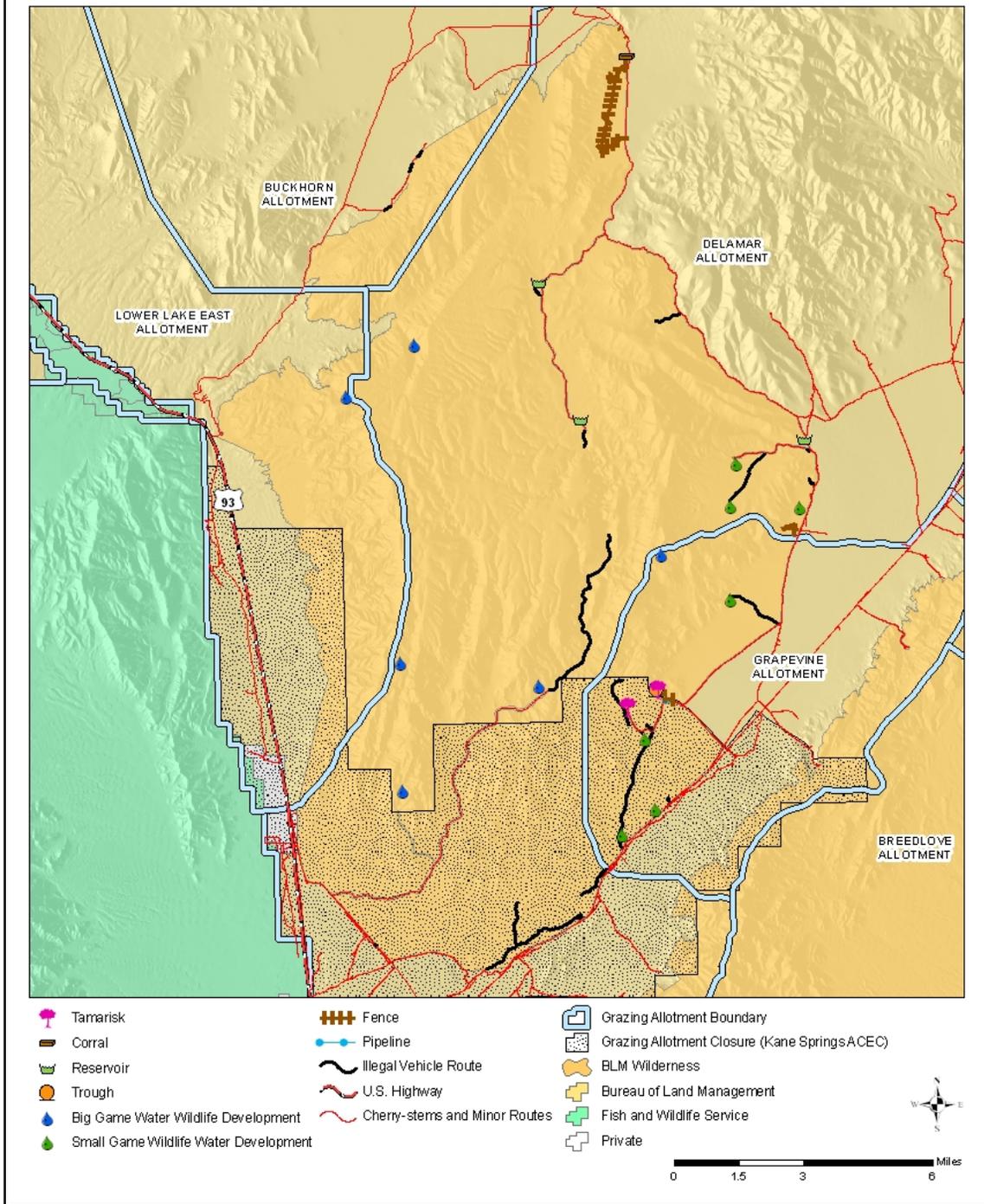
While no private inholdings are present, several private parcels are either adjacent or in close proximity to each of the areas. An active Union Pacific railroad line and right of way is located between the southeastern extent of the Meadow Valley Range and the northwestern extent of the Mormon Mountains Wilderness.

A more comprehensive description of the environment is incorporated into the Affected Environment section in the Environmental Assessment following the Plan.

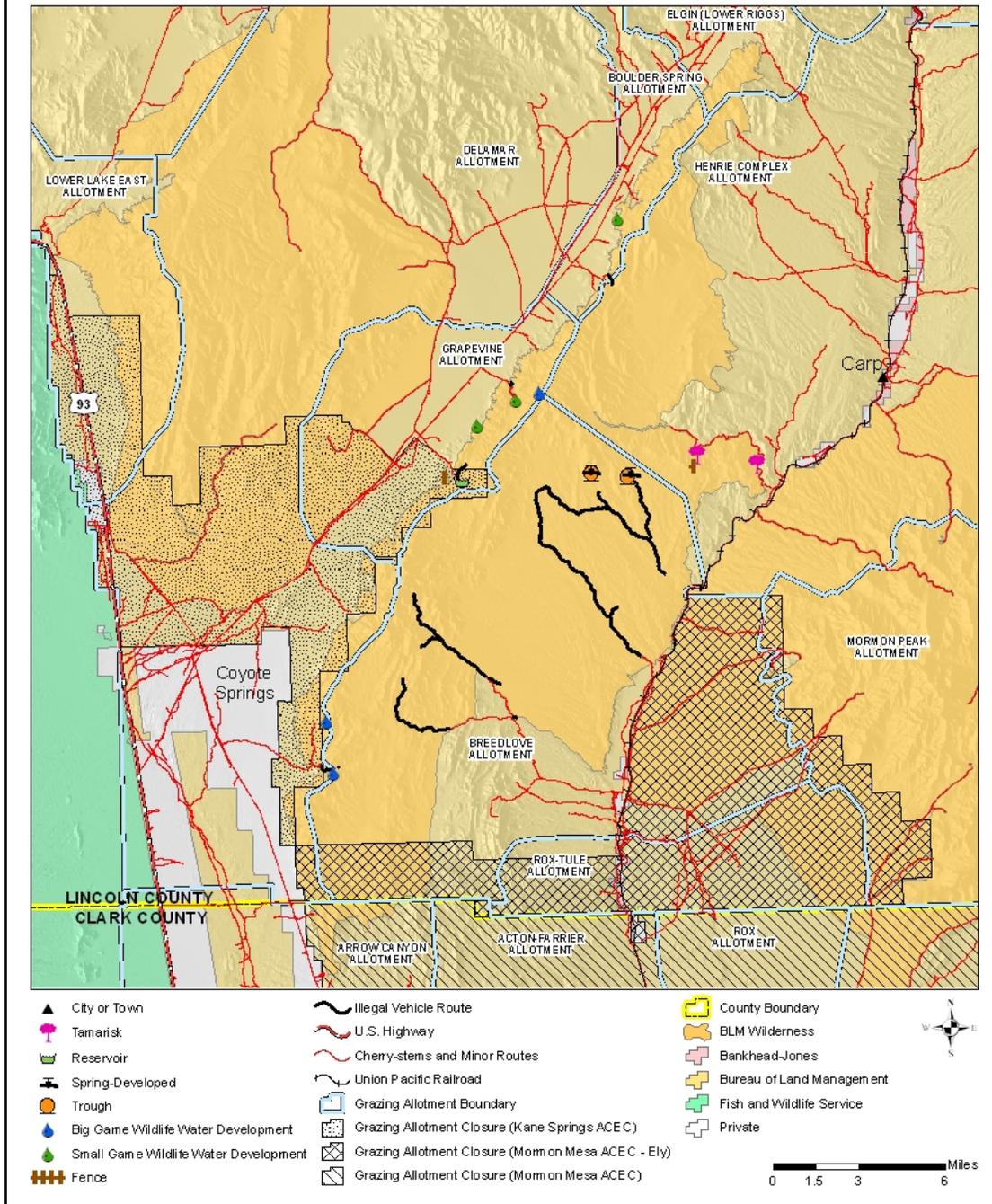


Yucca in bloom in Delamar Mountains Wilderness

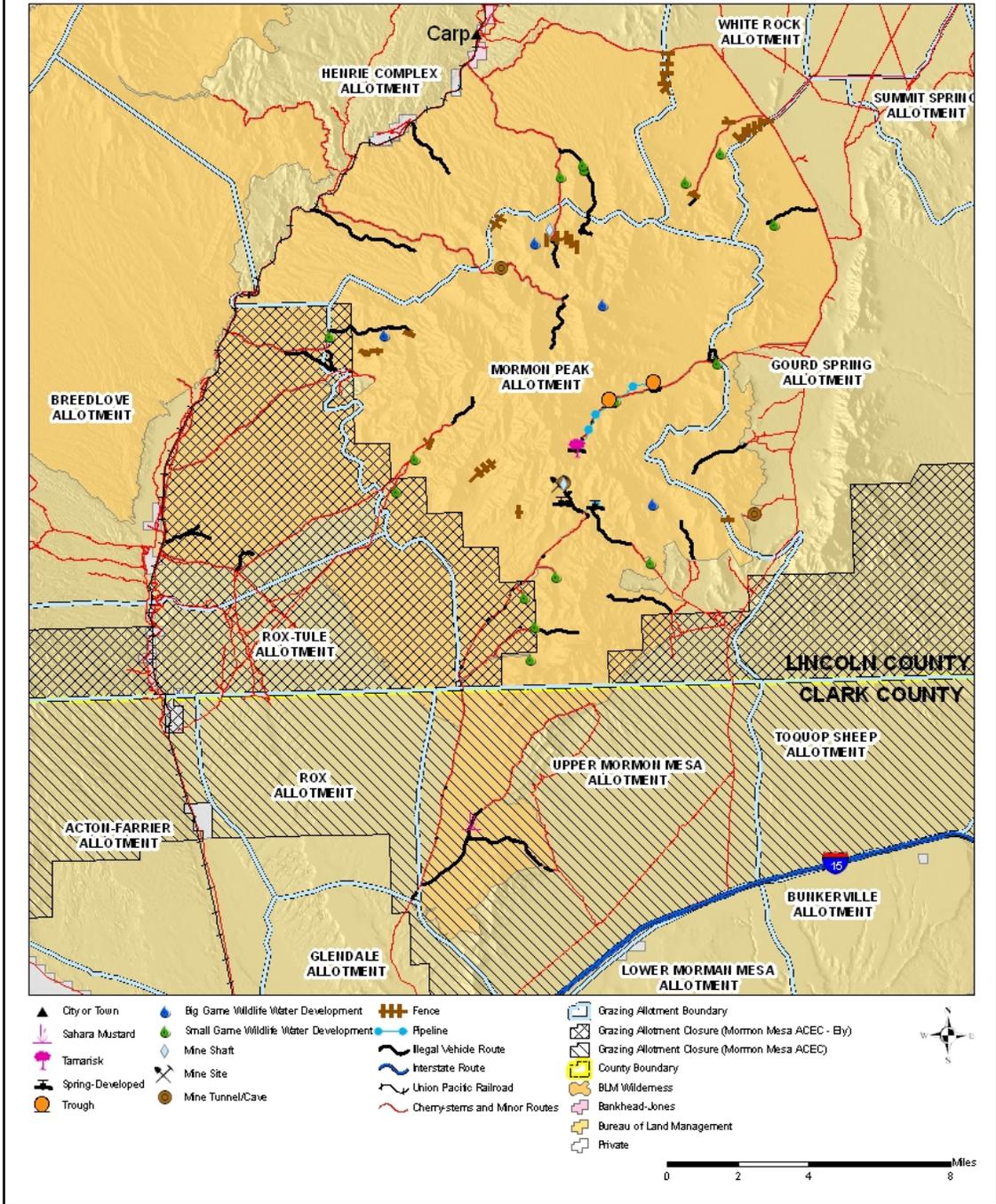
Map 3. Current Condition of Delamar Mountains Wilderness



Map 4. Current Condition of Meadow Valley Range Wilderness



Map 5. Current Condition of Mormon Mountains Wilderness



Wilderness Characteristics

The Wilderness Act of 1964 defines wilderness and mandates that the primary management direction is to preserve wilderness character. Although wilderness character is a complex idea and was not explicitly defined in the Wilderness Act, Wilderness characteristics are commonly defined in the Wilderness Act as:

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

Additionally, the wilderness areas may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These supplemental values are optional wilderness characteristics which need not be present for an area to meet the definition of wilderness.

Wilderness Specific Issues

Issues to be addressed in this Wilderness Management Plan were identified through internal and public scoping. Internal scoping was done via meetings and written communications with BLM resource specialists. Public scoping was conducted in the form of workshops, meetings, written letters, email, and by BLM staff. Public scoping workshops were held at the BLM Caliente Field Office on April 1, 2008 and July 7, 2008; at the Mesquite Campus Library on April 2, 2008 and July 1, 2008; the BLM Las Vegas Field Office on April 9, 2008 and June 30, 2008. Meetings specifically for livestock grazing concerns were held at the BLM Caliente Field Office on April 15, 2008 and June 4, 2008; at the Great Basin Institute Ely Field Office June 6, 2008. All issues and concerns raised thus far were considered during the development of the range of alternatives described in the Environmental Assessment following this Plan. Relevant issues to be addressed in this Wilderness Management Plan that were identified through public scoping relate to wilderness characteristics and are as follows:

Opportunities for solitude or primitive and unconfined recreation.

- Road access to the Tri-canyon area of Meadow Valley Range possibly being prevented by the Coyote Springs development.
- Recreation use in Tri-canyon area could disturb bighorn sheep.

- Methods for monitoring visitor use levels such as trail counters.
- Establishment, maintenance, signing and management of designated or visitor-developed trails.
- Designation of vehicle access points.
- Defining maintenance levels for boundary roads and cherry-stemmed vehicle access routes.
- Kiosks and signs providing information to the public.

Protecting and enhancing the undeveloped and natural appearance of the wilderness areas.

- Prevention of motorized trespasses into wilderness.
- Loosening of compacted soil from decommissioning of surface disturbances, including former vehicle routes, mining disturbances, and soil disturbance from wildlife water developments.
- Removal of unnecessary facilities and trash.
- Disagreement with rehabilitating old surface disturbances such as roads and mines.

Preserving naturalness and primeval character and influence of the wilderness areas.

- Management of wild horses.
- Management of fire including suppression levels.
- Post-fire seeding methods such as using non-native species or using post-fire ground preparation instead of seeding.
- Management of noxious and invasive plant species; in particular, cheatgrass, red brome, Sahara mustard, and Tamarisk.
- Inventory, monitoring, and research of flora, fauna, paleontological and archeological resources (need to differentiate between historic and prehistoric management).
- Protection of springs.

Management of special non-wilderness land uses allowed by the Wilderness Act.

- Continuation of livestock grazing activities, access to, and maintenance of range developments; in particular, Horse Spring and pipeline.
- Grazing levels following fires.
- Process for emergency operations, including retrieval of downed military aircraft and livestock emergencies inside wilderness.
- Access, maintenance, placement, upgrades, and installation of wildlife water developments.
- Mining claims and water rights.
- Dropping of flares by military.

Managing supplemental values of the wilderness.

- Using monitoring to adjust management actions.
- Use education and interpretation to help visitors understand the wilderness resource.

Wilderness Management.

- Concern over this Plan being consistent with Section 10 requirements of the Coyote Springs Investment Planned Development Project Final Environmental Impact Statement.
- Possible modifications to plan within 10 year time frame.
- Overall impact of urbanization including Coyote Springs Development.

Certain issues identified during public scoping are already addressed in existing planning documents or policy, and are not within the scope of this Plan. They are listed below:

- Opening former vehicle routes in wilderness to motorized travel — The Wilderness Act prohibits motorized vehicles in wilderness.
- Managing airspace above wilderness — The BLM does not have the authority to manage air space.
- Amending wilderness boundaries or cherry-stemmed routes — Wilderness boundaries are designated by Congress and legislation would have to be enacted to authorize any changes beyond topographical errors.
- Effects of coal-fired power plants on wilderness — Buffers are not created around wilderness; therefore this Plan is limited in addressing effects stemming from projects outside of wilderness.
- Road access to Davies Spring for Boy Scout camping and recreation development of this area — Congress would need to change any designated cherry-stem routes and Boy Scout troops would not be prevented from camping with this Plan.
- Access to the southeast portion of Meadow Valley Range and the western Mormon Mountains blocked by Union Pacific Railroad — This Plan does not have the authority to gain access rights from the Union Pacific Railroad.

Wilderness Management Goals and Objectives

Managing Wilderness is guided by four primary goals defined in Appendix 1 of the BLM wilderness management planning manual (BLM Manual 8561). The goals provide general direction, and are refined into specific objectives. Objectives are statements of desired conditions stemming from current situations and assumptions about the future. Management action(s) are based on these objectives. This section outlines the goals and objectives that guide this 10-year Wilderness Management Plan.

Goal 1

Provide for the long-term protection and preservation of the areas' wilderness character under a principle of non-degradation. The areas' natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historic value present will be managed so that they would remain unimpaired.

Objectives

- Preserve the primeval character and influence of the wilderness by allowing fire as a natural process of disturbance and succession where the ecosystem is fire-dependent; manage fire where it threatens wilderness character and/or natural ecological conditions or processes; prevent fire where it threatens human life or property.
- Manage wildlife habitat to support healthy, viable, and naturally distributed wildlife populations in an effort to retain the areas' natural and primeval character.
- Maintain native plant distribution and abundance through the reduction of noxious and non-native invasive species in an effort to retain the areas' natural and primeval character.
- Protect and preserve the outstanding archaeological and historic resources of these areas while allowing for visitor enjoyment of those resources.

Goal 2

To manage the wilderness areas for the use and enjoyment of visitors in a manner that would leave the areas unimpaired for future use and enjoyment as wilderness. The wilderness resource would be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use.

Objectives

- Provide for the use and enjoyment of the wilderness areas while maintaining outstanding opportunities for primitive recreation, including solitude, through minimal visitor use regulations and minimal on-the-ground developments.
- Utilize education and interpretation as a proactive approach in managing visitor activities that may impact preservation of the wilderness character.
- Prevent unauthorized motorized vehicle travel through the management of vehicle access points.

Goal 3

To manage the wilderness areas using the minimum tool, equipment, or structure necessary to successfully and safely accomplish the objective. The chosen tool,

equipment, or structure should be the one that least degrades wilderness values temporarily or permanently. Management would seek to preserve spontaneity of use and freedom from regulation to the greatest extent possible.

Objective

- Implement proposed actions as necessary to meet minimum requirements for the administration of the areas as wilderness and to have the least impact to wilderness characteristics.

Goal 4

To manage non-conforming but accepted uses permitted by the Wilderness Act and subsequent laws in a manner that would prevent unnecessary or undue degradation of the areas' wilderness character. Non-conforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Objectives

- Allow for special provision land uses determined by the Wilderness Act or Lincoln County Conservation, Recreation and Development Act (2004) while minimizing developments, degradation to naturalness, and other impacts to wilderness resources.
- Maintain or enhance the natural appearance of the wilderness areas by removing unnecessary facilities and minimizing or restoring human-caused surface disturbances.
- Assess potential commercial services of the wilderness areas for their economic importance and prevent negative impacts on wilderness characteristics.

Current Situation and Assumptions

Current local conditions and expectations were identified before developing management actions. Inventory, monitoring, and research would be important aspects to meet the objectives of this plan.



Desert Tortoise

Current Situation

The Mormon Mesa and Kane Springs ACECs overlap these wilderness areas and were created primarily to protect critical habitat for the federally listed desert tortoise. No other federally listed species are present; however, there are several BLM special status species present. All three areas contain mule deer habitat and areas of occupied and potential desert bighorn sheep habitat.

Assumption: One aspect of preserving the wilderness areas' natural and primeval character involves the maintenance of healthy, viable, and naturally distributed wildlife populations. It may be necessary to implement management activities to prevent degradation or enhance wilderness characteristics.

Current Situation

Preservation of the natural character of these wilderness areas are currently affected by areas of invasive and noxious weeds such as cheatgrass, red brome, and Tamarisk. The presence of introduced annual grasses has increased the abundance of fine fuels. In 2005, fires burned approximately 37% of these wildernesses and portions of the burned areas were subsequently reseeded to aid in post-fire rehabilitation.

Assumption: Further establishment of invasive and noxious weeds could further impair ecological integrity throughout the system and thus degrade wilderness character. Disruption of native vegetation could further alter natural fire regimes, thus, management activities may be necessary.

Current Situation

Current trammeling activities in all three wilderness areas include active livestock grazing allotments, the presence of authorized allotment fences, pipelines, water troughs, and wildlife water developments.

Assumption: Livestock grazing and the necessary facilities and activities to support a livestock grazing program are expected to continue. Access to, and maintenance of wildlife water developments may be needed. Furthermore, a naturally arid environment coupled with long-term forecasts for drier conditions in the desert southwest may lead to the need for additional wildlife water developments.

Current Situation

These three wilderness areas are in close proximity to Las Vegas, which is one of the fastest growing urban areas in the country. Coyote Springs is an approved master planned community situated just to the south of Delamar Range Wilderness and the western border of the Meadow Valley Range Wilderness. At present, visitor use is minimal in all three areas, and opportunities for solitude and primitive and unconfined forms of

recreation are substantial. There is an unofficial trail leading to the summit of Moapa Peak in Mormon Mountains Wilderness, which draws hikers during the cooler months of the year. Additionally, Mormon Mountains Wilderness contains an easily accessible limestone outcrop that may be of interest to rock climbers.

Assumption: As the population in the Las Vegas Valley and Coyote Springs continues to grow, wilderness visitor use may increase. Also, wilderness designation has the potential to draw more attention to these areas and thereby increase visitation. Use would be expected to increase in certain areas while use in the remainder of the wilderness areas would be light. Management would preserve opportunities for solitude, primitive unconfined recreation, and the future use and enjoyment of the areas as wilderness.

Current Situation

Numerous former vehicle routes exist in all three areas. These routes have been closed and have undergone initial rehabilitation. Several cherry-stem routes provide access points into deeper portions of the wildernesses. There have been incidences of unauthorized vehicle incursions into the wilderness areas.

Assumption: Unauthorized vehicle use may continue due to urban expansion and proximity possibly leading to the degradation of wilderness characteristics.

Current Situation

At the request of NDOW (Nevada Department of Wildlife), USDA — APHIS Wildlife Services (United States Department of Agriculture — Animal Plant and Health Inspection Service) has set traps for bobcats and removed mountain lions in support of desert bighorn sheep management within the Delamar Mountains Wilderness.

Assumption: In the future, Federal, State, or local agencies, private organizations, or individuals may request USDA — APHIS — Wildlife Services to conduct wildlife damage management activities for the protection of special status and game species or to prevent substantial loss of livestock.

Current Situation

Nellis Air Force Base frequently conducts training exercises in the airspace above the wilderness areas. These exercises have resulted in the release of low-level flares, aircraft parts, and non-operational ordinances into the wilderness. Additionally, training exercises have occasionally resulted in emergency situations including downed aircraft or pilot and some classes of live ordinance.

Assumption: Military operations will continue to occur in the airspace above wilderness and may result in the need for operations to handle both non-emergency incidents and emergency situations.

Management Strategy

The management strategy for the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas is to maintain or improve the natural, near-pristine conditions present today while rehabilitating existing and future disturbances.

Wilderness Management Actions

Due to their proximity and similar management issues, management actions are virtually the same for all three areas, except for site-specific proposed actions. All management actions, including site-specific proposed actions, are described in this Plan and in the following Environmental Assessment. Based on the current situation and assumptions, national wilderness goals, wilderness management objectives, and wilderness-specific issues that were identified through scoping, the following actions will guide the management of these areas.

Resource programs such as Wild Horses, Livestock Grazing, Fire Management, Noxious and Invasive Weed Management, etc. individually address the management goals and activity plans of their respective programs. This Wilderness Management Plan considered all resources involved in the wilderness areas and associated management issues and concerns as they relate to the wilderness resource. Although this Plan does not administer these resource programs, resource activity plans have been evaluated to ensure conformity with wilderness management goals and objectives. Management actions are described under wilderness management categories. While all of the management actions within these categories provide wilderness specific guidance, the first six wilderness management categories also outline site-specific proposed management actions.

Any ground disturbing activities involved with the following actions would follow Best Management Practices in accordance with the 2008 Ely District Approved Resource Management Plan, including the Programmatic Biological Opinion in Appendix D. All actions are supplemental to and consistent with Wilderness laws, regulations, and policies, which must be further consulted in the event of unforeseen issues. Maps 7 – 10, Pages 34 – 36 illustrate site-specific proposed wilderness management actions.

Wilderness Management Categories

Noxious and Non-Native Invasive Weed Guidelines

The management ideal is to sustain only native species in wilderness areas. Noxious weeds in Nevada are classified by the Nevada Department of Agriculture and the Plant Protection Act (2000) administered by the United States Department of Agriculture's

(USDA) Animal and Plant Health Inspection Service (APHIS). Current noxious and invasive weed infestations include, but are not limited to: red brome (invasive), cheatgrass (invasive), Sahara mustard (noxious, category B), and Tamarisk (noxious, category C). The potential exists for further infestations of these species, and others, coming from surrounding areas. In particular, the Union Pacific railroad (UPRR) right of way corridor between the Meadow Valley Range and Mormon Mountains Wilderness areas is infested with multiple noxious weed species. Different management techniques may be required for each non-native, invasive species based on effectiveness as determined by plant biology, minimum tool requirements, and impact to the wilderness resource.

When noxious and invasive weeds are found, emphasis would be placed on controlling small infestations with the potential to spread and displace native plants. Treatments for large infestations (defined by the BLM Ely District Weeds Coordinator) would be considered separately. Seeding and transplant projects will follow guidelines presented in the Emergency Stabilization and Rehabilitation section (Page 43). BLM Ely District weed management protocols would guide the use of herbicide treatments. Treatments would be prioritized in the following order, though it is likely that treatment combinations would be necessary in some situations:

1. Manual removal with hand tools if weeds could be controlled or eradicated without causing re-sprouting, without soil disturbance leading to expansion of noxious or non-native invasive species, and where infestations are of a size manageable by hand crews.
2. Herbicides applied by backpack and pack stock equipment, where manual removal is not effective.
3. Biological control agents approved by the Animal and Plant Health Inspection Service where infestations are of such size that eradication by manual removal or herbicides is not feasible. Current possibilities consist of a stem-boring weevil for Dalmatian toadflax and a leaf beetle for tamarisk control.
4. Herbicides applied aerially or with motorized equipment, where control is feasible, where control impacts are quickly and readily rehabilitated and where the infestation is of such size that herbicide cannot be effectively applied without motorized equipment.
5. Reseeding treated areas preferably with native species of local genetic stock following guidelines outlined under the Emergency Stabilization and Rehabilitation heading (See Page 43).
6. Alternative treatments, such as targeted grazing by livestock, would be considered.

Site-Specific Proposed Actions

There are several documented infestations of Tamarisk near Hackberry Spring in the Meadow Valley Range, Willow Spring in the Delamar Mountains, and Horse Spring in the Mormon Mountains Wildernesses. Tamarisk infestations would first be treated using the cut-stump method and secondly, if seasonal re-sprouting occurs, by the directed low volume foliar application method. Treatment details are as follows:

- Trees would be initially downed using either hand or cross-cut saws.
- Wood slash would be scattered.
- The stumps would be painted with an herbicide mixture of triclopyr and basal oil.
- Backpack sprayers and pack stock may be used for transportation of herbicides.
- Initial treatments would use both water and kerosene based commercial formulations of triclopyr. The water based formulation was approved in December 2002 by the Environmental Protection Agency (EPA) for aquatic use. It will be mixed with water and an aquatically approved adjuvant or used undiluted for infestations located within 1 meter of water. The kerosene based formulation would be mixed at 1:3 ratios with 100% vegetable oil binding agents. Both herbicides would be applied by backpack sprayers. Non-toxic marking dye will be added to the solution to insure proper coverage.
- Resprouts and new growth would be treated with a ground foliar application of a formulation of imazapyr. One formulation was approved in January 2004 by the EPA for aquatic use. It will be mixed with water and an aquatically approved adjuvant for foliar treatment of infestations located within 10 feet of water. The other formulation would be mixed with water and an adjuvant for foliar treatments outside of the 10 foot buffer around water. Both herbicides would be applied by backpack or pack stock sprayer.
- Chemical applications will not occur within 24 hours of forecasted rain.
- To minimize triclopyr vaporization, use will occur when air temperatures are between 60-90° F.
- All Standard Operating Procedures (SOPs), mitigation measures, and conservation measures listed in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic Environmental Impact Statement, which was signed in September of 2007, will be followed.

There is currently only one documented Sahara mustard infestation located within the Mormon Mountains Wilderness, though other infestations may be found through monitoring. Meadow Valley Wash has several infestations located mostly along the main drainage Sahara mustard is a unique weed in that it does not require a great deal of moisture to become established. That, coupled with the fact that it is a winter annual, lends itself to the very real possibility that these infestations could further spread into both the Mormon Mountains and the Meadow Valley Range Wildernesses. Current and future Sahara mustard infestations would be treated with a ground foliar application. Treatment details are as follows:

- Infestations would be treated with a ground foliar application of a formulation of metsulfuron methyl. It will be mixed with water and an adjuvant for foliar treatment of infestations. All treatments would be applied by backpack or pack stock sprayer.
- Chemical applications will not occur within 24 hours of forecasted rain.
- All (SOPs), mitigation measures, and conservation measures listed in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS, which was signed in September of 2007, and Ely District Approved Resource Management Plan BMPs will be followed.

Livestock Grazing Guidelines

Grazing would continue under federal regulations to meet the Mojave – Southern Great Basin Resource Advisory Council Standards. Planning related to grazing operations would be guided by the Congressional Grazing Guidelines (House Report 105-405 Appendix A, 1990) and the BLM Manual 8560 (Management of Designated Wilderness Areas).

Activities and the necessary facilities used to support livestock grazing would be permitted to continue in wilderness. The following excerpt from the Congressional Grazing Guidelines (House Report 101-405, 1990) provides direction for facilities maintenance and use of motorized equipment in wilderness:

“The maintenance of supporting facilities, existing in an area prior to its classification as wilderness (including fences, line cabins, water wells and lines, stock tanks, etc.) is permissible in wilderness. Where practical alternatives do not exist, maintenance or other activities may be accomplished through the occasional use of motorized equipment....Such occasional use of motorized equipment should be expressly authorized in the grazing permits for the area involved. The use of motorized equipment should be based on a rule of practical necessity and reasonableness....Moreover, under the rule of reasonableness, occasional use of motorized equipment should be permitted where practical alternatives are not available and such use would not have a significant adverse impact to the natural environment. Such motorized equipment uses will normally only be permitted in those portions of a wilderness area where they had occurred prior to the area’s designation as wilderness or are established by prior agreement.”

Current known range developments, as well as any range developments discovered may be kept and maintained. Developments would be removed if deemed unnecessary by the BLM and permittee following periodic evaluations or when there is a grazing permit renewal or transfer. The installation of new range developments is allowed in accordance with the Congressional Grazing Guidelines and pending project-specific National Environmental Policy Act (NEPA) analysis.

Range developments that appear to have been abandoned would receive an administrative record review and additional field reconnaissance in order to determine usage. The

assigned BLM Range Specialist and Archaeologist would be consulted to determine if historical or cultural designation is warranted. If it is determined, after consultation with the permittee, that a development is abandoned and not of historical or cultural value, it would be removed by BLM personnel or authorized volunteers. All projects involving ground disturbing activities will be subject to Section 106 consultation. Range developments for which questions of activity exist would be evaluated during the livestock operators' term permit renewal process.

Routine livestock management activities and maintenance of supporting facilities (e.g. small salt drops and fence repairs) would be accomplished by foot or horseback as needed. Motorized vehicles may be authorized for major maintenance when transporting equipment or parts which cannot be accomplished by foot or pack stock. Specific maintenance requirements and schedules would be established by the permittee, range specialist, and wilderness specialist during permit renewal and would be stated as a term or condition of the grazing permit.

Approved motorized access would be confined to established administrative access routes. These would be managed for limited use by the permittee. A gate or bollard, signed as administrative access, may be installed at the start of select administrative access routes to prevent unauthorized vehicle use. The permittees and BLM staff would maintain access keys. Administrative access routes would not be decommissioned; they may be maintained on a case-by-case basis in order to provide reasonable access for permittees.

In the case of an emergency such as rescuing sick animals or placement of feed, the permittee may be authorized to use motor vehicles in addition to their scheduled range development maintenance and livestock management access provided the permittee notifies the BLM at the onset of the emergency or immediately thereafter. This would be stated as a term or condition of the grazing permit.



Willow Trough Range Development in Meadow Valley Range Wilderness

Site-Specific Proposed Actions

The 34 existing range developments would be kept and maintained (See Map 6, Page 26). Routine activities and facilities maintenance in association with these developments would be performed by foot or horseback. Motorized vehicles may be authorized for major maintenance when transporting equipment or parts which cannot be accomplished by foot or horseback.

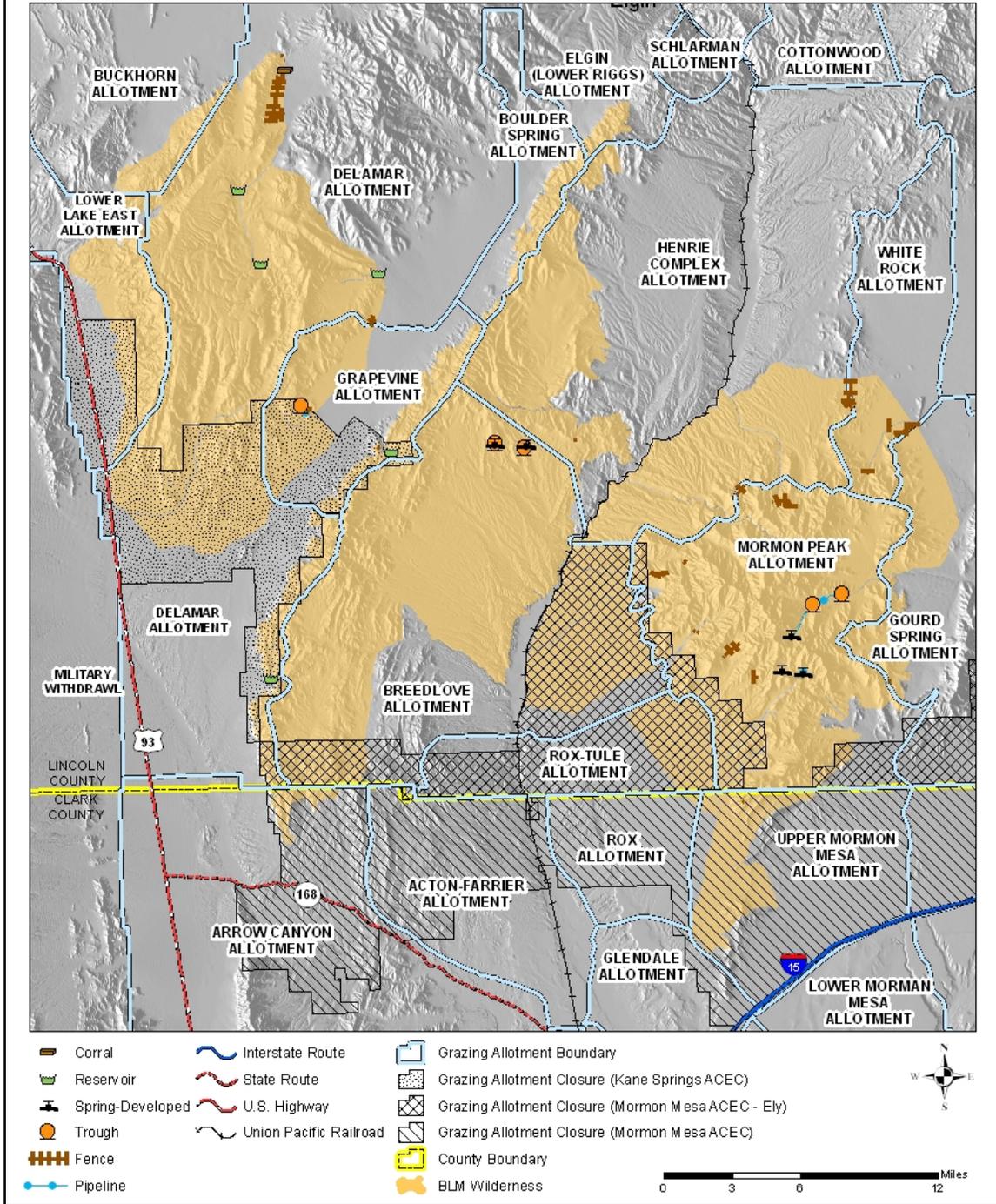
The following administrative access routes would be permitted and managed for use by the permittee on a limited basis: 0.18 mile route to Willow Spring in the Delamar Mountains Wilderness, 15.2 miles to Willow Trough in the Meadow Valley Range Wilderness, and 0.39 miles to Horse Spring in the Mormon Mountains Wilderness. Table 1 and Maps 8 – 10 (Pages 25, 35 – 37) describe and depict administrative access routes and their associated access needs (i.e. spring and trough maintenance). The approved administrative access routes would be located in existing former vehicle routes; these routes would not be decommissioned and may be maintained on a case-by-case basis in order to provide reasonable access for permittees. Motorized access would be confined to these established administrative access routes.

The Willow Spring administrative access route in Delamar Mountains Wilderness and the Horse Spring administrative access route in Mormon Mountains Wilderness would be located in the existing two-track route and would include installation of an “Administrative Access Only” sign where the cherry-stem terminates at the wilderness boundary. Access to Willow Trough in Meadow Valley Range Wilderness is the historically used route located in the wash, and would include installation of a locked gate outside of the wilderness boundary at the start of the administrative route; access keys would be kept by BLM staff and permittees.

Table 1. Site-Specific Proposed Administrative Access Routes.

Wilderness Area	Allotment	Access Need	Access Location
<i>Delamar Mountains</i>	Grapevine	Range Development Maintenance (Spring)	Township 10 S. Range 64 E. Section 9
<i>Meadow Valley Range</i>	Breedlove	Range Development Maintenance (Trough)	Township 11 S. Range 66 E. Section 19
<i>Mormon Mountains</i>	Mormon Peak	Range Development Maintenance (Spring)	Township 11 S. Range 67 E. Section 36

Map 6. Grazing Allotments and Range Developments



Management of Small-Scale Surface Disturbances

Disturbances fall into two categories with common characteristics: small-site disturbances including abandoned developments, mining claims, and dispersed campsites; and linear disturbances created by motorized vehicle traffic that are largely denuded of vegetation. Environmental Assessment (EA) NV-040-05-010 (Wilderness Disturbance Reclamation), as well as the EA associated with this Plan, may be referenced for rehabilitation following decommissioning of former vehicle routes and rehabilitating small-site disturbances.

All reclamation activities would be in accordance with the 2008 Ely District Approved Resource Management Plan's (RMP) Best Management Practices as well as the Reasonable and Prudent Measures and Terms and Conditions stated in the Programmatic Biological Opinion in Appendix D of the RMP. Work would be completed by BLM staff, contractors, and volunteers. All vehicles would be limited to designated and existing roads outside of wilderness. All actions in wilderness will be conducted with non-motorized equipment and non-mechanized transport (with the exception of wheelbarrows for moving heavy objects). Methods of reclamation would be limited to pitting, vertical mulching, seeding, and desert varnish colorant in areas of desert tortoise habitat in order to prevent impacts to individual tortoises and their burrows. Actions would include and generally be conducted in the following order as needed:

1. **Decompaction:** Working the top few inches of the entire disturbed surface to relieve soil compaction. This action would be completed with the use of non-motorized hand tools (soil spades, spading forks, McLeod rakes, pulaskis, shovels, horse-drawn implements, etc.).
2. **Scarifying/pitting:** Loosening and texturizing the impacted, disturbed surface in random locations to better capture water, organic debris, and wind-blown seeds, thereby stimulating natural revegetation. This would be done with non-motorized hand tools.
3. **Recontouring:** Reconfiguring/shaping the route to blend it with the adjacent, relatively undisturbed desert. This would involve the creation of small hummocks and banks, where appropriate, to mimic the surrounding landscape. Berms would be pulled in and the soil distributed across the disturbed surface. Vehicle tracks in sandy washes would be raked. This would lessen visual contrasts and provide a surface for natural revegetation. This action would be completed with non-motorized hand tools.
4. **Vertical mulching:** Dead and down vegetation is "planted" to obscure the visible portions of the disturbance. Additional dead vegetation, rock material and other organic matter may be distributed over the worked surface to decrease visual contrasts, create sheltered sites to aid in natural revegetation, and add organic debris. Dead and down vegetation and other materials would be gathered from areas near to the disturbances by hand.

5. **Erosion control:** Placing sterile weed-free straw bales or creating light terracing/berms to reduce erosion and create barriers to vehicles on steep slopes. This is especially effective on hill climbs. The straw bales break down over time and provide additional organic debris to the reclamation site. Bales would be brought in by hand or horseback to the worksite.
6. **Desert varnish colorant:** Spraying disturbed rock surfaces to simulate the coloration of the surrounding desert varnish. Desert varnish colorants are chemical compounds comprised of manganese, salts and other ingredients used to simulate the natural desert varnish that occurs on rock surfaces in arid environments. This substance would be applied sparingly, with the use of a backpack sprayer, and only on disturbed rock surfaces that contrast sharply with the surrounding landscape.
7. **Vegetative restoration:** This would involve planting, transplanting and/or seeding necessary to help stabilize soil, speed overall vegetative recovery and camouflage evidence of disturbances. All seed would be locally collected or native species scattered on reclaimed surfaces to accelerate natural revegetation. This action would be completed with non-motorized hand tools.

Monitoring will be performed to assess the need for additional reclamation work. Repeat reclamation treatments would occur on a case-by-case basis. To assess the need for additional rehabilitation work, photo points would be established at the time of rehabilitation and photos would be taken annually.

Large surface disturbances, such as those that may be caused by heavy machinery, would be rehabilitated by the entity (e.g. individual, agency, or company) causing them, who would be responsible for developing a rehabilitation plan and conducting any necessary environmental analysis.

Site-Specific Proposed Action

Currently there are approximately 34 linear disturbances totaling nearly 92 miles, which is approximately 92 acres of surface disturbance. Except for designated administrative access routes and designated hiking and equestrian trails, all former vehicle routes, including future disturbances, would be decommissioned over time. Based on monitoring results, repeat treatments may occur. Decommissioned routes would include: 20.3 miles in Delamar Mountains; 12.2 miles in Meadow Valley Range; 43.2 miles in Mormon Mountains Wildernesses. These routes are displayed on Maps 8–10 (Pages 35 – 37).

All Standard Operating Procedures (SOPs), mitigation measures, and conservation measures listed in the Record of Decision for the Wilderness Disturbance Reclamation Environmental Assessment, which was signed in June 2005, and Ely District Best Management Practices will be followed.

Management and Designation of Trails

Designated trails would be marked on the ground at trailheads and/or staging areas and displayed on BLM wilderness and recreation maps. A cultural resource inventory of all designated trails would be completed. Visitors traveling off designated trails may create informal foot-worn hiking paths, sometimes referred to as social trails. These informal foot-worn paths may continue to be used by visitors. However, they would not be marked on the ground, displayed on BLM recreation maps or brochures, or routinely receive maintenance.

Monitoring for new foot-worn hiking paths would specifically occur in high use areas, at all vehicle access points, and near former vehicle routes. An inventory of new foot-worn hiking paths would be maintained and monitored for resource damage. Monitoring would identify paths with different levels of trampling, such as social trails to primitive camping areas, cut vegetation, or other evidence of use.

As new foot-worn paths are discovered, they would be evaluated for impacts to wilderness character (including cultural and biological resources) and the management objectives of this Plan. When appropriate and where possible, new foot-worn hiking paths may be rehabilitated or retained (See the following “Trail Guidelines”). When a foot-worn hiking path is retained, it may be rerouted, improved, or maintained to follow designated trail guidelines as outlined below to make the trail compatible with protecting resources while preserving wilderness character. If not designated as a trail or retained as a foot-worn hiking path, new trails would be rehabilitated.



Hiker Summiting Moapa Peak in Mormon Mountains Wilderness

Trail Guidelines

Both designated trails and, when determined appropriate, informal foot-worn paths may be maintained or rerouted where they are causing or anticipated to cause damage to wilderness character. Examples for when trail maintenance or rerouting would occur include:

- Slopes greater than 15 percent, beyond which potential for excessive soil erosion and trail deterioration is high. Very short, steep sections may be retained where reinforcement with native rock would prevent soil erosion. Rolling dips or rock-enforced water bars would be utilized to reduce water caused soil erosion.
- Where trail braiding or duplicate routes exist or are beginning to occur, the most appropriate trail would be selected by improving its tread surface or trimming back vegetation. The alternate trail(s) would be obstructed and rehabilitated with rock or native vegetation.
- Maintenance would strive to limit trail width to 24 inches, but not exceed 36 inches, except for trail sections along precipices (where it may be wider for safety and horse use) or in washes. Width standards are applied to continuous segments longer than 50 feet. Tree limbs or fallen trees may be cleared within ten feet high and four feet to either side of trail (cutting limbs at trunk) or, where practical, minor trail relocation to avoid the tree.
- Trails may be rerouted to avoid damage to natural or cultural resources.



Hackberry Spring Trail

Site-Specific Proposed Actions

The Hackberry Spring Trail in Mormon Mountains Wilderness would be designated as a hiking and equestrian trail, marked on the ground outside of the wilderness boundary at the Hackberry Spring Staging Area (See Page 32), which would serve as a trailhead. The trail, which follows an existing decommissioned vehicle route, would be approximately 1.85 miles. Minor changes may be made to this existing route in order to meet the listed standards on the previous page for “Trail Guidelines” and to avoid potential issues in the Hackberry Spring riparian area.

The Moapa Peak Trail in Mormon Mountains Wilderness would be designated as an unmaintained hiking trail. The trail would be approximately 3.2 miles and follow the current unofficial route leading to the knife-edge and summit. Portions of the trail involve Class 3 and 4 climbing. Class 3 is described as scrambling, where a rope can be carried but is usually not required; Class 4 is simple climbing, with exposure, where a rope is

often used, natural protection can be easily found, and falls may be fatal. Due to the nature of the trail, it would not be subject to the “Trail Guidelines” (as described on Page 29). The trail would be marked on the ground, inside wilderness, with cairns in locations where the trail becomes obscure, and would not receive routine maintenance. The trail would be marked on the ground, outside of the wilderness boundary at the Moapa Peak Staging Area (See Page 31), which would serve as a trailhead. Depictions of the site-specific proposed actions in the Mormon Mountains Wilderness are displayed in Map 10 (Page 37).

Management of Vehicle Access Points and Designation of Staging Areas

Currently there are a few heavily used access points. Access points are defined as locations along wilderness boundaries where focused entry occurs. Over time, these and other areas used for parking along boundary roads may be impacted to the point at which improvements should be made in order to protect wilderness character. These access points and parking areas may be defined by creating vehicle turn-arounds at or before the wilderness boundary to help direct vehicles from continuing into wilderness. Vehicle turn-arounds would be limited to 0.5 acres, within a 100-foot boundary offset, and would not extend into wilderness.

Additional staging areas could be constructed when necessary to accommodate vehicle parking, visitation, and protect wilderness character. The area of disturbance would be no more than 1 acre per staging area and would not extend into wilderness. Vehicle barriers could be constructed outside of wilderness where natural obstacles are not adequate to prevent vehicles from crossing into wilderness. Implemented barriers could include the following:

- Wilderness sign, berm associated with turn-around, small rocks and/or vegetation placement or restoration.
- Large boulders moved by heavy equipment.
- Posts.
- Fences and/or gates.

Where feasible, cherry-stem and administrative routes would be maintained in the condition that existed at the time of wilderness designation. Using a trail maintenance approach, the installation of water bars to control the flow of water, as opposed to blading or culvert installation, would be utilized.

Site-Specific Proposed Actions

Two staging areas would be designated for Mormon Mountains



Moapa Peak Staging Area

Wilderness: Hackberry Spring Staging Area and Moapa Peak Staging Area (Map 10, Page 37). The Hackberry Spring Staging area would be located at the end of the Hackberry Spring cherry-stem in a previously disturbed area that has an existing vehicle barrier fence. The staging area would be approximately 200 feet by 200 feet (≈ 0.9 acres) to facilitate parking and vehicle turn-around and would remain within the 200-foot non-wilderness corridor. The proposed Moapa Peak Staging Area is located within the Mormon Mesa ACEC, critical desert tortoise habitat, adjacent to an unnamed gravel road. This staging area is within Las Vegas BLM jurisdiction. The site is located on a previously disturbed turn-around area but may require removal of a small number of plants. The site would be approximately 150 by 250 feet (≈ 0.9 acres). The staging areas would include installation of a kiosk (Map 7, Page 34).

A vehicle pullout approximately 150 X 150 feet (≈ 0.5 acres) would be placed on a previously disturbed site in desert tortoise critical habitat adjacent to Kane Springs Road. This is approximately 5 miles northeast of Highway 93 and the Kane Spring Road turnoff and is within Ely BLM jurisdiction. Some shrubs may need to be removed and the site may need to be leveled with motorized equipment.



Vehicle Pullout and Sign location adjacent to Kane Springs Road

Sign Plan

No directional signs or posts would be placed on trails within wilderness. The wilderness boundary would be identified by signs at key locations. These signs would be simple installations (e.g. carsonite posts) used to delineate the wilderness boundary from adjacent non-wilderness. Directional signs, placed along minor routes and entrances to cherry-stems, would direct visitors to wilderness

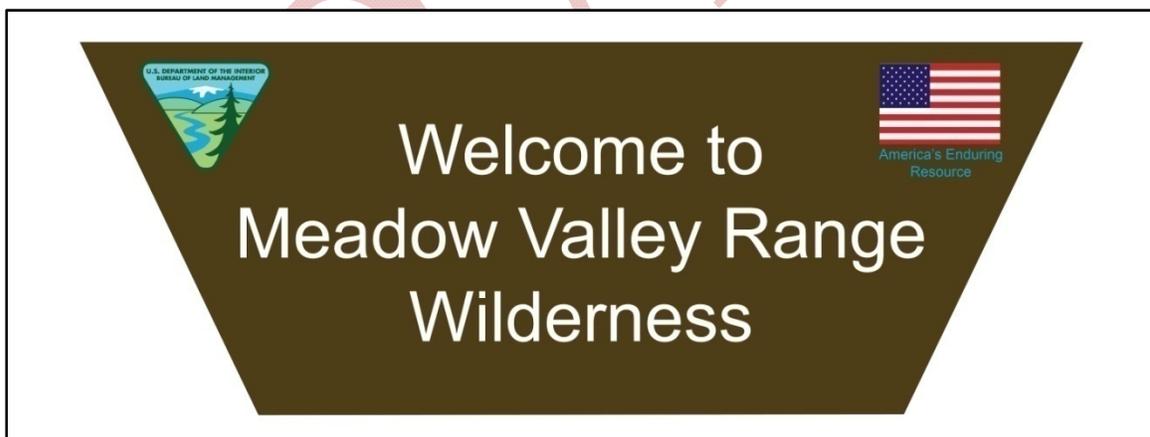
access points and in some cases staging areas; these signs would also help to both identify legal driving routes and eliminate illegal vehicle intrusions. Key entrance signs would be more formal, stating the name of the wilderness, and placed where visitors are more likely to come into contact with the wilderness boundary. Both directional and key entrance signs would be larger signs that will generally be more pleasing to the eye. Information signs may be one to three-paneled signboards placed at staging areas, access points, and major roads. These signs would provide regional and local information regarding wilderness, natural and cultural resources, regulatory information, and interpretation. These signs would not direct visitor use toward sensitive resources and in some cases may specifically direct visitors away from sensitive resources. Additionally, certain information signs may include visitor surveys with collection boxes. Additional signs would be installed to adaptively manage for changing needs.

Site-Specific Proposed Actions

Two directional signs would be placed at the following locations for the Mormon Mountains Wilderness: at the road for the Hackberry Spring cherry-stem and the road for Horse Spring cherry-stem where they intersect the Carp/Elgin Road.

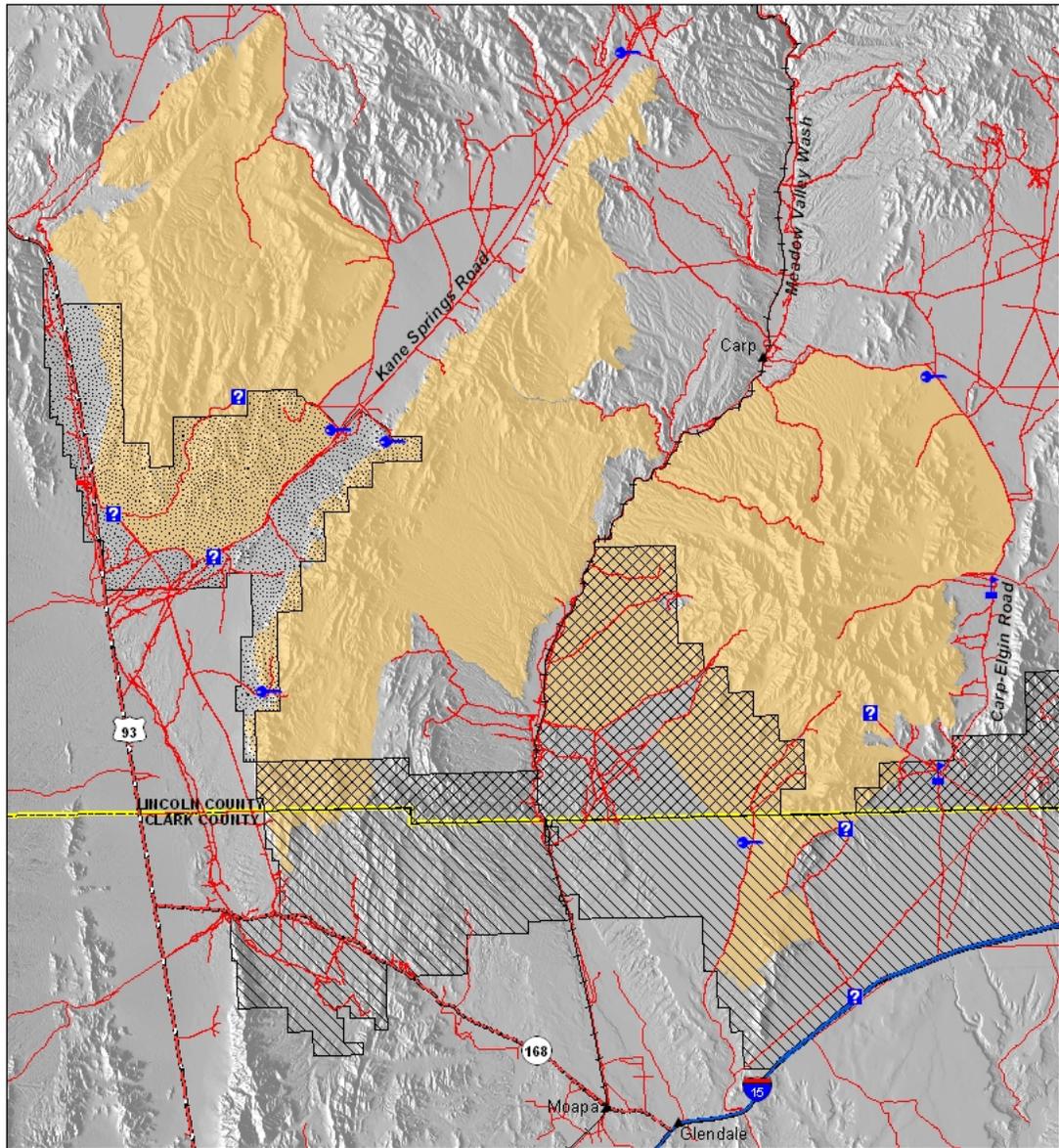
Key entrance signs would be installed at the following locations for the Delamar Mountains Wilderness: at the mouth of the Bomber Wash cherry-stem and the road leading to Willow Springs. For Meadow Valley Range Wilderness, signs would be installed at the termination of the route leading up towards Sunflower Mountain and at the mouth of the lower cherry-stem route in Tri-Canyon. Signs would be installed for Mormon Mountains Wilderness on the Carp/Elgin Road adjacent to the northern boundary of the wilderness, and at the mouth of the cherry-stem on the west side of the panhandle.

Information signs would be installed at the following locations: at the mouth of the Bomber Wash cherry-stem adjacent to the Delamar Mountains Wilderness, which would also act as a key entrance; an optional sign may also be installed at the termination of Bomber Wash cherry-stem; adjacent to Kane Springs Road, approximately 5 miles from the intersection of Kane Springs Road and Highway 93 in association with the proposed vehicle pullout; on Kane Springs Road north of Meadow Valley Range Wilderness; the proposed Hackberry Spring Staging Area and Moapa Peak Staging Area of the Mormon Mountains Wilderness; Carp/Elgin Road and Exit 100, off Interstate 15 south of Mormon Mountains Wilderness. Sign locations are depicted on Maps 7 – 10 (Page 34 – 37).



Mock-up of Key Entrance Sign for Meadow Valley Range Wilderness

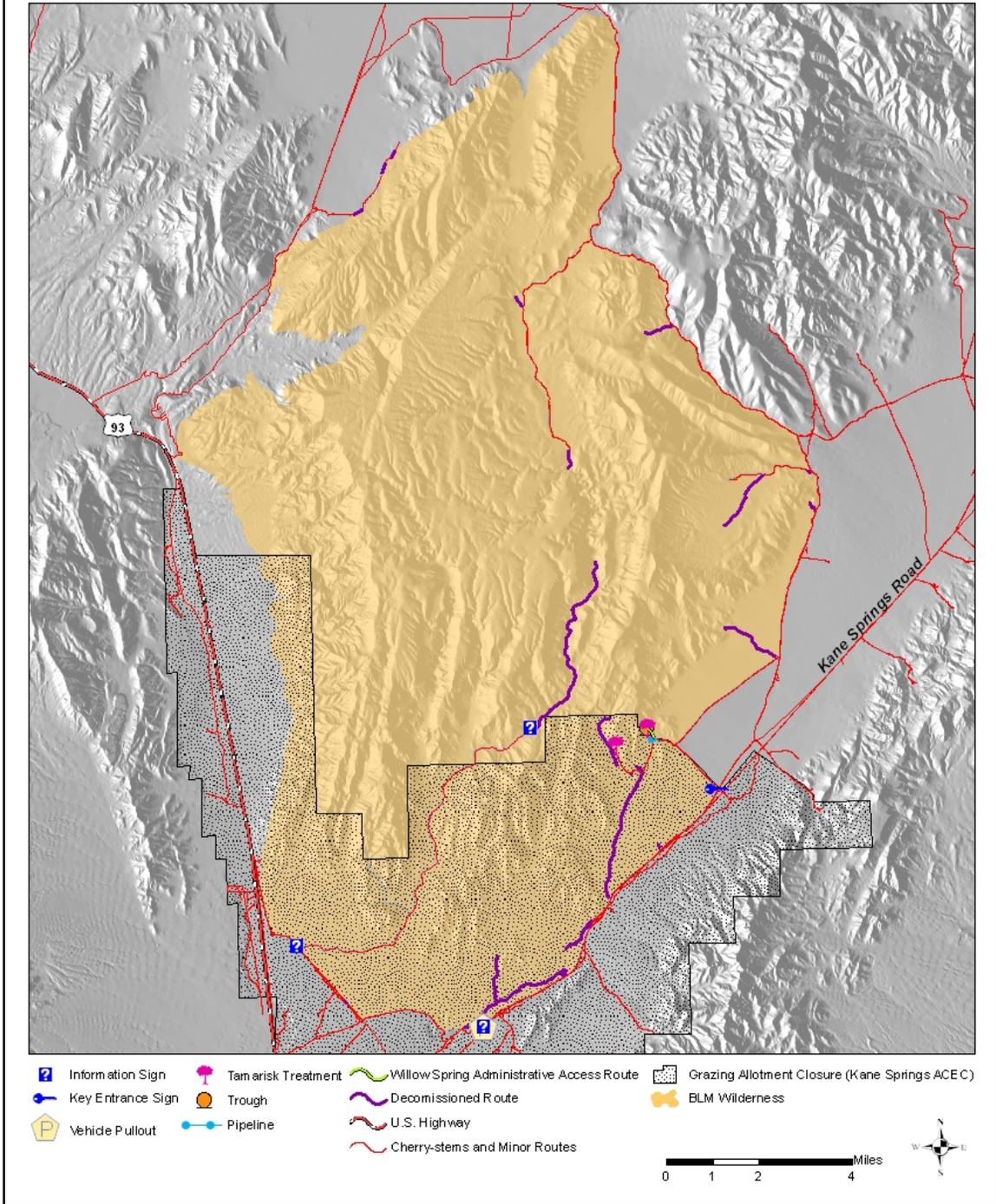
Map 7. Sign Plan Site-Specific Proposed Actions



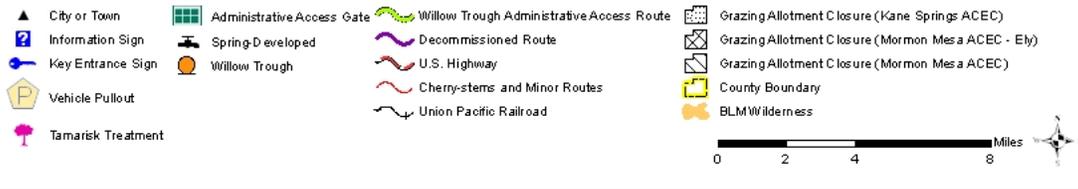
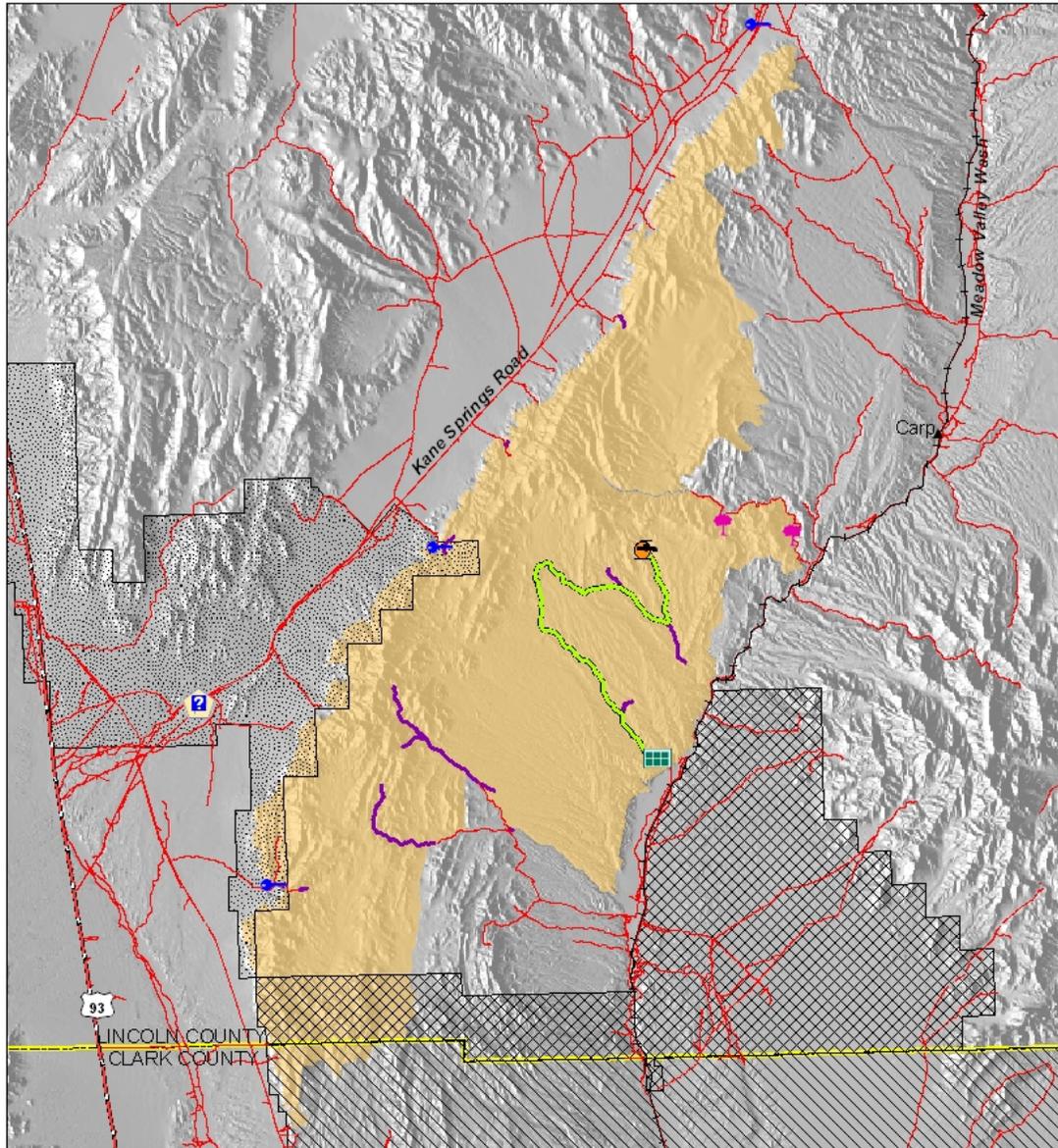
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|-------------------|-------------------------------|--------------------------|
| ▲ City or Town | Interstate Route | ▨ Kane Springs ACEC |
| Directional Sign | State Route | ▩ Mormon Mesa ACEC - Ely |
| Information Sign | U.S. Highway | ▧ Mormon Mesa ACEC |
| Key Entrance Sign | Union Pacific Railroad | ▭ County Boundary |
| | Cherry-stems and Minor Routes | BLM Wilderness |



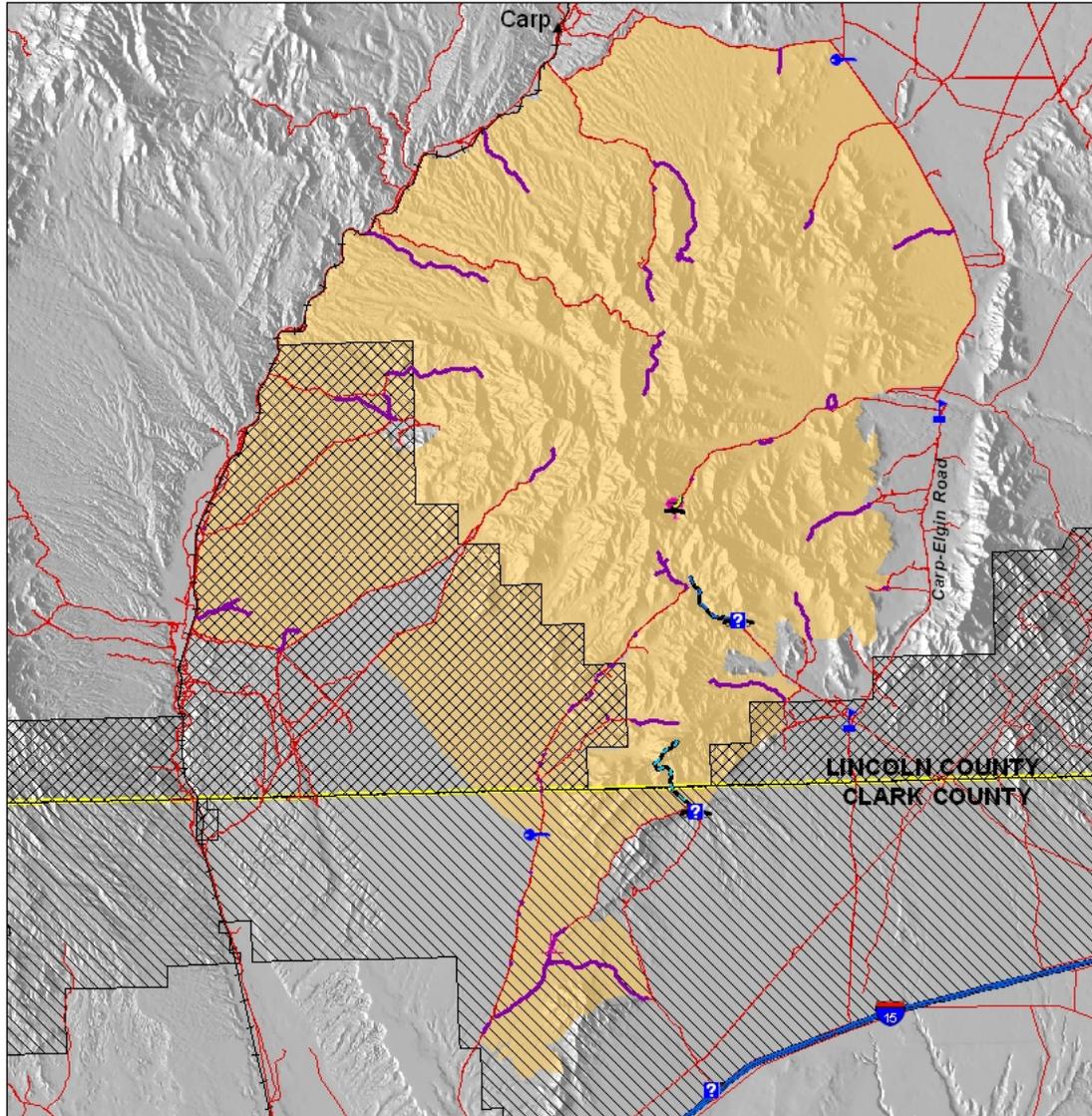
Map 8. Delamar Mountains Wilderness Site-Specific Proposed Actions



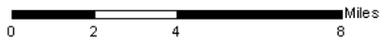
Map 9. Meadow Valley Range Wilderness Site-Specific Proposed Actions



Map 10. Mormon Mountains Wilderness Site-Specific Proposed Actions



- | | | |
|----------------------------|--|--|
| ▲ City or Town | 🟢 Horse Spring Administrative Access Route | 🏠 Grazing Allotment Closure (Mormon Mesa ACEC - Ely) |
| 🚩 Directional Sign | 🟡 Hackberry Spring Trail | 🏠 Grazing Allotment Closure (Mormon Mesa ACEC) |
| 📄 Information Sign | 🟢 Moapa Peak Trail | 🗺️ County Boundary |
| 🔑 Key Entrance Sign | 🟣 Decommissioned Route | 🟡 BLM Wilderness |
| 🏠 Horse Spring-Developed | 🟢 Interstate Route | |
| 🌳 Sahara Mustard Treatment | 🟡 Cherry-stems and Minor Routes | |
| 🌳 Tamarisk Treatment | 🚂 Union Pacific Railroad | |
| 🚚 Staging Area | | |



Vegetation Restoration

The objective of vegetation restoration projects would be to foster indigenous vegetation community resilience and to restore wilderness ecosystem function. This would be accomplished by addressing issues that challenge the Mojave Desert ecosystem functions, such as the establishment of invasive annual grasses that has changed the natural fire regime.

Projects with objectives that fall within the bounds of maintaining or improving wilderness character would be considered. Proposals would be accepted and projects such as the following could be approved:

Vegetation Restoration Management: Proposals would be considered that attempt to restore native vegetation or to enhance the resiliency of impaired vegetation communities. Temporary structures, such as enclosure fences, could be permitted when their presence would contribute to the long-term enhancement of wilderness character.

Wildlife Management Guidelines

Over the life of this Plan it may be necessary to implement wildlife management activities to prevent degradation or enhance wilderness characteristics by promoting healthy, viable, and more naturally distributed wildlife populations and/or their habitats. Wildlife management activities within these designated wilderness areas would be conducted in conformance with the current (2003) and subsequent BLM-NDOW Memorandum of Understanding (MOU) and guided by Lincoln County Conservation, Recreation and Development Act (LCCRDA) (2004), which may include, on a case by case basis, the occasional and temporary use of motorized vehicles or tools. The following three sub-categories are related to wildlife management activities.

Wildlife Water Developments

LCCRDA (2004) permits existing and future structures and facilities, including maintenance and inspections, for wildlife water development projects in wilderness when considered essential to preserve, enhance, or prevent degradation of wilderness character. Wildlife water developments are authorized if the structures and facilities will enhance wilderness values by promoting healthy, viable, and more naturally distributed wildlife populations and the visual impacts



Big Game Water Development in Delamar Mountains Wilderness

can reasonably be minimized. Proposals would be considered for construction of new developments, which may allow motorized and/or mechanized equipment if deemed necessary by the Minimum Requirements Decision Guide (MRDG) and site-specific National Environmental Policy Act (NEPA) analysis.

Maintenance and Inspections — All wildlife water developments encompassed by these wilderness areas require routine monitoring and maintenance. During inspection, water storage levels, wildlife use, and major repair needs are noted, as well as conducting minor repairs. Maintenance requirements include the replacement of plumbing components, tanks, drinkers, pipe, and other miscellaneous associated components. Inspection is conducted by State and federal biologists along with volunteers from a helicopter and by foot on a regular basis. If repair needs are identified during an over-flight inspection and are judged to be critical for the survival of animals, would negate the need for more costly repairs in the immediate future, or minimize resource damage, the helicopter may land to conduct the needed repair. If an emergency repair is conducted, NDOW will notify the BLM of the landing site and repairs they conducted immediately after landing. All other maintenance and repairs conducted with the use of a helicopter or motorized equipment may be allowed based upon District Manager approval.



Small game wildlife water development within Delamar Mountains Wilderness

If approval is granted for the use of a helicopter or motorized equipment to conduct maintenance or repairs the following guidelines will be adhered to:

- Landings would be kept to a minimum.
- Landing sites will be selected to minimize surface disturbance
- Repair requests must be submitted to the BLM with the following:
 - Name and location of the project.
 - Identification of the problem and the repairs needed.
 - Type of motorized equipment
 - Proposed date(s) for the repairs.
 - An estimate of the number of persons to be involved.
 - The number of landings to be made.
- A report will be completed annually by the BLM Wilderness Planner to document all landings and motorized equipment used to conduct maintenance and repairs..

Removal or Replacement — Should removal or replacement be required for existing wildlife water developments, site-specific NEPA analysis would be required.

Thirty-nine wildlife water developments currently exist within these areas (See Maps 3 — 5, Pages 10 — 12). Inspection will take place using non-motorized or mechanized means. Maintenance may require the use of motorized equipment and may be approved on a case by case basis. Construction of new developments may allow motorized equipment if deemed necessary by the Minimum Requirements Decision Guide (MRDG) and site-specific National Environmental Policy Act (NEPA) analysis. The following criteria would be used to identify 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 horses.
- To reduce inter-specific competition between wildlife species
- In suitable wildlife habitat that is water limited.

Wildlife Relocation

According to the BLM-NDOW MOU (2003), wildlife transplants (i.e. removal, augmentation, or reintroduction of wildlife species) may be permitted if judged necessary to perpetuate or recover a threatened or endangered species or to restore populations of indigenous (including sensitive) species eliminated or reduced by human disturbance. Locations outside of wilderness boundaries would be utilized first, and if not available, would be implemented in a manner compatible with wilderness characteristics.



Desert Bighorn Sheep release Delamar Mountains Wilderness

Transplant projects, including monitoring, require advance written approval from the BLM if the action involves ground-disturbing activities, motorized methods, and/or temporary holding and handling facilities. The BLM would provide review to NDOW on all releases near these wilderness areas. Release of wildlife on public lands would be in conformance with BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife and Plants, 1992) and the BLM—NDOW MOU. Minimum Requirements Decision Guide (MRDG) and site-specific National Environmental Policy Act (NEPA) analysis would occur for site-specific actions.

If motorized or mechanized means are authorized, staging would occur outside the wilderness boundary. When feasible, project implementation would occur during periods when visitor use is low (for example, weekdays). In order to inform visitors of impending activity, relocation dates would be posted on the BLM website two weeks in advance.

Wildlife Damage Management

To maintain the areas' natural character, wildlife damage management may be necessary to protect federally listed, declining, and reintroduced indigenous wildlife species; to prevent transmission of diseases or parasites affecting other wildlife and humans; or to prevent serious loss of livestock. Wildlife damage management is only conducted at the request of federal, state, or local agencies, private organizations, and individuals.

Activities would use the minimum amount of control necessary to resolve wildlife damage problems. Acceptable control measures include lethal and non-lethal methods, however, toxicants and M-44 devices (sodium cyanide) are prohibited. Activities would be conducted on foot and may include the use of stock. Use of motorized vehicles, motorized equipment, and/or mechanical transport must be approved by the BLM on a case-by-case basis. Activities occurring in wilderness would be approved by the BLM and conducted in conformance with the BLM-APHIS MOU (1995) and BLM Manual 8560 (Management of Designated Wilderness).

Herd Areas

The Delamar Mountains and Meadow Valley Mountains Herd Areas (HAs) would seek to conform to the Appropriate Management Level (AML) of zero (Ely District Approved Resource Management Plan 2008). Periodic gathers may occur to achieve AML. If gathers are needed, on-the-ground activities within wilderness would be accomplished on foot or by the use of pack stock. If the minimum tool analysis results in motorized means for horse gathers, aircraft, including helicopters, may be used to survey, capture, and monitor wild horses or burros. However, aircraft may not land inside wilderness boundaries except in cases of emergency or by approval from the Ely District Manager. In cases where impacts to springs and riparian systems result from wild horses or burros, mitigation measures may be employed to prevent further degradation or to restore wilderness character.

Fire Management Objectives and Guidelines

Fire management objectives in the wilderness areas would be structured in accordance with the 2008 Ely District Fire Management Plan (FMP). If this FMP is updated over the life of this Plan, the new policies would be followed. According to current FMP, the Fire Management Units (FMUs) that overlap these areas will be managed at 100 percent suppression (See Map 11, Page 44). All fires will be fought aggressively, regardless of size, but utilizing techniques that employ suppression standards necessary to stop the fire with the minimum adverse impact on wilderness characteristics and critical desert tortoise habitat. These ecosystems are not fire adapted; however, fires are fueled by the presence of non-native annual grasses, such as red brome, which increases fire intensity, rate of spread, and fire frequency. This in turn displaces native vegetation and leads to more dense annual grasses. This condition can perpetuate and intensify itself, thereby seriously reducing native vegetation and the habitat it provides for native wildlife. All three areas had extensive fires in 2005 that burned 43.3% of Delamar Mountains

Wilderness, 37.3% of Meadow Valley Range Wilderness, and 21.5% of Mormon Mountains Wilderness. Map 12 (Page 47) depicts the extent of fires in the wilderness areas beginning in 1996, for which data was available.

Appropriate Management Responses (AMRs) would be developed following the initial report for wildland fires in the planning area and would include a range of specific actions including monitoring, confinement, initial attack and suppression/extinguishment, or wildfire suppression with multiple strategies, and may include use of mechanized equipment and retardant. AMR would be determined for each wildland fire based on site factors, including fuel loading and fire behavior, protection of natural and cultural resources, and the circumstances under which a fire occurs, while ensuring the safety of firefighter, the public, and protection of private property. Wildfire management priorities include maintaining native vegetation diversity by managing fire size to minimize the spread and density of noxious or invasive weeds, such as red brome. Minimum Impact Suppression Tactics (MIST) guidelines would be followed in an effort to minimize impacts to wilderness character. Any actions deemed necessary by the Incident Commander for public and firefighter safety would be authorized. The following three sub-categories are related to fire management.



Post-fire Mormon Mountains Wilderness

Fire Suppression Guidelines

Minimum cost and consistency with resource objectives will be considered. The following points would guide suppression within wilderness:

- A Wilderness Specialist would be dispatched to all fires occurring in or threatening a wilderness area.
- Use of any motorized equipment, including heavy machinery such as bulldozers, would be considered for approval by the District Manager in cases where the fire is threatening human life, property, or wilderness characteristics.

- Helibases and helispots would be located outside of wilderness boundaries. When this is not feasible, the District Manager may approve sites within wilderness that require minimal clearing of natural vegetation.
- Staging areas and fire camps requiring motorized access would be located outside of wilderness unless authorized by the District Manager.
- Staging areas and fire camps that only require non-motorized access may be located in wilderness areas if authorized by the Wilderness Specialist.
- Sling loading materials into or out of wilderness using a helicopter must be approved by the District Manager.
- Helicopters or other aircraft may be used for aerial reconnaissance work.
- The Ely District Office Noxious Weed Prevention Schedule as updated, which identifies best management practices, would be utilized. Suppression equipment would be inspected and washed to prevent the spread of noxious weeds. Wash-down sites would be recorded using a Global Positioning System (GPS) unit, if possible, and reported to the Ely District Office Weeds Coordinator. Camps and other assembly points would not be located in noxious weed infestation areas.
- Use of retardant must be approved by the District Manager; if retardant is not approved, water may be dropped from aircraft or bucket as ordered by the Incident Commander without additional authorization.
- All fire suppression activities in wilderness would use MIST guidelines unless a higher degree or level of fire suppression is required.
- Leave No Trace principles would be used in wilderness areas. All evidence of human activity would be removed or rehabilitated to the maximum extent possible.

Suppression Activity Damage

Repair of fire Suppression Activity Damage (SAD) will generally be planned and implemented by the suppression incident organization, prior to demobilization. Repair of SAD may occur with the same type of equipment that was used for the suppression activity. If motorized earth-moving equipment was used to construct fire lines, then the same type of equipment may be needed for rehabilitation and recontouring.

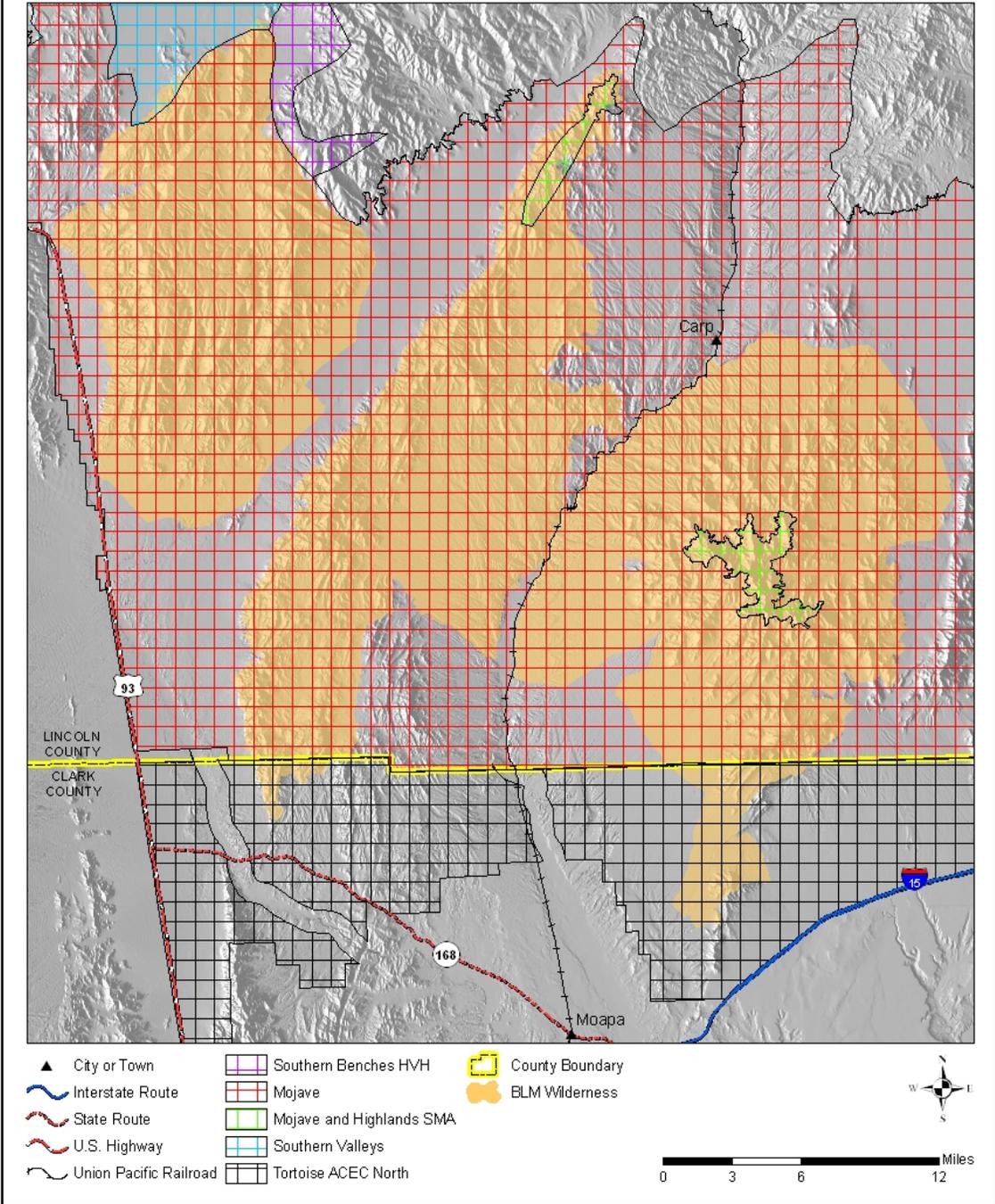
Emergency Stabilization and Rehabilitation Activities

As of the end of 2007, Emergency Stabilization and Rehabilitation (ES&R) actions have been taken to aerially seed 1,430 acres within Meadow Valley Range Wilderness and 2,134 within Mormon Mountains Wilderness. Additionally, forty acres within Mormon Mountains Wilderness were seeded by hand (See Map 12, Page xx). Following site specific assessments and planning, Emergency Stabilization and Rehabilitation (ES & R) activities may be undertaken in accordance with current Department of Interior policy (620 DM 3 Wildland Fire Management Burned Area Emergency Stabilization and Rehabilitation) and Bureau of Land Management policy (H-1742-1 Burned Areas Emergency Stabilization and Rehabilitation Handbook).

The following points would guide ES & R within wilderness:

1. Natural recovery by native plant species is preferable to planting or seeding. The potential for recovery of existing vegetation and the potential establishment of

Map 11. Fire Management Units within Wilderness

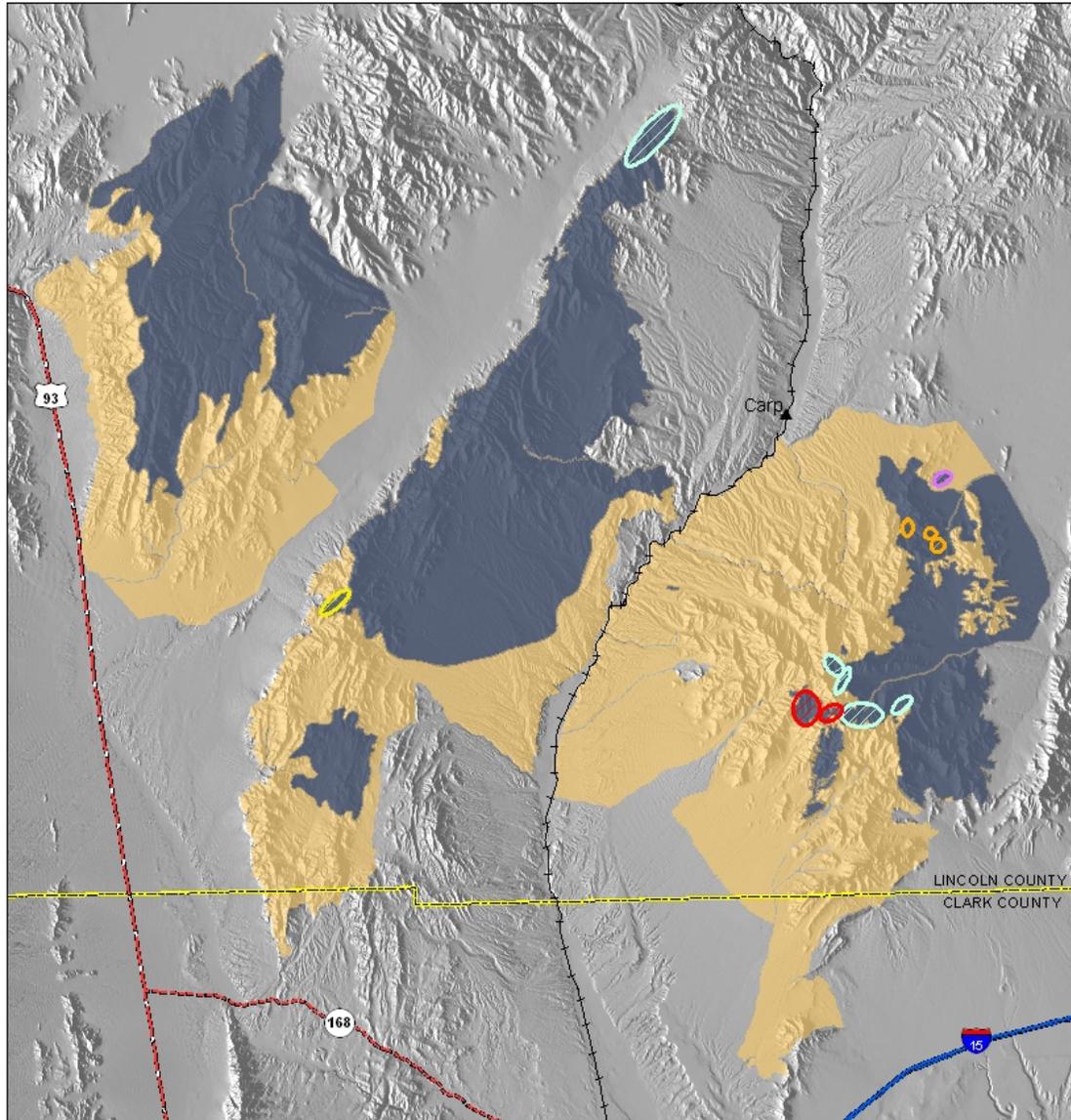


invasive species should be evaluated prior to recommending seeding or planting. Seeding or planting will only be used when objectives cannot be accomplished without seeding or planting and there is a threat to wilderness values if no action is taken. When seeding or planting is recommended, the use of native material, preferably of local genetic stock, will be prioritized. When material of local genetic stock is not available timely or economically, or will not accomplish objectives, then other options may be evaluated.

2. The use of “assisted succession” or other similar techniques that employ the use of non-native species may be approved on a case-by-case basis. The use of non-native seed is appropriate only if 1) Suitable native species are not available; 2) the natural biological diversity of the proposed management area will not be diminished; 3) exotic and naturalized species can be confined within the proposed management area; 4) analysis of ecological site inventory information indicates that a site will not support reestablishment of a species that historically was a part of the natural environment; 5) resource management objectives cannot be met with native species. (H-1745 Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants).
 - “Assisted succession” is a two-phase approach used to prevent an area from being dominated by invasive annual grasses or for manipulating an area that is already dominated by invasive annual grasses. In the first phase, a matrix of perennial plants is established. This matrix may be established using less desirable perennial species such as non-native species, or native species that are not locally adapted. In the second phase, the less desirable perennial plants are replaced or augmented with more desirable perennial plants. The second phase may or may not require active management to remove the less desirable perennials or to introduce more desirable natives. If the less desirable perennials are short-lived, sterile, unable to reproduce successfully on the site, or will not compete well with more desirable natives when those plants become established, then management intervention may not be necessary to remove the less desirable perennials. If native recruitment of more desirable perennials occurs, then secondary seeding may not be necessary. In some cases, selectively removal of less desirable species or secondary seeding may be necessary. Selective removal projects will follow guidelines presented in the Noxious and Non-Native Invasive Weeds section (Page 20).
3. The following activities occurring in Wilderness may be approved on a case-by-case basis and would follow guidelines presented in the Fire Suppression Guidelines section (Page 42):
 - The use of overland motorized equipment.
 - The location of helibases and helispots.
 - Sling loading materials into or out of wilderness using a helicopter.
 - Helicopters or other aircraft for aerial seeding.

4. Temporary structures, such as enclosure fences, early warning flood/evacuation systems, monitoring monuments, or Remote Automated Weather Stations may be approved when their presence would contribute to the long-term enhancement of wilderness character.
5. Erosion control techniques such as the installation of anchored logs, bales, or waddles; the application of mulch, or the use of other techniques to slow water flow may be approved when their presence would contribute to the long-term enhancement of wilderness character, or are necessary to meet ES & R or land use plan objectives.
6. Minor improvements and facilities (e.g., kiosks, fences, enclosures, small water pipelines, interpretive or boundary signs, water control structures, corrals, guzzlers, trails, etc.) burned or damaged by wildfire could be repaired or replaced to pre-fire specifications when this repair or replacement would contribute to the long-term enhancement of wilderness character, or is necessary to meet ES & R or land use plan objectives.
7. Visual inspections for hazardous conditions/materials may be conducted.
8. The removal of hazard trees, where they are a danger to the public, may be conducted.
9. Burned or seeded areas may be temporarily closed to the public if unacceptable resource damage would occur, if danger to the public is present due to fire damage or ES & R activities, or until safety assessments can be completed.
10. Efforts to stabilize and prevent post-fire related degradation to cultural resources including archeological sites, cultural landscapes, traditional cultural properties, and historic structures may be approved.
11. Techniques described in the “Rehabilitation of Small-Scale Surface Disturbances” may be approved for use in ES & R (Page 27).

Map 12. Fire History and Emergency Stabilization & Rehabilitation Treatments



Protection of Archeological Resources and Historic Properties



Pictographs in Mormon Mountains Wilderness

In addition to federal laws, protection of cultural resources for all BLM Ely District Office resource programs are further guided by the Cultural Resource Inventory General Guidelines (1990) and the State Protocol Agreement between the BLM and the Nevada State Historic Preservation Office (as amended 2005). For protection and enhancement of cultural resources, vegetation may be cut back or removed up to several feet from a resource or property such as prehistoric rock art, from wildland fire. This would be accomplished before fire season, with the use of hand tools such as pruning shears and pulaskis. Resource protection and enhancement work would be completed by trained cultural resource specialists or approved District

Archaeological Technicians (DATs) during routine monitoring visits.

Protection of archaeological resources from damage by wilderness visitors may be accomplished with the minimum necessary on-the-ground action. Resources would be monitored to determine conditions. If monitoring reveals that damage is occurring to cultural resources, the BLM Ely District Wilderness Planner and Archaeologist would work together to develop a management strategy for preventing further damage, including but not limited to education, signage, and natural barriers.



Rock Art in Delamar Mountains Wilderness

Every attempt would be made for protection of artifacts in place. If artifacts are discovered in designated trails, foot-worn hiking paths, or other areas of recreational use, the trail may be re-routed, or alternate preservation or protection actions may be taken after consultation with the State Historic Preservation Office according to the standard process followed by the Ely District Archaeologist.

Additionally, inventory for cultural resources would be completed at natural springs in proximity to, or within wilderness, and along access and cherry-stem routes in an effort to inform management of decisions for the protection of these resources. No undertakings would occur prior to completion of cultural resource and consultation processes.

General Recreation Activity Guidelines

A variety of primitive and unconfined types of recreational activities are likely to occur in all three wilderness areas. Management actions that may be initiated in response to recreational impacts include, but are not limited to:

- Public outreach and education in Leave No Trace principles to encourage minimum impact practices.
- Provide information to the public on non-wilderness recreational opportunities in the region.
- Establish protective areas around sensitive resources where recreation activities may be restricted.
- Closure of areas to recreation activities. Examples may include negative impacts to sensitive plant and animal species or water resources.
- Campsite management to maintain use at existing sites and prevent unmanaged site expansion or new site establishment.

Hunting and trapping are permitted in wilderness, subject to applicable State and Federal laws and regulations. Shed antler collection would be permitted for personal use only. These activities are and would likely continue to be popular. The creation or construction of permanent blinds in wilderness areas and wilderness study areas is not allowed (43 CFR 6302.20(f) and IMP Handbook H-8550-1, Chapter I.B.2. and 3.). However, portable or “pop-up” blinds may be temporarily allowed for hunting, photography, wildlife observation and similar purposes for a period of fourteen (14) days if they are packed or carried in and out and do not require the disturbance or destruction of native soil, rock, or vegetation.

Portable and “pop-up” blinds must be attended or occupied at least some portion of a ten day period within the 14 day period of use. If blinds are not attended or occupied for 10 days, they will be considered unattended property and/or permanent structures and will be subject to removal by the BLM (43 CFR 8365.1-2(b)) and subject to disposition under the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 484(m)).

It is suggested that anyone who packs or carries a portable or “pop-up” blind into a wilderness or wilderness study area affix to the blind his or her name, address, phone number, the date the blind was placed, and the dates the blind will be unattended or unoccupied.

Traditional geocaching and letterboxing would not be allowed, however virtual geocaches would be an accepted activity within wilderness. Traditional geocaches and

letterboxes would be removed when encountered, and visitors wishing to participate would be directed to locations outside wilderness.

Recreational horseback riding and use of pack stock animals would be permitted both on and off trail. Other than incidental browsing, riding and pack stock animals may only be fed with packed-in, certified weed-free feed.

According to BLM Wilderness policy, any fuelwood cutting in wilderness would be limited to dead and down material.

Petrified wood may be collected up to 25 pounds plus one piece per person per day, with a maximum of 250 pounds per person per year. Permits are required for pieces over 250 pounds. Petrified wood may not be traded, bartered, or sold without permit. Collection of invertebrate fossils would be allowed for non-commercial purposes.

Cave resources are federally protected and some cave locations may be identified on maps or brochures. Both recreational caving and technical rock climbing would be allowed, however activities should not cause unacceptable impacts to wilderness. Damaging practices, including chiseling or chipping rock, forcibly prying off rock, gluing or otherwise affixing artificial holds on rock and destroying vegetation to enhance a route would be prohibited. Disturbance to cultural resources, as a result of caving and climbing activities would be prohibited in accordance with the Archaeological Resources Protection Act (ARPA) of 1979. The following two sub-categories are related to general recreation activities.

Camping

Backcountry camping would be allowed. Occupying a campsite would be allowed for up to 14 days. Should a visitor wish to camp longer than 14 days, their camp must be relocated a minimum of 25 miles from the previous site (43 CFR 8365.1-2(a), Amended 1993). If monitoring shows that the 14-day stay limit is leading to unacceptable resource impacts, site stay limits of less than 14 days could be implemented. Campfires would be allowed except under fire hazard restrictions. Visitors would be allowed to collect dead and down fuelwood for personal campfires during their trip. Leave No Trace camping techniques would be encouraged through literature and BLM-sponsored Leave No Trace public workshops. If more than two campsites (identified by the presence of a campfire rock ring) are identified within a quarter mile of each other, the least impacted site would be restored to a natural condition to minimize additional camping disturbance. Campsites closer than 300 feet to sole water sources would also be removed in compliance with state regulations.

Managing to Maintain Solitude

These wilderness areas currently enjoy outstanding opportunities for solitude, thus numeric standards for frequency of visitor encounters or group size limits would not initially be established. Large groups inquiring about recreational opportunities would first be directed to locations outside of wilderness, while small groups may be directed to locations within wilderness. If the wilderness character of solitude becomes degraded, the following management actions, in order of priority, may be initiated:

- Educate visitors concerning Leave No Trace recreation ethics to reduce conflict with other visitors.
- Provide information to the public on non-wilderness recreational opportunities in



Solitude in Mormon Mountains Wilderness

- the region.
 - Establish a group size limit of 12.
 - Increase difficulties of access (reduce maintenance levels on access points and boundary roads, limit available public information, limit parking availability, etc.).
 - A combination of the above methods.
 - Plan revision with additional public input to reassess these standards and/or implement more direct controls.

Management of Environmental Education and Interpretation

General interpretive information regarding natural and cultural resources and recreation opportunities in wilderness would be located on kiosks outside of wilderness, in brochures, on BLM recreation maps, and at the BLM Ely District Office website. Wilderness-specific maps would include wilderness area descriptions, designated trails, interpretive information, as well as wilderness ethics and Leave No Trace principles. No interpretive trails would be designated.

When feasible, the BLM would collaborate with other agencies and non-government organizations in the presentation of basic information, including authors of media or guide books.

Public outreach for Leave No Trace recreation ethics would be emphasized using classes and workshops presented at local schools and in the field. A separate wilderness public education plan has been developed for programs related to designated wilderness.

Commercial Use Restrictions

Section 4(c) of the Wilderness Act (1964) prohibits commercial enterprises within wilderness, with the exception of those commercial services listed in Section 4(d) of the Wilderness Act. Commercial enterprises, particularly those that are not wilderness-dependent or do not contribute to wilderness character or public education thereof, including for-profit pine nut harvesting and seed collection, would be prohibited.

Conducting these activities for personal use would be allowed. Section 4(d) (6) of the Wilderness Act allows for commercial services to the extent necessary for activities that are suitable for recreational or other wilderness purposes. Commercial guiding would be permitted for:

- Hunting.
- Academically-oriented organizations whose primary purpose is wilderness or environmental education.
- Organizations whose service is primarily for the support of people with disabilities.

Outfitters and guides would be subject to statewide BLM special permit stipulations for commercial hunting/fishing guides as well as the same regulations as other visitors to these wilderness areas, unless otherwise stated in Special Recreation Permits. Regulations for guides and outfitters would be in conformance with the BLM Ely District Resource Management Plan (RMP), the Wilderness Act (1964), and LCCRDA (2004). Limits on the number of commercial guides may be implemented if monitoring identifies excessive impacts to wilderness character or resources.

Law Enforcement Guidelines

Enforcement of wilderness laws and federal regulations and resource protection services would be performed by uniformed BLM Law Enforcement Rangers. BLM staff, contractors, and volunteers may indirectly assist Rangers by providing information regarding wilderness-related violations. Rangers would conduct patrols within wilderness on foot or horseback and along the perimeter using motorized vehicles. However, pending District Manager approval, motorized equipment, including helicopters may be allowed within wilderness when necessary to meet temporary emergencies involving violations of criminal law and/or including the pursuit of fugitives, or operations involving search and rescue.

Research Guidelines

Research proposals investigating indigenous plant communities, wildlife, cultural resources, and the human dimensions of wilderness would be considered. Proposals must contribute to the enhancement of wilderness character or the improvement of wilderness management. All proposals would be subject to the restrictions and guidelines of the Wilderness Act (1964), LCCRDA (2004), the BLM-NDOW MOU (2003), as well as appropriate guidelines outlined in this Wilderness Management Plan.

Research proposals that do not contribute to the improved management of the area as wilderness would not be permitted if they can be accomplished outside of wilderness and/or cannot be conducted in a manner compatible with the preservation of the wilderness environment.

Research and other studies must be conducted without use of motorized equipment or construction of temporary or permanent structures. Exceptions may be approved for projects that are essential to managing the specific wilderness areas when no other feasible alternatives exist. Such use must be necessary to meet the minimum requirements for administration of the area as wilderness and must not degrade wilderness character. A site-specific NEPA analysis would have to be prepared for the authorization of any exceptions.

Water Rights

The BLM may seek to acquire additional water rights within the wilderness areas compliant with Nevada state water law. Existing water rights may be purchased from willing sellers or shared with other agencies through cooperative agreements. The BLM may also file application for additional water rights where water in excess of existing permitted rights can be shown to exist. Newly acquired water rights would only be used to sustain riparian habitat, provide water to wildlife, or support recreation. All water rights actions would be in conformance with LCCRDA (2004). However, new water resource developments not related to wildlife are prohibited by LCCRDA (2004).

Structures, Installations and Other Human Effects or Disturbances

Summit registers would not be removed. Other structures and installations may be removed if they are not the minimum necessary for the administration of the area as wilderness, or if they are not associated with a prior use or valid existing right.

BLM staff and volunteers that monitor wilderness would be given instructions on the identification of human effects that would be considered unattended personal property or refuse. Unattended personal property not associated with an active camp, including geocaches, would be removed by BLM personnel, and temporarily held at the appropriate BLM District or Field Office. If possible, the owner of the personal property would be contacted. In the case of a traditional geocache, the BLM would request that it be removed. In the instance that a virtual geocache identifies a sensitive site (such as cultural or biological) the sponsor will be asked to remove the cache from the internet. Human effects for which questions of age exist would be photographed for further consideration by an archaeologist. Disturbance of cultural resources will be minimized. Cultural resources will be left in place unless other protection measures are insufficient, and disturbance is deemed a last resort. Disturbance of cultural resources would not occur without full compliance with mitigation and protection requirements and processes.

Where mine adits or shafts are found in these wilderness areas, they may be closed in order to promote wilderness character and public safety using conforming actions such as, but not limited to, hand tools, foam plug, and dynamite filling. NEPA and Minimum Requirements Decision Guide (MRDG) analyses would be required for non-conforming

actions including, but not limited to, bulldozers and bat gates. If mine adits or shafts are proposed for closure, bat and cultural surveys would be conducted.

Guidelines for Military Operations

Military training exercises would not be located within the three wilderness areas. Guidelines for handling military operations would distinguish between non-emergency and emergency situations. Non-emergency incidents might include such activities as the release of low-level flares, the recovery of aircraft parts, or the salvage of non-operational ordinance. Emergency situations may include, but are not limited to, the retrieval of downed aircraft, the rescue of pilots, or the recovery of live ordinance.

Non-emergency military actions **may** be approved on a case-by-case basis following MRDG analysis, environmental assessment, and authorization from the Ely BLM District Manager. The Ely District Office Noxious Weed Prevention Schedule (i.e., equipment inspection and washing, recording of wash-down sites, notification of the weeds coordinator, and avoidance of noxious weed infestation areas) will be utilized for non-emergency actions, as will Leave-No-Trace principles. All evidence of human activity would be removed to the maximum extent possible.

Emergency military actions involving prohibited uses identified in Section 4(c) of the Wilderness Act (1964) (e.g. motorized vehicles and mechanized equipment, mechanical transport, landing of aircraft etc.) will be permitted within wilderness without prior analysis, assessment, or authorization provided the 99CES/CC (Commander of the Civil Engineering Squadron of the 99th Airbase Wing at Nellis Air Force Base) notifies the Ely BLM District Manager at the onset of the emergency or immediately thereafter.

Monitoring Program

Monitoring tracks the outcome of proposed activities on the qualities of wilderness character previously defined (Page 13). A single activity is likely to affect several qualities of wilderness character. For example, an activity such as weed control is intended to restore natural conditions over the long term but may diminish the untrammelled condition of the wilderness in the short term. These two separate outcomes, the improvement of “naturalness” and decreased “untrammelled nature,” will be monitored separately.

On the other hand, separate activities undertaken for different purposes may cumulatively diminish the same qualities of wilderness character. For example, a trail might be designated to control visitor impacts on vegetation. In the same vicinity, a fence or barrier may be in place to protect sensitive resources from recreational impacts. Though the two activities are unrelated, both activities have an effect on the “undeveloped” quality of wilderness character. Monitoring the effects of single activities to multiple qualities of

wilderness character will improve understanding of the effects upon wilderness character in combination and over time.

Effects of intentional, unintentional, and unauthorized activities will be captured under the monitoring system. The monitoring program will provide a greater understanding of the overall and specific condition of each wilderness area. Information generated in monitoring wilderness conditions will indicate: 1) the current state of wilderness character; 2) how wilderness character is changing over time; 3) how stewardship actions are affecting wilderness character; and 4) what stewardship priorities and decisions would best preserve and sustain wilderness character. Monitoring will also provide Wilderness Managers with more complete information, which will improve the evaluation of future proposed activities. However, monitoring will not be used to compare conditions and changes within these wilderness areas with other wilderness areas in the National Wilderness Preservation System. The following monitoring is associated with specific wilderness characteristics.

Untrammeled

- ❖ A log of all annual management and other activities that control or manipulate flora, fauna, soils, water, or natural disturbance factors present in the wilderness would be maintained in each area's permanent wilderness file. A description, location, purpose, and expected outcome of each activity would be documented. Activities that may be tracked include:
 - Campsite expansion and dispersion.
 - Rehabilitation projects.
 - Vegetation restoration and fuels treatment projects.
 - Fire suppression activities.
 - Emergency Stabilization and Rehabilitation activities.
 - Treatments of noxious or invasive vegetation.
 - Wildlife management activities.
 - Periods of livestock grazing.
 - Cultural and historic resource protection projects.

Solitude and Primitive, Unconfined Recreation

- ❖ A log of sights and sounds of civilization would be maintained in each area's permanent wilderness file. A description and location of the activity inside or outside wilderness would be documented.
- ❖ A log of all regulations or restrictions occurring in the wilderness areas will be maintained in each area's permanent wilderness file. A description of the regulation and its purpose will be documented.
- ❖ Visitor use encounters on designated trails would be monitored through one or more of the following methods:
 - Visitor sign-in and comment forms at trailheads and access points.
 - Public comment received by mail or by e-mail.

- Automated visitor counters may be located at trailheads or access points.
- Wilderness rangers or volunteer stewards would visit trailheads and access points at least once every two months to record the number of vehicles and collect written comments or other trail data.
- ❖ Wilderness rangers or volunteer stewards would hike each trail at least twice a year to record the number of encounters and trail conditions. Trail conditions would be recorded using a Global Positioning System (GPS) and photos would be taken as needed.
- ❖ The wilderness areas would be monitored at boundary roads and access points at least once every three months by wilderness staff and law enforcement rangers or volunteer stewards to detect any unauthorized uses. Additionally, over-flight and aerial surveillance monitoring will occur twice annually to assist in detecting unauthorized uses.
- ❖ Campsites would be recorded by the wilderness ranger to assure compliance with Plan standards. GPS coordinates and photos would be taken for campsites to track long-term trends.
- ❖ Popular hunting areas would be monitored regularly for motorized trespasses, foot-worn hiking paths, and proliferation of campsites during hunting season by wilderness rangers, law enforcement rangers, or volunteer stewards.

Undeveloped and Natural Appearance

- ❖ A log of all the developments, structures, and facilities present in the wilderness areas, both permanent and temporary, would be maintained in each area's permanent wilderness file. A description, location, purpose, and expected outcome of the feature would be documented.
- ❖ All former vehicle routes and other rehabilitated disturbances will be assessed for motorized use at least twice a year. Photo points would be established at the time of reclamation, and photos will be taken as part of the semi-annual monitoring. If unauthorized vehicle use or other forms of disturbance continue, modifications as described in the Plan would be made.
- ❖ All designated administrative access routes will be checked at least twice a year to assess compliance with grazing permits.
- ❖ Popular hunting areas within these wilderness areas will be monitored at the end of hunting season and structures associated with hunting, such as illegal and unauthorized blinds, will be removed.

Naturalness and Primeval Character

- ❖ A log of all known human alterations to the ecosystem will be maintained in each area's permanent wilderness file. A description and location will be documented or referenced. Conditions that may be tracked include:
 - Noxious and invasive weeds.
 - Special status species.
 - Air quality.
 - Presence, abundance, and distribution of native species.

- ❖ A log of natural disturbances will be maintained in each area's permanent wilderness file. A description and location will be documented or referenced. Activities that may be tracked include:
 - Fire.
 - Flood.
 - Insect or disease outbreaks.

- ❖ Monitoring for noxious and invasive weeds will occur at least once a year, with an emphasis at springs, on trails, known weed infestations, or in washes receiving regular visitor use.

- ❖ Wildlife monitoring will be accomplished primarily by NDOW and the United States Fish and Wildlife Service, according to the agencies' established protocol. The BLM wilderness rangers will also record wildlife sightings, in particular for nesting raptors, special status species, and bighorn sheep. Monitoring or research by other entities may occur according to protocol described in the Plan.

- ❖ Findings, or a reference to the findings, from inventory, monitoring, and research projects will be included in each area's wilderness file. Other documented research outside of wilderness but applicable to the understanding of wilderness ecosystems may be referenced.

- ❖ Monitoring to assess the effects of recreation on wildlife habitat use and behavior will occur if feasible monitoring methods are developed

- ❖ Monitoring will be included to account for changes to the natural fire cycle occurring from introduced annual grasses. This additional monitoring will aid fire management in determining AMR on an annual basis. For fires having greater potential to convert native vegetation to unnatural annual grass-dominated vegetation, fire management will have better information to adjust response to the most active suppression response compatible with the fire management objectives and procedures for the area.

- ❖ Monitoring archaeological resources and historic properties regularly by BLM staff, volunteers, and through the cultural site steward program will be done frequently at known sites and for areas of high visitor use.

Monitoring of Site-Specific Actions

❖ Additional monitoring will occur for the following site-specific actions associated with the attached Environmental Assessment in order to ensure that wilderness character is protected and that undue impacts to other resources are not occurring as a result of the proposed actions:

- Success of weed treatments.
- Use of administrative access routes and gates.
- Success of small-scale surface disturbance reclamation.
- Recreational use of designated trails.
- Use of staging areas.
- Effectiveness of sign plan.

Plan Evaluation

All field reports, photographs, and monitoring data will be maintained in the official wilderness files at the BLM Ely District Office. The Plan will be revised when the management actions prescribed no longer meet the wilderness management objectives, or when a change in the existing situation warrants revised management. The need for revision will be reviewed every five years. If the decision is made to revise the Plan, it will be accomplished with public participation. Minor revisions such as typographical or cartographical errors may be made by inserting an errata sheet.

Plan Implementation Sequence

Management of the Delamar Range, Meadow Valley Range, and Mormon Mountains Wildernesses will be carried out in accordance with this Plan under the direction of the Ely BLM District Office wilderness staff. Other BLM staff and volunteers may be called upon for support or resource expertise. Four types of management activities may occur. These types of management activities may be completed based upon the NEPA analysis done for this plan:

- ❖ Ongoing activities carried out through the life of the Plan.
- ❖ Activities that will be implemented as special projects at the beginning of the plan. The following two types of management activities will require action-specific NEPA analysis before they can be completed.
 - Management activities triggered by changes in conditions as detected through monitoring.
 - Activities that may be proposed in the future for which general guidance exists in the plan, or that may not be addressed in the plan.

The following list shows the priority sequence for accomplishing management activities of this Plan. The actual implementation could be altered based on funding and staff availability outside the control of this Plan.

Ongoing Activities

- ❖ Maintenance of boundary signs.
- ❖ Trail, vehicle access point, and staging area construction and maintenance.
- ❖ Vegetation clearing around archaeological resources.
- ❖ Wilderness monitoring;
 - Visitor use monitoring.
 - Natural resource monitoring.
 - Trail condition monitoring.
 - All other wilderness character monitoring.
 - Visitor information dissemination.

Site-Specific Projects

Implementation would not require additional NEPA analysis for the following projects because they are analyzed in the EA associated with this Plan:

- ❖ Archaeological, botanical and threatened and endangered species clearances to support Plan implementation.
- ❖ Write and publish supplemental rules for all visitor use standards established in the Plan as specified under 43 CFR 8365.1-6.
- ❖ Reclamation;
 - Former vehicle routes.
 - Campsites.
 - Prospecting disturbance.
 - Vehicle access parking points established.
- ❖ Staging areas developed as appropriate.
- ❖ Signing;
 - Trailhead, vehicle access points and staging area wilderness information and signs.
 - Off-site information signs..
 - Public access signage.
- ❖ Removal of unnecessary structures and installations.
- ❖ Maintenance, modification, or removal of livestock developments as appropriate.
- ❖ Herbicide treatments for Tamarisk and Sahara mustard.

Changing Conditions Requiring Subsequent NEPA Analysis

- ❖ New visitor impacts.
- ❖ Fire rehabilitation/ES & R projects
- ❖ Additional trail designation;
 - Trail preparation (improvement of sections not currently within standards).
 - Trailhead development.
- ❖ New trail construction.
- ❖ Trail reconstruction or stabilization.
- ❖ New vehicle access point or staging area construction.
- ❖ Management of social conditions;
 - Visitor use regulations and/or supplemental rules.
 - Group size limits.

- New sign or kiosk installation.
- ❖ NEPA following non-conforming fire management and suppression actions (such as the use of a bulldozer).
- ❖ Large weed control projects.

Potential Future Proposals Requiring Subsequent NEPA Analysis

- ❖ Riparian area restoration to mitigate wild horse and livestock grazing impacts.
- ❖ Vegetation restoration projects.
- ❖ Emergency Stabilization and Rehabilitation projects.
- ❖ Guiding permits.
- ❖ Wildlife projects.
- ❖ Research on natural or cultural resources.
- ❖ Herbicide use for noxious and invasive plant species control on additional infestations.

DRAFT

**U.S. Department of the Interior
Bureau of Land Management
Nevada State Office
Ely District Office and Las Vegas Field Office**

**Delamar Mountains Wilderness
Meadow Valley Range Wilderness
Mormon Mountains Wilderness**



Desert Tortoise in Mormon Mountains Wilderness

Environmental Assessment NV-040-08-14

February 24, 2009

Background Information

Introduction

The Bureau of Land Management Ely District Office proposes to write a Wilderness Management Plan (WMP) for the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas during fiscal year 2009. These areas are located approximately 50 to 75 miles northeast of Las Vegas, Nevada (See Map 1, Page 5) and were designated as wilderness by the Lincoln County Conservation, Recreation and Development Act of 2004 (LCCRDA; Public Law 108-424 November 30, 2004).

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

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

Additionally, the wilderness areas may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These supplemental values are optional wilderness characteristics which need not be present for an area to meet the definition of wilderness.

This EA is tiered to the following Environmental Assessment:

- Wilderness Disturbance Reclamation Environmental Assessment (NV-040-05-010).

Purpose and Need

The purpose of a wilderness management plan is to preserve the areas' wilderness characteristics by identifying the conditions and opportunities that will be managed for

within wilderness, creating specific guidelines for managing wilderness resources and activities, and identifying management needs outside of, and immediately adjacent to these areas over an approximately ten-year span.

The need for the proposed action stems from the Wilderness Act of 1964, which mandates that the primary management direction is to preserve wilderness character, and BLM Manual 8560, Management of Designated Wilderness Areas, which states in Section .2.21, “A wilderness management plan must be developed for each BLM-administered wilderness area.” The proposed action would create specific guidance to achieve this mandate.

Relationship to Planning

This Environmental Assessment has been analyzed within the scope of the Ely District Approved Resource Management Plan (2008) and has been found to be in conformance with the goals, objectives, and decisions of the Decision Summary and Record of Decision.

BLM planning regulations (43 Code of Federal Regulations 1610.3.2[a]) require that BLM resource management plans be consistent with officially approved 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. Although this regulation does not apply to other official plans created after the land use plan is implemented, the BLM strives for management decisions to be consistent with other official plans.

Compliance with Laws, Statutes, and Regulations

The proposed action and alternative action are in compliance with the following laws:

- The Wilderness Act of 1964 (16 U.S.C. §§ 1131-1136, September 3, 1964, as amended 1978).
- The Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996).
- The Lincoln County Conservation, Recreation and Development Act of 2004 (Public Law 108-424).
- The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994).
- The Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984, and 1988).
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d, June 8, 1940, as amended 1959, 1962, 1972, and 1978).
- Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989).
- Executive Order 13186—Responsibilities of Federal Agencies to Protect Migratory Birds (2001).
- Management of Designated Wilderness Areas (43 CFR Part 6300).

- Recreation Management Restrictions: Occupancy Stay Limitation (43 CFR 8365.1-2(a) and Federal Register Notice NV-930-4333-02).
- Unlawful Manner of Camping Near Water Hole (Nevada Revised Statute 503.660).
- Executive Order 13112: Invasive Species (1999)
- Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation (2007).
- National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470 as amended through 2000).
- Federal Property and Administrative Services Act of 1949 (40 U.S.C. as amended through P.L. 106-580, Dec. 29, 2000).
- Archaeological Resources Protection Act of 1979, As Amended (Public Law 96-95; 16 U.S.C. 470aa-mm)
- Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195).

Relationship to Policies and Guidelines

The proposed action and alternative action are in conformance with the following guidelines and manuals:

- Grazing Guidelines (House Report No. 101-405, Appendix A).
- Wildlife Management Guidelines (House Report No. 101-405, Appendix B).
- Management of Designated Wilderness Areas (BLM Manual 8560).
- Wilderness Management Plans (BLM Manual 8561).
- BLM Emergency Stabilization and Rehabilitation Handbook (1742-1).

Issues

Issues addressed in the Wilderness Management Plan (Part 1 of this document) were identified through internal and public scoping. Internal scoping was done via meetings and written communications with BLM resource specialists. Public scoping was conducted in the form of public workshops, meetings, written letters, email, and by BLM staff. For details, see the Wilderness-Specific Issues section on Page 13 of the WMP.

All resources considered or analyzed in this Environmental Assessment are displayed in Table 2 of in this EA (See Page 73). All issues and concerns received through internal and external scoping that relate to wilderness resource conditions were considered during the development of the range of alternatives. Certain issues and concerns were judged to be out of the scope of this analysis. For further detail see Table 2 and the Alternatives Considered but Eliminated from Detailed Analysis on Page 73.

Description of the Proposed Action and the No Action

Proposed Action

The Wilderness Management Plan (WMP) in Part 1 of this document is proposed for implementation. The proposed action (The WMP) consists of the following Wilderness Management Categories that relate to either specific resources or resource programs administered by the Ely BLM District Office. These categories are briefly described in the EA with a reference to the detailed description contained within the WMP. The first six Wilderness Management Categories contain site-specific proposed actions. The remainder outlines general guidelines for each resource or resource program activities operating within wilderness. Although the Plan would not administer these resource programs, resource activity plans have been evaluated to ensure conformity with laws, management goals, and objectives for these wilderness areas.

No Action

The No Action alternative describes what would occur within each category if a wilderness management plan was not adopted. This alternative provides a baseline for comparison.

Wilderness Management Categories

Noxious and Non-Native Invasive Weed Guidelines

Proposed Action

Current noxious and invasive weed infestations include, but are not limited to: red brome (invasive), cheatgrass (invasive), Sahara mustard (noxious, category B), and Tamarisk (noxious, category C). Management emphasis in wilderness would be placed on controlling small infestations with the potential to spread and displace native plants. Treatments for large infestations (defined by the BLM Ely District Weeds Coordinator) would be considered separately. Site-specific actions would treat known infestations of Tamarisk and Sahara mustard. Treatment methods include hand pulling, herbicides, biological control, reseeding, and alternatives such as targeted grazing. The detailed description, including treatment methods, is found in the WMP starting on Page 20 (See Maps 8 – 10, Pages 35 – 37).

No Action

There is currently no existing management plan with which to treat invasive grasses such as red brome in wilderness. Noxious weeds would be treated on a case-by-case basis as per the District Noxious Weed Plan. The BLM's noxious weed classification system

(which is described in the BLM Manual 9015 Integrated Pest Management) would be consulted in setting priorities for weed control.

Livestock Grazing Guidelines

Proposed Action

Grazing would continue under federal regulations to meet the Mojave – Southern Great Basin Resource Advisory Council Standards. Activities and the necessary facilities used to support livestock grazing would be permitted to continue in wilderness. Planning related to grazing operations would be guided by the Congressional Grazing Guidelines (House Report 105-405 Appendix A, 1990) and the BLM Manual 8560 (Management of Designated Wilderness Areas). Site-specific actions relate to administrative access needs of specific grazing allotments. Detailed description, including maps and tables, is found in the WMP starting on Page 23 (See Maps 6 & 8 – 10, Pages 26, 35 – 37).

No Action

No difference from the proposed action except no administrative access routes would be designated and all requests may be approved on a case-by-case basis.

Management of Small-Scale Surface Disturbances

Proposed Action

Disturbances fall into two categories with common characteristics: small-site disturbances including abandoned developments, mining claims, and dispersed campsites; and linear disturbances created by motorized vehicle traffic that are largely denuded of vegetation. Environmental Assessment (EA) NV-040-05-010 (Wilderness Disturbance Reclamation), as well as the EA associated with the WMP, may be referenced for approved methods for decommissioning former vehicle routes and rehabilitating small-site disturbances. Methods include decompaction, scarifying/pitting, recontouring, vertical mulching, erosion control, desert varnish colorant, and vegetative restoration. The WMP provides a detailed description starting on Page 27 (See Maps 8 – 10, Pages 35 – 37).

No Action

Based on routine monitoring, reclamation activities would occur as necessary on a case by case basis according to methods and standard operating procedures as outlined in the Wilderness Disturbance Reclamation Environmental Assessment NV-040-05-010.

Management and Designation of Trails

Proposed Action

The proposed action identifies specific designated trails and how designated and foot-worn hiking paths would be managed. The WMP provides a detailed description, including trail guidelines starting on Page 29 (See Maps 8 – 10, Pages 35 – 37).

No Action

No trails would be designated but 92 miles of existing former vehicle routes – 20.3 miles in the Delamar Mountains Wilderness, 27.4 miles in the Meadow Valley Range Wilderness, and 43.5 miles in the Mormon Mountains Wilderness – would be treated as foot-worn hiking paths and be reclaimed according to existing BLM policy. Cattle, wild horse, or game trails would also be treated as foot-worn paths. These paths would not be displayed or described on BLM maps or brochures and would be monitored according to existing BLM policy.

Management of Vehicle Access Points and Designation of Staging Areas

Proposed Action

The proposed action outlines management actions designed to protect wilderness character near heavily used access points into wilderness now and in the future. Detailed description, including maps, is found in the WMP starting on Page 31 (See Maps 8 – 10, Pages 35 – 37).

No Action

Visitors would be able to park their vehicles and access wilderness from any public point outside of the wilderness boundary. No vehicle staging areas would be designated or defined to direct recreational use to most desired and suitable access points.

Sign Plan

Proposed Action

The proposed action outlines general guidelines for future sign placement and a site-specific proposal for kiosk and informational sign placement. Detailed description, including maps, is found in the WMP starting on Page 32 (See Maps 8 – 10, Pages 35 – 37).

No Action

Only current wilderness boundary markers would be maintained.

Vegetation Restoration

Proposed Action

Vegetation restoration project proposals would be considered based on the guidelines outlined in the WMP starting on Page 38 (See Maps 8 – 10, Pages 35 – 37).

No Action

No difference from the proposed action.

Wildlife Management Guidelines

Proposed Action

Management of wildlife is the responsibility of the Nevada Department of Wildlife. Management of wildlife habitat is the responsibility of the BLM. Over the life of this plan it may be necessary to implement wildlife management activities to prevent degradation or enhance wilderness characteristics by promoting healthy, viable, and more naturally distributed wildlife populations and/or their habitats. Detailed guidelines are found in the WMP starting on Page 38. Categories related to wildlife management are as follows:

- ***Wildlife Water Developments***
- ***Wildlife Relocation Activities***
- ***Wildlife Damage Management***

No Action

A comprehensive wilderness management plan would not guide wildlife related management categories. Activities within these wilderness areas would be conducted in conformance with the current (2003) and subsequent BLM-NDOW Memorandum of Understanding (MOU) and guided by Lincoln County Conservation, Recreation and Development Act (LCCRDA) (2004), as well as BLM-APHIS MOU (1995) and BLM Manual 8560 (Management of Designated Wilderness).

Herd Areas

Proposed Action

The BLM Ely District Office Wild Horse Program's activity plans guide the management of wild horses and burros. Herd Areas that exist in the Meadow Valley Range Wilderness seek to conform to an Appropriate Management Level of zero. However, periodic gathers may still occur in wilderness. On-the-ground management activities would be accomplished on foot or by the use of pack stock. Detailed guidelines are found in the WMP starting on Page 41.

No Action

No difference from the proposed action.

Fire Guidelines

Proposed Action

Fire management objectives in these wilderness areas would be structured in accordance with the 2008 Ely District Fire Management Plan (FMP). If this FMP is updated over the life of this Plan, the new policies would be followed. Following fire, Emergency Stabilization and Rehabilitation (ES & R) activities may be undertaken in accordance with current Department of Interior policy (620 DM 3 Wildland Fire Management Burned Area Emergency Stabilization and Rehabilitation) and Bureau of Land Management policy (H-1742-1 Burned Areas Emergency Stabilization and Rehabilitation

Handbook). Detailed guidelines, including maps are found in the WMP starting on Page 41. Categories related to fire management are as follows:

- *Fire Suppression Guidelines*
- *Suppression Activity Damage*
- *Emergency Stabilization and Rehabilitation Activities*

No Action

Fire management activities would occur without the guidance of a comprehensive wilderness management plan.

Protection of Archaeological Resources and Historic Properties

Proposed Action

In addition to federal laws, protection of cultural resources for all BLM Ely District Office resource programs is further guided by the Cultural Resource Inventory General Guidelines (1990) and the State Protocol Agreement between the BLM and the Nevada State Historic Preservation Office (as amended 2005). Protection involves both monitoring and inventory. Specific guidelines for the protection of cultural resources are found in the WMP starting on Page 48.

No Action

No special actions would be taken to protect archaeological resources and historic properties. All laws regarding the protection of these resources, such as the Archaeological Resources Protection Act of 1979 (ARPA) and the National Historic Preservation Act of 1966 (NHPA), would apply.

Management of General Recreation Activities

Proposed Action

General recreation activities include hunting, trapping, shed antler and petrified wood collection, horseback riding, caving, climbing, hiking, and backpacking. Detailed guidelines for current and potential future management related to these activities are found in the WMP starting on Page 49. Categories related to general recreation management are as follows:

- *Camping*
- *Managing for Solitude*

No Action

No specific management actions would be taken regarding general recreational activities allowed in wilderness. Campsites would not be moved or rehabilitated.

Management of Environmental Education and Interpretation

Proposed Action

On and off site general interpretive information regarding natural and cultural resources and recreation opportunities in wilderness would be located on informational signs outside of wilderness, in brochures, on BLM recreation maps, and at the BLM Ely District Office website. Detailed guidelines for general interpretive information regarding natural and cultural resources and recreation opportunities in wilderness are found in the WMP starting on Page 51.

No Action

The BLM developed a wilderness public education plan for programs related to wilderness. This plan would be implemented without the guidance of a comprehensive wilderness management plan.

Commercial Use Restrictions

Proposed Action

Section 4(c) of the Wilderness Act (1964) prohibits commercial enterprises within wilderness, with the exception of those commercial services listed in Section 4(d) of the Wilderness Act. Details on commercial uses allowed in wilderness, including guide services, are found in the WMP starting on Page 51.

No Action

There would be no difference from the proposed action.

Law Enforcement Guidelines

Proposed Action

Enforcement of wilderness laws and federal regulations and resource protection services would be performed by uniformed BLM Law Enforcement Rangers on foot or horseback and along the perimeter using motorized vehicles. Detailed guidelines regarding law enforcement in wilderness are found in the WMP starting on Page 52.

No Action

Current laws, policies, and guidelines would be followed without the guidance of a comprehensive wilderness management plan.

Research Guidelines

Proposed Action

Research proposals investigating indigenous plant communities, wildlife, cultural resources, and the human dimensions of wilderness would be considered. Detailed

guidelines regarding appropriated research proposals and subsequent approval within wilderness are found in the WMP starting on Page 52.

No Action

Scientific research proposals would be considered that adhere to current laws, policies, and guidelines, but would be implemented without the guidance of a comprehensive wilderness management plan.

Water Rights

Proposed Action

The BLM would adhere to Nevada state water law and would seek to acquire water rights to sustain riparian habitat, provide water to wildlife, or support recreation. For details see the WMP starting on Page 53.

No Action

No difference from the proposed action.

Structures, Installations and Other Human Effects or Disturbances

Proposed Action

BLM staff and volunteers monitoring wilderness would be given instructions on the identification of human effects that would be considered unattended personal property or refuse and unattended personal property not associated with an active camp, including geocaches, would be removed by BLM personnel, and temporarily held at the appropriate BLM District or Field Office. Detailed guidelines regarding this category are found in the WMP starting on Page 53.

No Action

Current laws, policies, and guidelines would be followed without the guidance of a comprehensive wilderness management plan.

Guidelines for Military Operations

Proposed Action

Military training exercises would not be located within wilderness. Guidelines for handling military operations would distinguish between emergency and non-emergency situations. Non-emergency incidents include release of low-level flares, recovery of aircraft parts or retrieval of non-operational ordinances. Emergency situations include downed aircraft or pilot and some classes of live ordinance. Detailed guidelines for potential military operations are found in the WMP starting on Page 54.

No Action

Current laws, policies, and guidelines would be followed without the guidance of a comprehensive wilderness management plan.

Additional Action Alternatives

Other Action Alternatives

No other action alternatives were needed to address unresolved conflicts concerning uses of available resources.

Alternatives Considered but Eliminated from Detailed Analysis

Installation of a staging area, pullout, and a kiosk was discussed for the Tri-canyon area in the Meadow Valley Range Wilderness. However, access to this area is currently prevented by a Habitat Conservation Plan (HCP) that is being developed by Coyote Springs Development that if adopted as is would, other than administrative access, only allow foot and horse travel on the 4WD access route to Tri-canyon that passes through their lands. This plan does not have the authority to change their HCP parameters. If the final approved HCP changes and Coyote Springs' developers want to coordinate with the BLM, we will revisit the possibility of installing a staging area and pullout.

Affected Environment and Environmental Consequences

Introduction

The scope of this Environmental Assessment (EA) analysis comprises the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas located in Lincoln and Clark Counties in the Mojave Basin and Range ecoregion. The BLM's NEPA Handbook (H-1790-1) requires that all EAs address specific resources or concerns of the human environment. The list of elements contained in the handbook has been expanded by BLM Instruction Memoranda and Executive Orders. These mandatory items along with the rationale for including or not including them in this analysis are listed in Table 2. Resources not adversely affected will not be considered further in this document.

Mandatory Items for Consideration

The following items have been evaluated for the potential for impacts to occur, either directly, indirectly or cumulatively, due to implementation of the proposed action. Consideration of some of these items is to ensure compliance with laws, statutes, or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely BLM in

particular. Following the table, each analyzed resource/concern is organized into two parts; Affected Environment and Environmental Consequences.

Table 2. Mandatory Items for Consideration.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
<i>Air Quality</i>	N	Proposed Action would not increase air pollutant concentrations
<i>Cultural Resources</i>	N	All ground disturbing activities will be subject to National Historic Preservation Act (1966) Section 106 review and SHPD consultation as per BLM Nevada's implementation of the Protocol for cultural resources. All proposed activities and disturbances must avoid cultural resources. Prior to proposed ground disturbing activities, all project areas will be inventoried to identify possible cultural resources. A cultural resources inventory needs assessment would be completed and recommendations would be followed.
<i>Environmental Justice</i>	N	No minority or low-income groups would be affected by disproportionately high and adverse health or environmental effects.
<i>Fire Management</i>	Y	Fire management action may affect wilderness character.
<i>Fish and Wildlife</i>	Y	No fish present. Proposed action, including designation of trails, trailheads, and staging areas, may impact individual animals.
<i>Floodplains</i>	N	Resource not present.
<i>Forest and Rangeland Health</i>	N	The Mojave/Southern Great Basin Resource Advisory Council sets the standards and guidelines for this resource. The proposed action does not impact this guidance. The range and wild horse programs are responsible for adhering to the Council's standards and guidelines for rangeland health.
<i>Grazing Uses</i>	Y	Proposed action designates administrative access routes for livestock grazing maintenance. Congressional Grazing Guidelines (excerpt from House Report 101-405 Appendix A, 1990) dictate allowable uses in wilderness.
<i>Invasive Non-native Plant Species (includes noxious weeds)</i>	Y	Surface disturbances from route rehabilitation may increase risk of non-native invasive species establishment. Mitigation measures may reduce noxious species.
<i>Land Uses</i>	N	Designation of wilderness, not this wilderness management plan, affects land uses.
<i>Migratory Birds</i>	N	Following the BLM interim management guidance for the Migratory Bird Treaty Act would prevent impacts.
<i>Mineral Resources</i>	N	No mine claims existed previous to wilderness designation
<i>Native American Religious Concerns</i>	N	No concerns raised at this time.
<i>Paleontological Resources</i>	N	No known sites of high scientific value are known. The proposed action does not conflict with the BLM's Ely District Resource Management Plan (2008).
<i>Recreation Uses</i>	Y	Designation of trails, staging areas, placement of signs/kiosks, and potential for additional regulations may affect recreational use of these areas.
<i>Special Designations other than Designated Wilderness</i>	Y	A staging area, pullout, and sign/kiosk placement will occur within ACECs (areas of critical environmental concern).
<i>Special Status Animal Species (Federally protected, Nevada State protected, BLM Sensitive rated)</i>	Y	Following the Reasonable and Prudent Measures and associated Terms and Conditions as stated in the Programmatic Biological Opinion (84320-2008-F-0078) for the BLM's Ely District Resource Management Plan (2008) would minimize impacts from the proposed action to the federally listed desert tortoise. Individual State protected or Nevada BLM listed sensitive species may be impacted by the proposed action.

Resource/Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis
<i>Special Status Plant Species (Federally protected, Nevada State protected, BLM sensitive rated)</i>	Y	Proposed action may impact undiscovered individual plants.
<i>Vegetation/Soils/Watershed</i>	Y	Constructing staging areas and route decommissioning would affect small areas of vegetation. Soils would not be destroyed or removed and watershed function would not be affected.
<i>Vegetative Resources (Forest or Seed Products)</i>	N	The Wilderness Act does not allow forest or seed products to be sold.
<i>VRM</i>	N	The proposed action is consistent with Visual Resource Management (VRM) Class I objectives for wilderness. The proposed action (except route decommissioning) would not be visible from any road and the level of change to the landscape is low.
<i>Wastes, Hazardous or Solid</i>	N	No wastes are anticipated
<i>Water Quality, Drinking/Ground</i>	N	Does not affect, herbicides used for Tamarisk eradication are approved for use in aquatic areas.
<i>Water Resources (Water Rights)</i>	N	BLM is subject to State of Nevada water rights laws.
<i>Wetlands/Riparian Zones</i>	N	Wetlands do not exist. Springs have been modified for livestock use and this Plan does not have the authority to change that. Herbicides proposed to eradicate Tamarisk that exists at several springs are approved for aquatic use. Implementing the SOPs stated in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007) will prevent impacts.
<i>Wild Horses</i>	Y	Herd Areas seek an Appropriate Management Level of zero. Periodic gathers may occur to achieve AML. The Proposed Action may affect horses that may not be found during periodic gathers.
<i>Wilderness</i>	Y	Proposed actions seek to maintain, restore, or enhance wilderness character.

Mandatory Items Analyzed

Fire Management

Affected Environment

The BLM's objective regarding fire management is 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 resource programs (BLM 2008b).

The fire management units (FMUs) that overlap these wilderness areas are displayed in Map 11 (Page 44) of the Wilderness Management Plan and described in Table 3 (Page 75). The primary goals of these FMUs are to employ full suppression of all fires, utilize practices to minimize the loss of desert tortoise cover, and to hinder the spread of non-native invasive annual grasses. The fire management type displayed in Table 3 is a designation that defines an FMU's primary resource management objective and fire protection values.

The Fire Regime Condition Class (FRCC) is a numerical rating representing the degree of departure from the historical fire regime and vegetation conditions, or in other words, fire frequency and severity. The majority of each wilderness area is characterized by FRCC 2 with substantial portions rated as FRCC 3 (See Map 13, Page 77). The following are the associated FRCC definitions:

- *Fire Regime Condition Class 2 (CC2):* “Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified in these lands. To restore their historical fire regimes, these lands may require some level of restoration as through prescribed fire, mechanical or chemical treatments, and the subsequent reintroduction of native plants.”
- *Fire Regime Condition Class 3 (CC3):* “These lands have been significantly altered from their historical range. Because fire regimes have been extensively altered, risk of losing key ecosystem components from fire is high. Consequently, these lands verge on the greatest risk of ecological collapse. To restore their historical fire regimes before prescribed fire can be utilized to manage fuel or obtain other desired benefits these lands may require multiple mechanical or chemical restoration treatments, or reseeding. (BLM 2008a)”

Table 3. Fire Management Units (FMUs) within the Wilderness Areas.

Wilderness Area	FMU Name	FMU Type	FMU Acres Within Wilderness by Percent
<i>Delamar Mountains</i>	Mojave	Special Management Area	98.9%
	Southern Benches	High Value Habitat	0.1%
	Southern Valleys	Vegetation	1.0%
<i>Meadow Valley Range</i>	Mojave	Special Management Area	95.7%
	Mojave and Highlands	Special Management Area	2.8%
	Tortoise ACEC North	Special Management Area	1.5%
<i>Morman Mountains</i>	Mojave	Special Management Area	88.5%
	Mojave and Highlands	Special Management Area	4.2%
	Tortoise ACEC North	Special Management Area	7.3%

These ecosystems are not fire adapted; however, fires are now fueled by the presence of non-native annual grasses, primarily red brome, which increases fire intensity, rate of spread, and fire frequency. Non-native invasive annual grasses tend to return in higher densities after fire leading to an unnatural fire regime and less diverse vegetation community. Non-native annual grasses burn more frequently and at larger scale than the native vegetation. Major fires have been documented in these wilderness areas since 1996. The most noteworthy year on record was 2005 where 37% (146,271 acres) of the wilderness areas were burned. A wet winter and spring led to a high fuel load of

primarily red brome. Fire management will continue to be an important challenge unless native vegetation communities can be restored to these areas.

Environmental Consequences

Impacts of Proposed Action

Impacts from fire management actions in desert tortoise habitat would be minimized by following the special Fire Management Actions for Desert Tortoise Habitat (FM-1) in section 2.4.20 of the BLM Ely District Resource Management Plan (2008b).

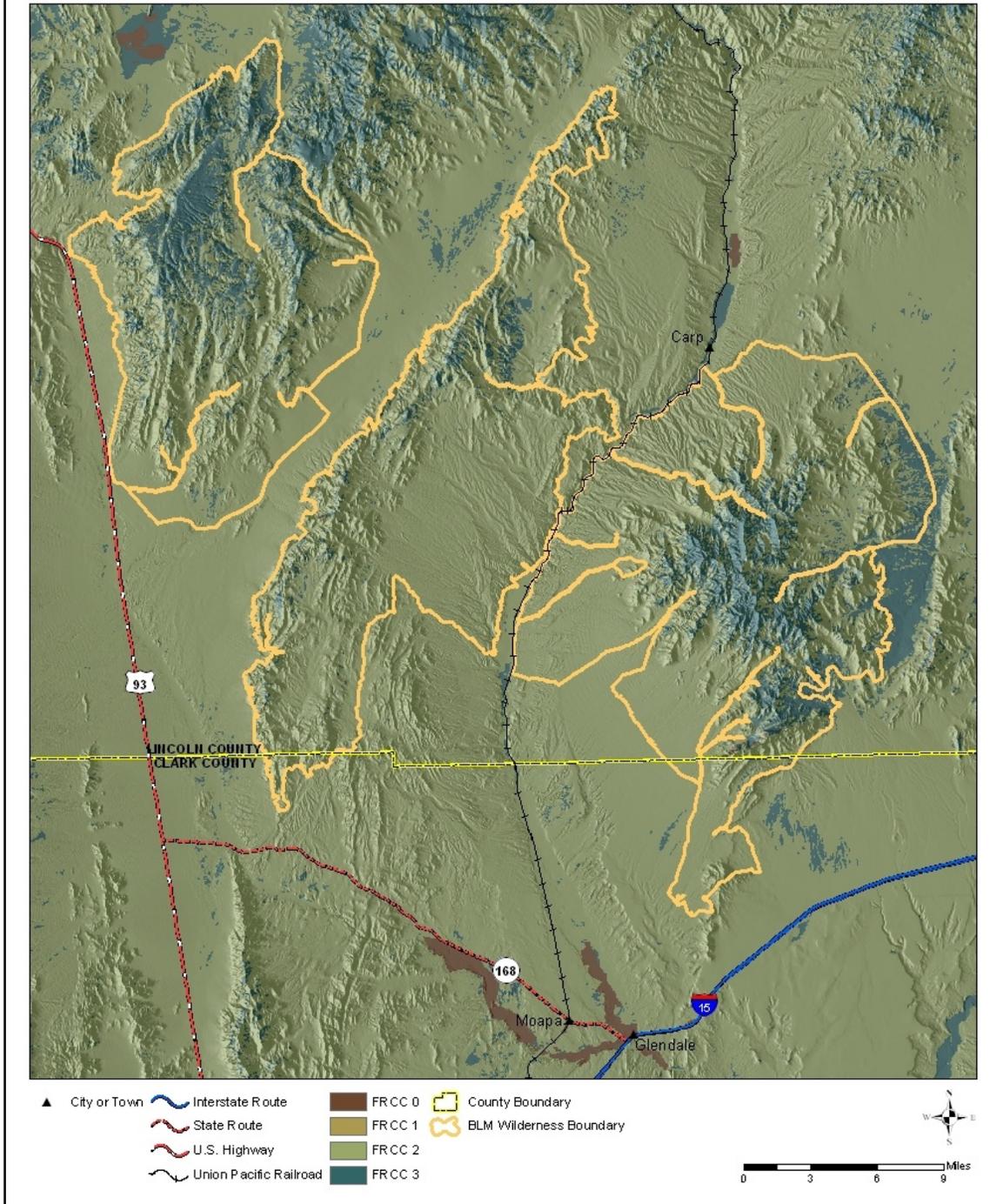
Full suppression tactics used to limit impacts and prevent spread of non-native grasses may have short-term impacts to wilderness character, but would enhance the natural characteristics of wilderness in the long-term. Impacts from fire management activities include visual impact from retardant, but the use of retardant reduces surface disturbance from line construction. Localized impacts to vegetation may occur if motorized access is granted for a specific fire. However, Minimum Impact Suppression Tactics (MIST) guidelines would be followed in an effort to minimize impacts to wilderness character. Actions deemed necessary by the Incident Commander for public and firefighter safety could cause short-term impacts to resources such as vegetation, wildlife, and weeds.

Post-fire Emergency Stabilization and/or Rehabilitation seeding or planting treatments, if successful, would benefit wilderness by restoring natural vegetation communities or establishing a less fire-prone community if non-native species are approved. Fire management planning may be altered in order to protect cultural resources.

Impacts of No Action

The No Action would not alter fire management program activities, therefore impacts would be the same as the proposed action.

Map 13. Fire Regime Condition Class (FRCC)*



*FRCC rating is the degree of departure from the historical fire frequency, severity, and vegetation conditions. Where FRCC 0, no data exists; FRCC 1 does not occur within wilderness).

Fish and Wildlife

Affected Environment

No fish species exist in the management area. Wildlife species characteristic of the Mojave Desert, and to a degree, the Great Basin, are supported by the diverse habitat types found in these areas. Key Habitats are associated with each ecological system described in the vegetation section (See Page 97). Key Habitats can be used to infer likely occurrences of wildlife species assemblages when survey data are lacking, as is the case for many species in these wilderness areas. Key Habitats include sagebrush, cliffs and canyons, Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, and lower montane woodlands (Wildlife Plan Action Team 2006).

Hunting and trapping are permitted in wilderness subject to applicable State and Federal laws and regulations. Non-commercial shed antler collection also occurs. The Delamar Mountains Wilderness overlaps with hunt unit 241 and has 6 big game and 7 small game wildlife water developments; the Meadow Valley Range Wilderness is within hunt unit 243 and has 2 big game and 3 small game wildlife water developments, and the Mormon Mountains Wilderness is within hunt unit 271 and has 4 big game and 16 small game wildlife water developments.



Zebra-tailed lizard Delamar Mountains

baileyi), and coyote (*Canis latrans*). Nongame species of mammals, reptiles, and birds are diverse and provide the prey base for the predators of the area.

Big Game

Big game species that occupy these areas largely consist of mule deer (*Odocoileus hemionus*) and desert bighorn sheep (*Ovis canadensis nelsoni*).

Mule Deer — Deer generally browse on forbs, grasses, and shrubs depending on the time of year. For instance, forbs and grasses are most important in spring and summer while shrubs are most utilized during winter and the dry summer months. The Delamar Mountains Wilderness encompasses approximately 31,400 acres of crucial winter range and the Meadow Valley Range Wilderness nearly 15,000 acres. The Mormon Mountains Wilderness encompasses approximately 81,000 acres of mature habitat but occupancy is limited by water availability.

Desert Bighorn Sheep — The desert bighorn sheep found in the project area is one of four desert subspecies of bighorn sheep (*Ovis canadensis*) found in North America. They prefer rough, rocky, and steep terrain; require freestanding water in the summer months or during drought; and mainly eat grasses, shrubs, and forbs (BLM 2008b). The Delamar Mountains Wilderness encompasses 94,420 acres of occupied habitat and 283 acres of potential habitat; the Meadow Valley Range Wilderness 90,914 acres of occupied habitat; and the Mormon Mountains Wilderness 81,446 acres of occupied habitat.

Upland Game

Upland game species primarily consist of Gambel's Quail (*Callipepla gambelii*) and Chukar Partridge (*Alectoris chukar*).

Gambel's Quail — This quail is native to the Mojave Desert and the southern portion of the Great Basin. Their primary diet consists of leaves, grasses, and seeds. Insects may be utilized during nesting season. Water is a limiting factor and population abundance fluctuates during drought years, however, small game wildlife water developments help stabilize population numbers (Brown et al. 1998).

Chukar Partridge — This species from the pheasant family was originally introduced from Pakistan as an upland game bird. It can be found on rocky hillsides or open and flat desert with sparse grassy vegetation. They primarily eat seeds but will forage on some insects (Christensen 1996).

Migratory Birds

Common Neo-tropical migrant bird species occurring in the project area include black-throated sparrow (*Amphispiza bilineata*), lesser nighthawk (*Chordeiles acutipennis*), ash-throated flycatcher (*Myiarchus cinerascens*), and Brewer's sparrow (*Spizella breweri*).



Cactus wren nest

Common resident bird species include cactus wren (*Campylorhynchus brunneicapillus*), verdin (*Auriparus flaviceps*), and black-tailed gnatcatcher (*Polioptila melanura*).

Environmental Consequences

Impacts of Proposed Action

The biggest challenges to wildlife in the project area may be invasive grasses and climate change. A consensus between nineteen climatic modeling groups from around the world predicts that drying of arid lands and temperatures in the southwestern United States will continue to increase (Seager et al. 2007). As a consequence, wildlife and the habitat they depend upon could be impacted

through decreased plant species diversity, increased fire frequency, and lack of water resources. At higher elevations or near springs, wildlife densities and competition may increase.

Authorized livestock activities and ground-disturbing methods relating to fire management activities, emergency stabilization and rehabilitation, route decommissioning, installation of signs, staging areas, trail maintenance, and a pullout, could have localized, short term impacts on behavior and movement of individuals. According to the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), the herbicides that would be used for Tamarisk and Sahara mustard treatments “are not likely to impact” when applied at typical application rates.

Following Best Management Practices in accordance with the Ely District Approved Resource Management Plan (2008) would minimize impacts to migratory or resident birds stemming from ground disturbing activities such as route decommissioning, vegetation restoration, fire management, or weeds treatments.

During horse gathers, short-term localized impacts may occur. However, in the long term wildlife would benefit from fewer impacts to springs and less competition for forage from wild horses.

In the long-term, route restoration following decommissioning may help restore formerly disturbed vegetation communities associated with former vehicle routes, thus providing a less vegetative fragmented landscape for wildlife.

Impacts of No Action

In general, the impacts would be the same as the proposed action because fire management, emergency stabilization and rehabilitation, and wild horse management are guided by their own resource programs and may still occur in wilderness. Route restoration following decommissioning, installation of signs, staging areas, trail maintenance, and a pullout, would not occur; therefore no impacts from these actions would take place.

Grazing Uses

Affected Environment

Livestock grazing allotments in the Delamar Mountains Wilderness are managed entirely by the Ely District Office. The majority of both the Meadow Valley Range and Mormon Mountains Wilderness areas are managed by the Ely District Office, while the Las Vegas Field Office manages the southern portions of both areas. All livestock grazing allotments within the wilderness are classified as either seasonal or year-round allotments by the Ely District Office and Las Vegas Field Office, respectively. Term permits authorize grazing use based on both the ephemeral and perennial vegetation within the Mojave Desert ecological system. The number of animals allowed to graze per month

(AUMs) is attached to base property — land or water — owned or controlled by a permittee or lessee. The majority of base property in the planning area is water based.

Livestock grazing allotments, which are used entirely by cattle operators, occur in much of the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas. Following the federal listing for desert tortoise, allotments located within ACECs were closed for species protection. Portions of six allotments, Breedlove, Delamar, Gourd Springs, Mormon Peak, Grapevine, and Lower Lake East, were made partially unavailable to livestock grazing. Additionally, five allotments located entirely within ACECs were purchased from permittees by the Nature Conservancy and are currently in “retired” status. Those allotments are: Arrow Canyon, Glendale, Rox, Rox-Tule, and Upper Mormon Mesa. The remaining grazeable allotments are in conformance with federal regulations identified on existing permits.

Allotments in the wilderness areas are displayed in Maps 3 — 5, 6 (Pages 10 — 12, 26) and listed in Table 4 (Pages 81 — 82). AUMs not included in this table that may be associated with the allotments include historic suspended, as well as mandatory and voluntary non-use AUMs, for conservation and protection purposes. Over recent years, particularly since 1996, actual use has been reduced due to the impacts of drought. Livestock numbers may vary based on rotational grazing systems and the terms and conditions of the individual term grazing permits.

Several range developments currently exist for the maintenance and support of livestock grazing. Existing range developments identified through administrative records and field reconnaissance within the wilderness areas are listed in the Table 5 (Page 83) and depicted in Maps 3 — 5, 6 (Pages 10 — 12, 26).

The grazing permittee is responsible for maintenance of all livestock grazing facilities in the wilderness areas by cooperative agreements. Although access by motor vehicles may occur on a case-by-case basis after contacting the BLM Ely District Office, no scheduled access by motor vehicles for facility maintenance or livestock operations has been established.

Table 4. Grazing Allotments within the Wilderness Areas.*

Allotment	Total Acres	Grazeable Acres (Outside ACEC)	Grazing Period	AUMs
<i>Arrow Canyon</i>	1,815	0	Permit Retired	Permit Retired
<i>Boulder Spring</i>	3,511	3,511	10/1 to 3/31	416
<i>Breedlove</i>	93,692	70,369	3/1 to 2/28	698
<i>Buckhorn</i>	4,160	4,160	3/1 to 3/28	3,370
<i>Delamar</i>	87,410	64,606	3/1 to 2/28	5,558
<i>Elgin (Lower Riggs)</i>	1,562	1,562	5/1 to 3/24	1,408

Allotment	Total Acres	Grazable Acres (Outside ACEC)	Grazing Period	AUMs
<i>Glendale</i>	31	0	Permit Retired	Permit Retired
<i>Gourd Spring</i>	12,689	12,689	10/1 to 5/31	3,458
<i>Grapevine</i>	18,844	11,560	3/1 to 2/28	349
<i>Henrie Complex</i>	58,186	58,188	3/1 to 2/28	1,380
<i>Lower Lake East</i>	13,956	11,223	3/1 to 2/28	640
<i>Mormon Peak</i>	70,069	61,019	3/1 to 2/28	600
<i>Rox</i>	213	0	Permit Retired	Permit Retired
<i>Rox-Tule</i>	7,191	0	Permit Retired	Permit Retired
<i>Upper Mormon Mesa</i>	11,144	0	Permit Retired	Permit Retired
<i>White Rock</i>	7,836	7,836	10/1 to 5/31	2,880

*AUMs listed are totals for the entire allotment (wilderness and non-wilderness)

Environmental Consequences

Impacts of Proposed Action

The long term prediction of droughts in the desert southwest may increase the need for maintenance of range developments to provide water for livestock operators. The proposed action for management of livestock grazing provides specific guidance for the maintenance of facilities and activities in support of a livestock grazing program in contrast to the No Action. Administrative access routes would be clearly defined and regular maintenance of structures in support of livestock grazing would be distinguished from emergency operations. This may enhance the ability of the BLM to manage livestock grazing activities within wilderness and eliminate time delays in approval for access to maintain range developments and respond to emergency situations. The installation of gates would allow for permittee access to the range developments while preventing illegal vehicle incursions and reducing vandalism to range developments.

The proposed action may create temporary localized impacts to other resources. The proposed action may affect the “undeveloped” character of the wilderness resource, recreationists seeking a wilderness experience, individual wildlife species in the vicinity, and has the potential to increase the spread of invasive non-native plant species. The proposed action may also temporarily displace wild horses, however the herd areas are set for zero, and this could eliminate wild horse competition and conflicts with livestock operations.

Table 5. Existing Range Developments within the Wilderness Areas.

Wilderness	Fence Lines #/miles	Pipelines #/miles	Troughs (T) Reservoirs (R)	Corrals	Developed Springs
<i>Delamar Mountains</i>	6/4.44	1/0.15	1 (T) 3 (R)	1	-
<i>Meadow Valley Range</i>	4/0.41	-	2 (T) 2 (R)	-	2
<i>Morman Mountains</i>	22/7.37	2/3.21	2 (T)	-	3

Grazing uses may benefit from fire suppression by preventing structures and installations from being consumed as a result of wildland fire. Wildlife may benefit from the maintenance of livestock range developments, such as troughs and springs, as they may provide additional sources of water. Emergency stabilization and rehabilitation efforts and treatments for the spread of noxious and invasive weeds could result in the temporary closure of administrative access routes. According to the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), herbicides that would be used for Tamarisk and Sahara mustard treatments “are not likely to impact” livestock when applied at typical application rates.

Impacts of No Action

Administrative access and maintenance needs for livestock grazing operations would occur on a case-by-case basis. No administrative access routes would be designated and access gates would not be installed. Impacts to and from other resources would not differ from the proposed action.

Invasive Non-native Plant Species (includes noxious weeds)

Affected Environment

Noxious and non-native invasive weeds are frequent obstacles to managing wilderness character in the Central Basin and Range and Mojave Basin and Range ecoregions. Non-native invasive species are defined by Executive Order 13112 as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Alien refers to a species that did not evolve in the environment in which it is found. Noxious weeds are any plant designated by a Federal, State, or County government as injurious to public health, agriculture, recreation, wildlife, or property. (Sheley, Petroff, and Borman 1999).

Noxious weeds in Nevada are classified by the Nevada Department of Agriculture and the Plant Protection Act (2000) administered by the United States Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS). Category A weeds are weeds that are generally not found or that are limited in distribution throughout

the State. Such weeds are subject to active exclusion from the State, active eradication wherever found, and active eradication from the premises of a dealer of nursery stock. Category B weeds are weeds that are generally established in scattered populations in some counties of the State. Such weeds are subject to active exclusion where possible and active eradication from the premises of a dealer of nursery stock. Category C weeds are weeds that are generally established and generally widespread in many counties of the State. Such weeds are subject to active eradication from the premises of a dealer of nursery stock.

Weed management is further challenged by extensive fires that occurred throughout these wilderness areas in 2005, in part because of invasive annual grasses. A very wet winter and spring produced high densities of red brome and some cheatgrass. These species tend to return in higher densities after fire that maintains an unnatural fire regime and a less diverse vegetation community. Another challenge stems from the Union Pacific railroad (UPRR) right of way corridor between the Meadow Valley Range and Mormon Mountains Wildernesses. This corridor is infested with multiple noxious weed species such as Russian knapweed (*Acroptilon repens*), Sahara mustard (*Brassica tournefortii*), Musk thistle (*Carduus nutans*), hoary cress (*Lepidium draba*), tall whitetop (*Lepidium latifolium*), Scotch thistle (*Onopordum acanthium*), and Tamarisk (*Tamarix* spp.). There is also rip-gut brome (*Bromus diandrus*), red brome (*Bromus madritensis* spp. *rubens*), and cheatgrass (*Bromus tectorum*) scattered within the wash, providing a reservoir for possible future infestations into wilderness.

Tamarisk (*Tamarix* spp.) is classified in Nevada as a Category C noxious weed. There are several documented infestations near Hackberry Spring in the Meadow Valley Range, Willow Spring in the Delamar Range, and Horse Spring in the Mormon Mountains (See Maps 3 – 5, Pages 10 – 12). There are 54 known species of Tamarisk which are native to North Africa, the Mediterranean, and the Middle East. Tamarisk is fire adapted, each plant can produce up to 500,000 wind-blown seeds, the leaves and flowers contain few nutrients for wildlife, and it tends to grow in riparian areas or where water is near the surface. Native aquatic systems are disrupted because of long tap roots that are capable of intercepting deep water tables and increased salinity of the surrounding soil after leaves drop. In turn, native species such as willow and mesquite are displaced leaving poor habitat and forage for wildlife. After burning or cutting, Tamarisk can easily resprout making it difficult to eliminate (Muzika and Swearingen 2006).

Sahara mustard (*Brassica tournefortii*) is classified in Nevada as a Category B Noxious weed and has been documented in the southern portion of the Mormon Mountains Wilderness (See Map 5, Page 12). It is a drought-tolerant winter annual that prefers sandy soils and is most abundant in lower Mohave Desert scrub habitat. Up to 16,000 seeds can be produced from self-pollinating flowers. These seeds are spread by dried plants breaking off and tumbling across the ground. This invasive is of great concern because it grows faster than native forbs, competes with native shrubs for water and light, and in areas of dense growth can become an unnatural fire hazard in dry years (Invaders 2008). Infestations are rapidly increasing northward from Clark County, Nevada.

Red brome (*Bromus madritensis* spp. *rubens*) is an invasive, annual grass present in large areas at various densities throughout the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas and can be found in blackbrush (*Coleogyne ramosissima*), creosote bush (*Larrea tridentata*), and creosote bush-saltbush (*Atriplex* spp.)-blackbrush vegetation communities. Red brome flourishes in areas with weak competition from native plants and can grow on all types of topography. It is considered poor forage for cattle and wildlife due to its very short growing season. Red brome dominated landscapes generally have increased fire frequency and intensity compared to areas with native vegetation because red brome leaves behind abundant and persistent fine fuels that promote hot, fast fires. Whereas dead native annual species may only persist on the landscape up to one year, dead red brome stems and blades can last up to two years. Fires generated from red brome are usually not hot enough to burn large shrubs such as creosote bush, but can burn small shrubs such as white bursage (*Ambrosia dumosa*). There are currently no large-scale programs to manage or eradicate red brome (Simonin 2001).

Cheatgrass (*Bromus tectorum*) is currently only found in a few areas at low density throughout the three areas. This invasive annual grass displaces native perennial shrub, grass, and forb species because of its ability to germinate quicker and earlier than native species, thus outcompeting natives for water and nutrients. Cheatgrass is also adapted to recurring fires that are perpetuated in part by the fine dead fuels that it leaves behind. In general, native plants have a difficult time thriving in these altered fire regimes.

Ripgut brome (*Bromus diandrus*) is also known to occur in these wildernesses. It is an introduced annual cool season grass. This species, like other invasive grasses, is an early season grass that dries out early in the year and increases fire frequency when compared to historic fire frequencies of native grasses. Ripgut brome has also been documented as having hybridized with downy brome (*Bromus tectorum*) and red brome (*Bromus madritensis* spp. *rubens*). Like other brome species, the seeds have the ability to spread far by attaching to animals and people (Cal-IPC 2009).

A risk assessment for noxious weeds was conducted for the three wilderness areas (Appendix A). For this project, the risk factor is moderate. A risk rating of moderate requires the development of preventative management measures for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area.

Environmental Consequences

Impacts of Proposed Action

In general, the management actions outlined in this plan apply best management practices and standard operating procedures that are focused on preventing the spread of weeds by vectors such as vehicles or equipment. The ability to detect noxious and invasive weeds would be enhanced over the No Action alternative through a greater emphasis on regular wilderness monitoring. Weed treatment procedures within these areas would be clearly defined and compatible with limiting or eliminating noxious and invasive weeds. High-use staging areas and designated trails could be infested by weeds through vehicle or human transport.

Invasive annual grass treatment procedures would be clearly defined in the Proposed Action. This may enhance the ability of the BLM to control, contain, or eliminate certain invasive grasses within these areas and prevent an annual grass fire cycle which could further harm the native vegetation in the area. If post-fire Emergency Stabilization and Rehabilitation (ES & R) activities should fail, then noxious and invasive weeds may increase in burned areas. However, if efforts are successful, then post-fire weed establishment or expansion would be minimized or stopped.

The continued presence and anticipated increase of recreational activities, including camping, hiking, and horse packing, may contribute to the spread of noxious and invasive species as a result of trampling of native species and the possibility of spreading noxious and invasive seeds into wilderness. Pack stock animals used for recreational horseback riding and routine livestock maintenance would be fed with packed-in, certified weed-free feed, decreasing their contribution to weed infestation problems and the impact of incidental recreational horse browsing on vegetation.

Rehabilitation of small-scale disturbances would include methods such as decompaction, scarifying, and pitting soil that may stimulate the growth of noxious and invasive weeds. Future approved vegetation restoration projects may cause small, local disturbances that could increase local noxious and invasive weed populations. Allowable motorized access could occur through emergency stabilization and rehabilitation, wildlife management, livestock permittee administrative access, or fire-management; such access may cause disturbances that encourage weed establishment, or may introduce additional weeds into the wilderness.

Livestock grazing management seeks to achieve or maintain desired rangeland health and healthy rangelands are less vulnerable to weed infestations. However, livestock can carry seeds and plant parts of noxious and invasive weed species. Monitoring of high risk areas should minimize possible infestations. Cattle would generally be excluded from areas of new revegetation until deemed successful to prevent livestock from trampling and grazing young plants (BLM 2008b).

Impacts of Site-Specific Control of Tamarisk and Sahara Mustard

Herbicides could come into contact with and impact non-target plants through drift, runoff, wind transport, or accidental spills and direct spraying. Potential impacts include mortality, reduced productivity, and abnormal growth. However, implementing the associated SOPs outlined in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007) will minimize or eliminate these risks.

Impacts of No Action

Weed introduction from individuals hiking and from vehicles along cherry-stemmed routes and wilderness boundary roads may occur. Weed monitoring would occur approximately every 5 years along roads, cherry-stemmed routes, and around springs reasonably accessible from roads. Compared to the proposed action, weed treatment would be sporadic and would not occur in a timely manner. Additionally, when weeds are

found, site-specific NEPA analysis would not be guided by the treatment options and priorities outlined in the proposed action, further slowing down the ability to treat weeds in a timely manner.

Recreation Uses

Affected Environment

These wilderness areas are generally within an hour and a half drive from Las Vegas, Nevada. Year round visitation to the wilderness areas is possible, although visitation may be limited during winter when snow is common, and summer when temperatures surpass 100°F. Although the amount of annual visitation is unknown, it is presumed to be low.

Recreational activities include hiking, camping, climbing, enjoying scenery, nature study and hunting. Scarcity of water may limit some activities, such as horseback riding and backpacking, as finding springs can be challenging. The wilderness areas range in elevation from 4,000 feet to the 7,414 foot summit of Mormon Peak, within Mormon Mountains Wilderness. The rugged peaks, cliffs, and remote canyons offer destinations for hikers and climbers. Moapa Peak, within Mormon Mountains Wilderness, is a known popular hiking destination and is listed on numerous websites and outdoors publications. There is an undesignated and unmaintained trail to the summit which provides opportunities for scrambling and technical climbing. There are no known geocaches or letterboxes.

Less difficult hiking opportunities can be had on the bajadas of the wilderness areas' outer edges. An unknown number of trails exist which were created by wild horses and livestock. Hunting occurs for desert bighorn sheep, mule deer, and upland game birds including chukar partridge and Gambel's quail. Numerous cave resources are known to exist, however, they are relatively inaccessible, and their level of use is unknown. Availability of firewood is poor, except at higher elevations where pinyon pine, juniper, and ponderosa pine can be found.

No permits are required to visit, and there are no group size limits; the only camping restriction is the 14-day stay limit and moving camp 25 miles from previous camp. No permits have been issued for commercial services specifically for wilderness.

The majority of these wilderness areas provide the opportunity to experience a sense of remoteness and isolation. There are numerous draws, ravines, rocky outcrops, ridges, and canyons that create secluded locales. These locales, the wilderness' large area, and low visitation combine to provide outstanding opportunities for solitude. However, flat topography, sparse vegetation, and periodic sights and sounds of vehicles in adjacent lands and aircraft flying overhead, may decrease experiences of solitude. Opportunities for solitude are present but not outstanding in the Mormon Mountains Wilderness panhandle, due to sights and sounds of Interstate 15 to the south.

Environmental Consequences

Impacts of Proposed Action

The proposed action includes designation of two hiking trails in the Mormon Mountains Wilderness, totaling approximately 5.1 miles, creation of vehicle staging areas with barriers, and informational sign installations. The proposed action would provide hiking opportunities and protection of resources by concentrating impacts in those areas over No Action. Recreational use may create temporary localized impacts to wildlife through displacement of individual animals; however, the recreational experience may also be improved through increased opportunities to observe wildlife. Increased pedestrian, equestrian, vehicle traffic (to staging areas), and installation of signs has the potential to introduce invasive non-native plants, including noxious weeds. Creation of vehicle staging areas and sign installations would create small localized disturbances within desert tortoise habitat and to vegetation and soils. Wild horse populations may persist between gathers and recreational use may cause temporary displacement to individual wild horses.

The Wilderness resource would be enhanced by the Proposed Action as the majority of Mormon Mountains Wilderness and all of Delamar Mountains and Meadow Valley Range Wilderness areas would not be accessed by designated trails. Off-trail travel would not be impacted. The experience of visitors seeking a more primitive and unconfined form of recreation would be enhanced, and opportunities for solitude would remain extensive. Signs may increase protection of the wilderness resource and enhance visitors' experiences by providing recreationists with information and education, and creating staging areas may reduce instances of vehicle incursions. A monitoring system would be established to prevent or respond to degradation of trails, campsites, solitude, additional foot-worn hiking paths, and recreational impacts to other resources.

Recreational activities may be impacted by temporary closures of areas as a result of fire suppression activities, emergency stabilization and rehabilitation, and herbicide treatments of invasive non-native and noxious weed treatments.

Impacts of No Action

The No Action option would generally have similar impacts compared to the Proposed Action, however, impacts to recreation and wilderness resources may be more severe. Impacts of recreational use to wildlife resources, non-native invasive plants, including weeds, and wild horses would be identical to the Proposed Action. No trails would be designated; however, 92 miles of former vehicle routes would be available for hiking and equestrian use. The lack of designated trails may increase opportunities for recreationists seeking a primitive and unconfined type of recreation and increased opportunities for solitude. However, the absence of designated trails may result in numerous foot-worn hiking paths, which may increase disturbance to vegetation and soils.

There would be no vehicle staging area or barrier construction, or sign/kiosk installation in the No Action, thereby eliminating short term localized impacts to vegetation and soils. The absence of these facilities may, however, result in widespread impacts to these

resources from vehicles creating their own staging areas, and potentially driving into wilderness. The lack of signs may attract fewer recreationists to the wilderness, thereby potentially enhancing the wilderness resource; however, lack of information and education may also reduce visitors' experience and protection of the wilderness resource. The consequences of visitor impacts may detract from the wilderness setting if there is no monitoring system and strategy in place to deal with those impacts.

Impacts of other resources, including fire suppression activities, emergency stabilization and rehabilitation, and herbicide treatments of invasive non-native and noxious weed treatments would be the same as the Proposed Action.

Special Designations other than Designated Wilderness

Affected Environment

Areas of Critical Environmental Concern (ACECs) were designated as a result of mandates from section 202(3)(c) of the Federal Land Policy and Management Act of 1976 (FLPMA) and refer to geographical areas within lands administered by the BLM that require special measures to protect sensitive cultural, physical, or biological resource values. Management of ACECs seeks to eliminate or minimize competing or conflicting land uses. Within ACEC boundaries grazing has been discontinued and allotments have been closed; herd areas strive for a zero population size; areas are managed as ROW (right of way) avoidance regions; and restoration is a top priority.

The Mormon Mesa (151,360 acres) and Kane Springs (57,190 acres) ACECs overlap these wilderness areas and were created primarily to protect critical habitat for the federally listed desert tortoise. The Delamar Mountains Wilderness encompasses 27,066 acres of the Kane Springs ACEC, the Meadow Valley Range Wilderness encompasses portions of the Kane Springs and Mormon Mesa ACECs totaling 12,723 acres, and the Mormon Mountains Wilderness encompasses 45,735 acres of the Mormon Mesa ACEC (See Maps 3 – 5, 6; Pages 10 – 12, 26). Approximately 236,860 acres of desert tortoise habitat (including ACECs and the Mormon Mesa critical habitat unit) exist within wilderness boundaries.

Environmental Consequences

Impacts of Proposed Action

Modification of ACECs from the construction of staging areas and pullouts would be minimal (< 4 acres or 0.002%). Weed management and restoration following decommissioning of former vehicle routes would be beneficial to the overall habitat condition in these ACECs.

Fire management objectives utilize practices to minimize the loss of desert tortoise cover and that hinder the spread of non-native invasive annual grasses. Therefore, overall, fire management activities will maintain or enhance habitat conditions in these ACECs.

Impacts of No Action

The staging areas, signs, and pullout would not be installed; therefore impacts on approximately 4 acres of ACECs would not occur.

Special Status Animal Species

Affected Environment – Federally Listed Species

The only federally listed species in the project area is the desert tortoise (*Gopherus agassizii*). The Mojave population (west & north of the Colorado River) of desert tortoise was listed by the United States Fish and Wildlife Service (USFWS) as threatened in 1990. This long-lived species inhabits creosote bush-burro bush (*Larrea tridentate* – *Ambrosia dumosa*) or creosote bush-Joshua tree (*Larrea tridentate* – *Yucca brevifolia*) vegetation types in the eastern Mojave Desert where they forage primarily on perennial grasses and forbs. Mating can occur anytime between March and October, after which this species goes into hibernation. It takes about 5 years before their shell hardens, thus they are extremely vulnerable to predation. Sexual maturity is reached between 10 and 15 years. The primary threats include habitat loss, livestock grazing, raven predation, and disease.



Desert Tortoise

Environmental Consequences

Impacts of Proposed Action

Potential impacts to the federally threatened desert tortoise will be reduced by following Best Management Practices in accordance with the Ely District Approved Resource Management Plan (RMP) (2008) and the Biological Assessment that will be appended to the Programmatic Biological Opinion contained in Appendix D of the RMP.

Authorized livestock activities and ground-disturbing methods relating to fire management activities, emergency stabilization and rehabilitation, route decommissioning, installation of signs, staging areas, and a pullout, could have localized, short term impacts on behavior and movement of individuals as well as a remote possibility of an accidental death of an individual tortoise.

Impacts of No Action

The impacts of not implementing a comprehensive wilderness management plan would be the same as the proposed action for fire management, emergency stabilization and rehabilitation, weed management, wildlife management activities, and wild horse gathers,

because these activities are guided by their own resource programs and may still occur in wilderness. Site-specific actions such as route restoration following decommissioning, installation of signs, staging areas, and a pullout, would not occur; therefore no impacts from these actions would take place.

Affected Environment – State Protected and BLM Sensitive Species

In addition to species federally protected under the Endangered Species Act, Nevada



Burrowing owls near Meadow Valley Range

BLM Special Status Species include wildlife that is classified as protected under Nevada Revised Statute (N.R.S.) 501.110. Additionally, Nevada BLM includes Sensitive Species, which are defined as species that are not federally or State protected. It is BLM policy to provide the same level of protection for sensitive species as a federal candidate species (BLM Manual 6840.06). The manual states, “BLM shall implement management plans that conserve candidate species and their habitat and ensure that

actions authorized, funded, or carried out do not contribute to the need for the species to become listed.”

After a thorough review of the Nevada Natural Heritage database, several Nevada BLM special status and sensitive wildlife species, such as desert bighorn sheep, burrowing owl, golden eagle, ferruginous hawk, prairie falcon, and banded Gila monster, have been documented within these wildernesses. However, this may not represent actual species present because extensive surveys within the wilderness have not been conducted. It is likely that various other BLM special status and sensitive species may be discovered in the future within the boundaries of wilderness.

Table 6 (Pages 93 – 94) lists the Nevada BLM special status and sensitive wildlife species that may occur in the project area, along with its key habitat, habitat components, and whether the species is State protected or listed under the Clark County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP was written as a means to address the conservation needs of the biological resources within Clark County in the face of rapid urban expansion and in support of an application for a Take Permit pursuant to the provisions of Section 10(a) of the Endangered Species Act (ESA). A portion of these wilderness areas is in Clark County and the BLM seeks to be consistent with officially approved 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.

Environmental Consequences

Impacts of Proposed Action

Like other wildlife, the biggest challenges to special status or sensitive species in the project area may be invasive grasses and climate change. A consensus between nineteen climatic modeling groups from around the world predicts that drying of arid lands and temperatures in the southwestern United States will continue to increase (Seager et al. 2007). As a consequence, the habitat that Nevada BLM special status and sensitive wildlife species depend upon could be impacted through decreased plant species diversity, increased fire frequency, and lack of water resources. At higher elevations or near springs, densities and competition may increase.

Authorized livestock activities and ground-disturbing methods relating to fire management activities, emergency stabilization and rehabilitation, route decommissioning, installation of signs, staging areas, and a pullout, could have localized, short term impacts on behavior and movement of individuals. According to the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), the herbicides that would be used for Tamarisk and Sahara mustard treatments “are not likely to impact” when applied at typical application rates.

Following Best Management Practices in accordance with the Ely District Approved Resource Management Plan (2008) would minimize impacts to special status migratory or resident birds stemming from ground disturbing activities such as route decommissioning, vegetation restoration, fire management, or weeds treatments.

During horse gathers, short-term localized impacts may occur. However, in the long term some Nevada BLM special status and sensitive wildlife species may benefit from fewer impacts to springs and less competition for forage from wild horses.

In the long-term, route restoration following decommissioning may help restore formerly disturbed vegetation communities associated with former vehicle routes, thus providing a less vegetative fragmented landscape for wildlife.

Future wildlife activities such as augmentation or installation of wildlife water developments would have to undergo their own NEPA analysis.

Impacts of No Action

The impacts of not implementing a comprehensive wilderness management plan would be the same as the proposed action for fire management, emergency stabilization and rehabilitation, weed management, wildlife management activities, and wild horse gathers, because these activities are guided by their own resource programs and may still occur in wilderness. Site-specific actions such as route restoration following decommissioning,

installation of signs, staging areas, and a pullout, would not occur; therefore no impacts from these actions would take place.

Table 6. Nevada BLM Special Status Wildlife Species That Do or May Occur in the Wilderness Areas.

Special Status Animal Species	Scientific Name	State of Nevada Protected Species	Clark County MSHCP Listed	Key Habitat	Key Habitat Element
<i>Desert Tortoise (Mojave desert population)</i>	<i>Gopherus agassizii</i>	Yes (Federally listed as threatened)	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Sandy soils
<i>Banded Gila Monster</i>	<i>Heloderma suspectum cinctum</i>	Yes	Yes (Evaluation species-high priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Rocks- canyons-rock outcrops
<i>Sonoran Mountain Kingsnake</i>	<i>Lampropeltis pyromelana</i>	Yes	Yes (Evaluation species-medium priority)	Cliffs and canyons	Rocky slopes
<i>Common Chuckwalla</i>	<i>Sauromalus ater</i>	No	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons.	Rocks- canyons-rock outcrops
<i>Gilbert's Skink (AKA western red-tailed skink)</i>	<i>Eumeces gilberti rubricaudatus</i>	No	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Sagebrush	Dead/down plant debris, wash transition zone
<i>LeConte's Thrasher</i>	<i>Taxostoma lecontei</i>	Yes	Yes (Evaluation species-medium priority)	Mojave/Sonoran warm desert scrub	Saltbush
<i>Loggerhead Shrike</i>	<i>Lanius ludovicianus</i>	No	Yes (Evaluation species-low priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Sagebrush	Saltbush, yucca spp., mature sagebrush
<i>Bendire's Thrasher</i>	<i>Taxostoma lecontei</i>	Yes	Yes (Evaluation species-medium priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Yucca spp.
<i>Crissal Thrasher</i>	<i>Taxostoma crissale</i>	No	Yes (Evaluation species-low priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Shrubs and wash transition zone

Special Status Animal Species	Scientific Name	State of Nevada Protected Species	Clark County MSHCP Listed	Key Habitat	Key Habitat Element
<i>Pinyon Jay</i>	<i>Gymnorhinus cyanocephalus</i>	No	No	Lower montane woodlands	Cone-bearing stands
<i>Burrowing Owl</i>	<i>Athene cucularia</i>	No	Yes (Evaluation species-high priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Sandy soils
<i>Prairie Falcon</i>	<i>Falco mexicanus</i>	No	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons.	Rock outcrops
<i>Ferruginous Hawk</i>	<i>Butea regalis</i>	Yes	Yes (Watch list species)	Sagebrush, Lower montane woodlands, cliffs and canyons.	Rock ledges, woodland rock transition zone
<i>American Peregrine Falcon</i>	<i>Falco peregrinus anatum</i>	Yes	Yes (Covered species)	Cliffs and canyons	Ledges
<i>Desert Bighorn Sheep</i>	<i>Ovis canadensis nelsoni</i>	No	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons.	Rocky slopes, outcrops, and ledges
<i>Preble's Shrew</i>	<i>Sorex preblei</i>	No	No	Sagebrush	Grasses/forbs
<i>Pallid Bat</i>	<i>Antrozous pallidus</i>	No	No	Cliffs and canyons	Rocky slopes
<i>Long-eared Myotis</i>	<i>Myotis evotis</i>	No	Yes (Covered species)	Lower montane woodlands, cliffs and canyons	Mature stands/snags/cavities, crevices
<i>Allen's Big-eared Bat</i>	<i>Idionycteris phyllotis</i>	Yes	Yes (Watch list species)	Lower montane woodlands	Mature stands/snags/cavities
<i>Small-footed Myotis</i>	<i>Myotis ciliolabrum</i>	No	Yes (Evaluation species-medium priority)	Lower montane woodlands	Mature stands/snags/cavities
<i>Fringed Myotis</i>	<i>Myotis thysanodes</i>	Yes	Yes (Evaluation species-medium priority)	Lower montane woodlands	Mature stands/snags/cavities
<i>Cave Myotis</i>	<i>Myotis velifer</i>	No	Yes (Watch list species)	Cliffs and canyons	Caves and mines

Special Status Plant Species

Affected Environment

Nevada BLM Special Status Species include plants that are federally listed, proposed, or candidate species under the Endangered Species Act or plant species declared by the State Forester Firewarden to be threatened with extinction pursuant to Nevada Revised Statutes (N.R.S.) 527.260-300. According to N.R.S. 527.270, “no member of its kind may be removed or destroyed at any time by any means except under special permit issued by the state forester firewarden.”

After a thorough review of the Nevada Natural Heritage database, other than white bearpoppy (*Arctomecon merriamii*), we were unable to find any documented BLM sensitive plant species within these wildernesses. However, this may not represent actual species present because extensive surveys within the wilderness have not been conducted. It is likely that various other BLM sensitive plant species may be discovered in the future within the boundaries of wilderness. For instance, the Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) is a recently identified, genetically unique subspecies of buckwheat located in southern Nevada with the potential to occur within wilderness boundaries. In 2005, populations of this buckwheat were found in the Coyote Springs Valley on BLM lands and within the Coyote Springs Development near the intersection of Highways 93 and 168. This flowering shrub grows only in Clark and Lincoln Counties, Nevada and prefers gypsum soils that seem to be isolated within the Sonora-Mojave Creosotebush-White Bursage Desert Scrub ecological system (Mrowka 2008). Its habitat overlaps with the Nevada State listed (critically endangered) Las Vegas bear poppy. Gypsum soils do occur in these areas. Table 7 (Pages 96 – 97) displays the potential special status plant species that may occur in wilderness based on key habitat characteristics.

Environmental Consequences

Impacts of Proposed Action

Destruction of individual undiscovered plants could occur from activities relating to fire management and wild horse gathers. No other activities in wilderness would intentionally cause harm to any special status plant species.

Impacts of No Action

Impacts would be the same as the proposed action.

Table 7. Nevada BLM Special Status Plant Species That May Occur in the Wilderness Areas.

Special Status Plant Species	Scientific Name	State of Nevada Protected Species	Clark County MSHCP Listed	Key Habitat	Key Habitat Element(s)
<i>Las Vegas Bearpoppy</i>	<i>Arctomecon californica</i>	Yes (Critically Endangered)	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Gypsum-rich soils
<i>White Bearpoppy</i>	<i>Arctomecon merriamii</i>	No	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Gypsum-rich soils
<i>Eastwood Milkweed</i>	<i>Asclepias eastwoodiana</i>	No	No	Mojave mid-elevation mixed desert scrub, Sagebrush	Wide variety of basic (pH usually 8 or higher) soils
<i>Sheep Mountain Milkvetch</i>	<i>Astragalus amphioxys</i> var. <i>musimonum</i>	No	Yes (Evaluation species-high priority)	Mojave mid-elevation mixed desert scrub	Microsites with enhanced run-off
<i>Needle Mountains Milkvetch</i>	<i>Astragalus eurylobus</i>	No	No	Mojave mid-elevation mixed desert scrub	Deep, barren, sandy, gravelly, or clay soils
<i>Black Woolypod</i>	<i>Astragalus funereus</i>	No	Yes (Evaluation species-high priority)	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Dry, open scree, talus, or gravelly substrates
<i>Threecorner Milkvetch</i>	<i>Astragalus geyeri</i> var. <i>triquetrus</i>	Yes (Critically Endangered)	Yes (Covered species)	Mojave/Sonoran warm desert scrub	Sandy soils
<i>Halfring Milkvetch</i>	<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	No	Yes (Evaluation species-high priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Carbonate gravels and derivative soils
<i>Mokiak Milkvetch</i>	<i>Astragalus mokiacensis</i>	No	Yes (Evaluation species-medium priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Sandy soils
<i>Cane Spring Suncup</i>	<i>Camissonia megalantha</i>	No	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons	Dry, open, loose soils on sandy to gravelly flats, slopes, or scree
<i>Nevada willowherb</i>	<i>Epilobium nevadense</i>	No	Yes (Evaluation species-high priority)	Lower montane woodland	Slopes with limestone outcrops or talus

Special Status Plant Species	Scientific Name	State of Nevada Protected Species	Clark County MSHCP Listed	Key Habitat	Key Habitat Element(s)
<i>Las Vegas Buckwheat</i>	<i>Eriogonum corymbosum</i>	No	Yes (Evaluation species-high priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Gypsum-rich soils
<i>Clokey Buckwheat</i>	<i>Eriogonum heermannii</i> var. <i>clokeyi</i>	No	Yes (Evaluation species-low priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons	Carbonate outcrops, talus, scree, and gravelly washes and banks
<i>Blue Diamond Cholla</i>	<i>Opuntia whipplei</i> var. <i>multigeniculata</i>	Yes (Critically Endangered)	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Dry, open carbonate ledges, crevices, and loose rock
<i>Beatley Scorpionflower</i>	<i>Phacelia beatleyae</i>	No	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons	Dry, open, nearly barren scree and loose gravelly soils
<i>Clarke phacelia</i>	<i>Phacelia filiae</i>	No	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Dry, open, nearly barren scree and loose gravelly soils
<i>Parish's phacelia</i>	<i>Phacelia parishii</i>	No	Yes (Covered species)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons	Sparsely vegetated alkaline flats
<i>Pygmy Poreleaf</i>	<i>Parophyllum pygmaeum</i>	No	Yes (Evaluation species-medium priority)	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Lower montane woodlands	Dry, open, relatively deep, rocky carbonate soils of alluvial fans and hillsides
<i>Schlesser Pincushion</i>	<i>Sclerocactus schlesseri</i>	Yes		Mojave mid-elevation mixed desert scrub	Open, stable or stabilized, gravelly, sandy silt or silty clay soils

Vegetation

Affected Environment

The Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness areas are located in the Mojave Basin and Range ecoregion (Mojave Desert). The transition zone to the Central Basin and Range ecoregion (Great Basin region) is situated

along the northern border of the Delamar Mountains Wilderness boundary, but further north of the other two wilderness areas (U.S. Environmental Protection Agency 2007).

The Southwest Regional Gap Analysis Project (SWReGAP) was initiated in 1999 and mapped landscape features for a five-state region (AZ, CO, NV, NM, and UT), including ecological systems that are grouped into vegetation patterns (Lowry et al. 2005). Table 8 displays the ecological system and percent of each within these wilderness areas based on SWReGAP information. Following Table 8, general plant species associated with each ecological system are described (USGS National Gap Analysis Program, 2005). Throughout the management area the integrity of these natural vegetation patterns is threatened by non-native invasive species.

Table 8. The Primary Ecological Systems Present within the Wilderness Areas by Estimated Percent Cover *

Ecological System	Delamar Mountains	Meadow Valley Range	Mormon Mountains
<i>Mojave Mid-Elevation Mixed Desert Scrub</i>	23.22%	38.26%	50.66%
<i>Sonora-Mojave Creosotebush-White Bursage Desert Scrub</i>	24.89%	44.41%	31.80%
<i>North American Warm Desert Bedrock Cliff and Outcrop</i>	4.71%	11.13%	9.78%
<i>Great Basin Pinyon-Juniper Woodland</i>	2.27%	< 1%	5.93%
<i>Great Basin Xeric Mixed Sagebrush Shrubland</i>	13.98%	< 1%	N/A
<i>Inter-Mountain Basins Big Sagebrush Shrubland</i>	10.83%	<1%	<1%
<i>Inter-Mountain Basins Semi-Desert Shrub Steppe</i>	7.00%	2.71%	< 1%

*Systems with very small acreage are not represented in the table.

Mojave Mid-Elevation Mixed Desert Scrub

This ecological system is generally found in the eastern and central Mojave Desert and on lower piedmont slopes in the transition zone into the southern Central Basin and Range ecoregion. The vegetation in this ecological system is diverse. Characteristic species include blackbrush (*Coleogyne ramosissima*), eastern Mojave buckwheat (*Eriogonum fasciculatum*), Moromon tea (*Ephedra nevadensis*), Mojave yucca (*Yucca schidigera*), and Joshua tree (*Yucca brevifolia*). Grass species may include Indian ricegrass (*Achnatherum hymenoides*), Sandberg bluegrass (*Poa secunda*), or big galleta (*Pleuraphis rigida*).

Sonora-Mojave Creosotebush-White Bursage Desert Scrub

This desert scrub system is characteristic of the broad valleys, bajadas, plains, and low hills in the Mojave and lower Sonoran deserts. Creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia bumosa*) are typically the dominant species, but many shrubs may co-dominate or form sparse understories in any given area. Associated species include four-wing saltbrush (*Atriplex canescens*), desert holly (*Atriplex hymenelytra*), brittlebrush (*Encelia farinose*), Mormon tea (*Ephedra nevadensis*), ocotillo (*Fouquieria splendens*), water jacket (*Lyceum andersonii*) and beavertail cactus (*Opuntia basilaris*). The understory is typically sparse but may be seasonally abundant with short-lived wildflowers. Herbaceous species such as sandmat (*Chamaesyce spp.*) and woolygrass (*Dasyochloa pulchella*), and desert trumpet (*Eriogonum inflatum*) are common.

North American Warm Desert Bedrock Cliff and Outcrop

This vegetation pattern is found from subalpine to foothill elevations and includes barren and sparsely covered terrain (generally <10% plant cover) consisting of steep cliff faces with scree and talus slopes, narrow canyons, and smaller rock outcrops. There is a diverse suite of species including elephant tree (*Bursera microphylla*), ocotillo (*Fouquieria splendens*), teddybear cholla (*Opuntia bigelovii*), various succulent species, and lichens.

Great Basin Pinyon-Juniper Woodland

This pattern typically occurs on the dry mountain ranges of the Central Basin and Range ecoregion and the eastern foothills of the Sierra Nevada, typically at lower elevations ranging from 5200–8500 feet. These woodlands tend to be dominated by a mix of singleleaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*). Shrubs include multiple species of sagebrush (*Artemisia spp.*), mountain mahogany (*Cercocarpus spp.*), and grasses, such as bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), and needle-and-thread grass (*Hesperostipa comata*).

Great Basin Xeric Mixed Sagebrush Shrubland

This ecological system occurs in the Central Basin and Range ecoregion on dry flats and plains, alluvial fans, rolling hills, rocky hill slopes, saddles, and ridges at elevations between 3300–8500 feet. Sites tend to be dry and exposed to drying winds, generally with shallow, rocky, non-saline soils. Shrublands are dominated by black sagebrush (*Artemisia nova*), at mid to low elevations, little sagebrush (*Artemisia arbuscula*) at higher elevations, and may have codominant species such as Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) or yellow rabbitbrush (*Chrysothamnus viscidiflorus*). Other associated shrubs may include shadscale saltbush (*Atriplex confertifolia*), greasewood (*Sarcobatus vermiculatus*) or bud sagebrush (*Picrothamnus desertorum*).

Inter-Mountain Basins Big Sagebrush Shrubland

This vegetation type typically occurs in broad basins between mountain ranges, plains, and foothills in soils which are typically deep, well-drained, and non-saline. These shrublands are dominated by big sagebrush (*Artemisia tridentata* spp.), however scattered Utah juniper (*Juniperus osteosperma*), greasewood (*Sarcobatus vermiculatus*), and

saltbush (*Atriplex* spp.) may be present in some stands. Yellow rabbitbrush (*Chrysothamnus viscidiflorus*) and mountain mahogany (*Cercocarpus* spp.) may be codominate species in disturbed areas. Several grass species such as Indian ricegrass (*Achnatherum hymenoides*) or wild rye (*Leymus cinereus*) may be common.

Inter-Mountain Basins Semi-Desert Shrub Steppe

This ecological system occurs at lower elevations on alluvial fans and flats with moderate to deep soils. This semi-arid shrub steppe is typically dominated by grass species (>25% cover) with an open shrub layer. Characteristic grasses include Indian ricegrass (*Achnatherum hymenoides*), saltgrass (*Distichlis spicata*), and needle-and-thread grass (*Hesperostipa comata*). Woody species include four-wing saltbrush (*Atriplex canescens*), Greene's rabbitbrush (*Chrysothamnus greenii*), winterfat (*Krascheninnikovia lanata*), and broom snakeweed (*Gutierrezia sarothrae*).

Environmental Consequences

Impacts of Proposed Action

The total area of disturbance stemming from the two staging areas, and one vehicle pullout, would be less than four acres and is located outside of wilderness boundaries. Additionally, these actions are proposed on relatively disturbed sites, thus there would be nominal impacts to vegetation communities. Also, vehicle barriers would be constructed outside of wilderness to prevent vehicles from unauthorized travel inside wilderness, thus further limiting impacts to vegetation.

Very small amounts of vegetation may be temporarily impacted along cherry-stemmed or administrative access routes from authorized motorized access that may occur through future emergency stabilization and rehabilitation, wildlife management, grazing permittee administrative access, or fire management actions.

Approximately 92 miles (\approx 92 acres) of former vehicle routes would be decommissioned. Reclaiming decommissioned routes would reduce or eliminate further unauthorized incursions and new plant growth would enhance the vegetation communities in proximity to these former routes.

Small areas of vegetation could be disturbed or destroyed if vegetation is cut back or removed to protect sensitive archaeological and historic resources, such as prehistoric rock art, from wildland fire.

Approved research on native plant communities, vegetation restoration projects, and monitoring could improve vegetation communities within wilderness. The prohibition of geocaching would prevent disturbance to vegetation that could occur through object burial and the development of social trails relating to geocaching.

Impacts of No Action

Without the guidance of a management plan and subsequent monitoring, altered vegetation communities may persist or further degrade impacting wildlife habitat and increasing fire frequency and severity. Unmonitored recreational use of the wilderness areas could result in impacts to vegetation on foot-worn paths and at campsites. Not designating administrative access routes, staging areas, pullouts, or installing signs could lead to degradation of vegetative communities through an increase in motorized trespass and poor wilderness ethics from recreational users.

Wild Horses

Affected Environment

Wild horses are protected by the Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195). The law states, “To require the protection, management, and control of wild free-roaming horses and burros on public lands.” Wild horses, livestock, and wildlife all compete for limited resources in this arid environment. Spring damage has been attributed to wild horses and, in general, reproduction is greater than natural mortality; therefore management of population abundance is required to achieve or maintain rangeland health. Currently no wild burros are known to exist in the project area.

The Delamar Mountains and Meadow Valley Herd Areas (HAs) exist in the northern portion of Meadow Valley Range Wilderness (Ely District Approved RMP 2008). These two Herd Areas seek an Appropriate Management Level (AML) of zero. Periodic gathers may occur to achieve this AML. Gathers do not occur from March to July due to birthing of foals. Captured animals are taken to and cared for at short and long-term holding facilities.

Environmental Consequences

Impacts of Proposed Action

In general, no long-term impacts from periodic wild horse gathers would occur. Horses that may accumulate between gathers may be impacted from recreational use or grazing resource competition.

The herbicides that would be used in the site-specific control of Tamarisk and Sahara mustard are triclopyr, metsulfuron methyl, imazapyr, and picloram. The environmental consequences of these herbicides were analyzed in the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), which determined that for triclopyr there is some risk if horses consume contaminated vegetation; for metsulfuron methyl there is minimal risk; for imazapyr there is no risk; and for picloram impacts are not likely.

Impacts of No Action

Horse management would not differ without a wilderness management plan. Noxious weeds would be eradicated without the Plan. Therefore impacts would be the same as the proposed action.

Wilderness

Affected Environment

A Wilderness is an area designated by Congress and defined by the Wilderness Act of 1964 as a place that “(1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological , or other features of scientific, educational, scenic, or historical value.”

The Wilderness Management Plan addresses management of the 111,328 acre Delamar Mountains, 123,488 acre Meadow Valley Range, and 157,938 acre Mormon Mountains Wilderness areas. Wilderness characteristics are described under four categories: untrammeled, natural, undeveloped, and having outstanding opportunities for solitude or primitive and unconfined recreation. Table 9 (Page 102) provides a summary of the affected environment for the wilderness areas for which data was available.

Untrammeled

Trammels are modern human controls or manipulations which hinder and restrict components or ecological processes functioning within wilderness. The few trammeling activities that exist include various measures in the management of wildland fire, weeds, and removal of vegetation due to livestock grazing. Additional obstructions are present in the form of authorized allotment fences, pipelines, water troughs, and wildlife water developments.

Natural

These areas appear be substantially free from the effects of modern civilization, having been primarily affected by the forces of nature, and their primeval character is mostly preserved. Large wildfires occurred in the wilderness areas during the summer of 2005, burning a total of 146,272 acres and leaving no live vegetation. Some changes to the native vegetation composition have occurred, including the introduction of the non-native invasive annuals such as red brome, cheatgrass, Tamarisk, and Sahara mustard. Non-native chukar partridge and wild horses may be present in all three areas.

Undeveloped

The wilderness areas have few permanent improvements or other evidence of modern human presence or occupation. Structures which occur include range developments such as fence lines, pipelines, water troughs and reservoirs, corrals, as well as wildlife water

developments, abandoned mining claims, and unauthorized vehicle routes. There are also an unknown number aircraft crash sites, parts, and equipment.

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

The wilderness areas provide outstanding opportunities for people to experience solitude and primitive, unconfined recreation, including the values of inspiration and physical and mental challenge. Jagged peaks and ridges, rugged escarpments, and narrowly carved canyons in these areas provide excellent opportunities for solitude. The rugged terrain, steep rock faces, and caves provide for primitive recreation opportunities such as hiking, camping, climbing, caving, hunting, horseback riding, and nature study. Only the 14-day stay limit for camping in all three areas confines recreation opportunities.

Table 9. Summary of Affected Environment for the Wilderness Areas.

Wilderness Area	Fence lines (miles)	Pipelines (miles)	Corrals	Mines	Water Troughs and Reservoirs	Wildlife Water Developments	Vehicle Routes (miles)	Acres Burned (2005)	Acres Seeded
<i>Delamar Mountains</i>	4.44	0.15	1	-	4	13	11.29	48,199	-
<i>Meadow Valley Range</i>	0.41	-	-	-	4	6	28.15	64,076	1,430
<i>Mormon Mountains</i>	7.37	3.21	-	4	2	20	43.62	33,997	2,134

Environmental Consequences

Impacts of Proposed Action

Untrammelled

Under this alternative, trammeling activities would continue in the wilderness areas to the same extent as under the No Action. These trammeling activities include control of fire, emergency stabilization and rehabilitation after a fire, and control of non-native invasive plants. Although trammeling, these activities are expected to enhance the natural character of the wilderness areas.

Natural

The natural and primeval character of the wilderness would be maintained or enhanced under the Proposed Action, and would be improved as compared to the No Action. The proposed action would provide definite direction for the control of noxious weeds, and would direct fire management actions, and emergency stabilization and rehabilitation to reduce the potential for conversion and dominance of introduced annual grasses. Designation of trails would be expected to better direct visitors in ways that would prevent degradation of natural resources and prevent widespread impacts to vegetation and soils.

Undeveloped

The proposed action would designate 5.05 miles of trails. This is the minimum necessary to provide for recreational opportunities while protecting natural resources by directing the majority of visitors away from sensitive locations and preventing more widespread impacts. Decommissioning of unauthorized vehicle routes followed by vegetative restoration of those areas would improve the undeveloped qualities of the wilderness. Administrative access routes would remain and would impact wilderness character.

Outstanding Opportunities for Solitude and Primitive, Unconfined Recreation

Outstanding opportunities for solitude would be largely unaffected by the Proposed Action. Short-term impacts to solitude may occur from the use of helicopters or motorized equipment during wildlife management activities or emergency military operations. By designating trails, visitation may increase in those areas, causing the ability to find solitude to diminish; however the locations of the designated trails are known areas of scenic and recreational opportunities and over time use increases would be expected in those areas without trail designations. Solitude may remain impacted by military aircraft operations in airspace. Opportunities for primitive and unconfined recreation will remain outstanding throughout the wilderness. Trails may enhance the ability of some to enjoy primitive recreational opportunities. The Proposed Action allows for additional restrictions on recreation if monitoring indicates new damage to natural resources is occurring.

Impacts of No Action

Untrammelled

Impacts occurring to this character of wilderness would continue to the same extent as under the Proposed Action. These trammeling actions include suppression of fires, emergency stabilization and rehabilitation of vegetation after fires, and control on non-native invasive plants including noxious weeds. New activities that could create trammels would be considered on a case-by-case basis.

Natural

The naturalness and primeval character of wilderness would remain mostly the same. Invasive non-native plants including noxious weeds would remain and may spread in portions of the wilderness areas. Limited actions may be taken in fire management and emergency stabilization and rehabilitation to prevent further conversion of native to non-native vegetation communities compared to the Proposed Action. Lack of designated trails may cause impacts to new areas and resources such as vegetation and soils. No system or strategy for monitoring visitor use would exist to help preserve wilderness character.

Undeveloped

No trails would be designated under the No Action; however unauthorized vehicle routes would be available for use by hikers and equestrians. Personal property, unauthorized structures, or installations would be removed as encountered as long as they are not

culturally noteworthy. Removal of these items would maintain or improve the undeveloped character.

Outstanding Opportunities for Solitude or Primitive, Unconfined Recreation

Under the No Action, impacts to solitude, such as from military over flights would largely be the same as in the Proposed Action. Opportunities for primitive and unconfined recreation would remain outstanding throughout the wilderness areas. There would be no trail designation or signs provided, which may increase opportunities for solitude and primitive and unconfined recreation. No additional regulations would be implemented to confine or restrict recreational activities.

Cumulative Impacts

The purpose of the cumulative impacts analysis for the proposed action is to evaluate the combined, incremental effects of human activity within the scope of the project. The BLM Ely District Approved Resource Management Plan (2008) states that resource analysis will occur by watershed. CEQ regulations define scope to include connected actions, cumulative actions, and similar actions (40 CFR 1508.25). The project area overlaps with nine hydrogeographic basins, which are within the Colorado River Basin region; therefore the scope of the cumulative analysis will be restricted to actions within these basins (See Map 14, Page 107). The Council on Environmental Quality formally defines cumulative impacts as follows:

‘...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time’ (40 CFR 1508.7).

According to the 1997 CEQ Handbook *Guidelines for Assessing and Documenting Cumulative Impacts*, the analysis can be focused on those issues and resource values identified during scoping that are of major importance. The relevant issues identified during scoping for the proposed action related to fire management; the potential to spread noxious and non-native invasive weeds; recreation; special status species; and impacts to wilderness character.

Past Actions

In the past 25+ years, there have been 165 wildlife water developments (28 big game, 137 small game) within the hydrogeographic basins that overlap the management area. The big game water developments allowed for the reintroduction of desert bighorn sheep into the formerly designated Delamar Mountains Wilderness Study Area (designated as wilderness in 2004), as well as supporting desert bighorn sheep management in the

Desert National Wildlife Refuge. These water developments have also helped support mule deer and upland game bird management by the Nevada Department of Wildlife. These actions have also allowed small game and big game species to expand their distribution into unoccupied habitat and increase in numbers. There are 9 BLM administered wilderness areas and 7 ACECs within the scope of analysis. A wilderness management plan for three of the areas (Mt. Irish, South Pahroc, and Big Rocks) has been completed and approved. Grazing has been discontinued in the ACECs.

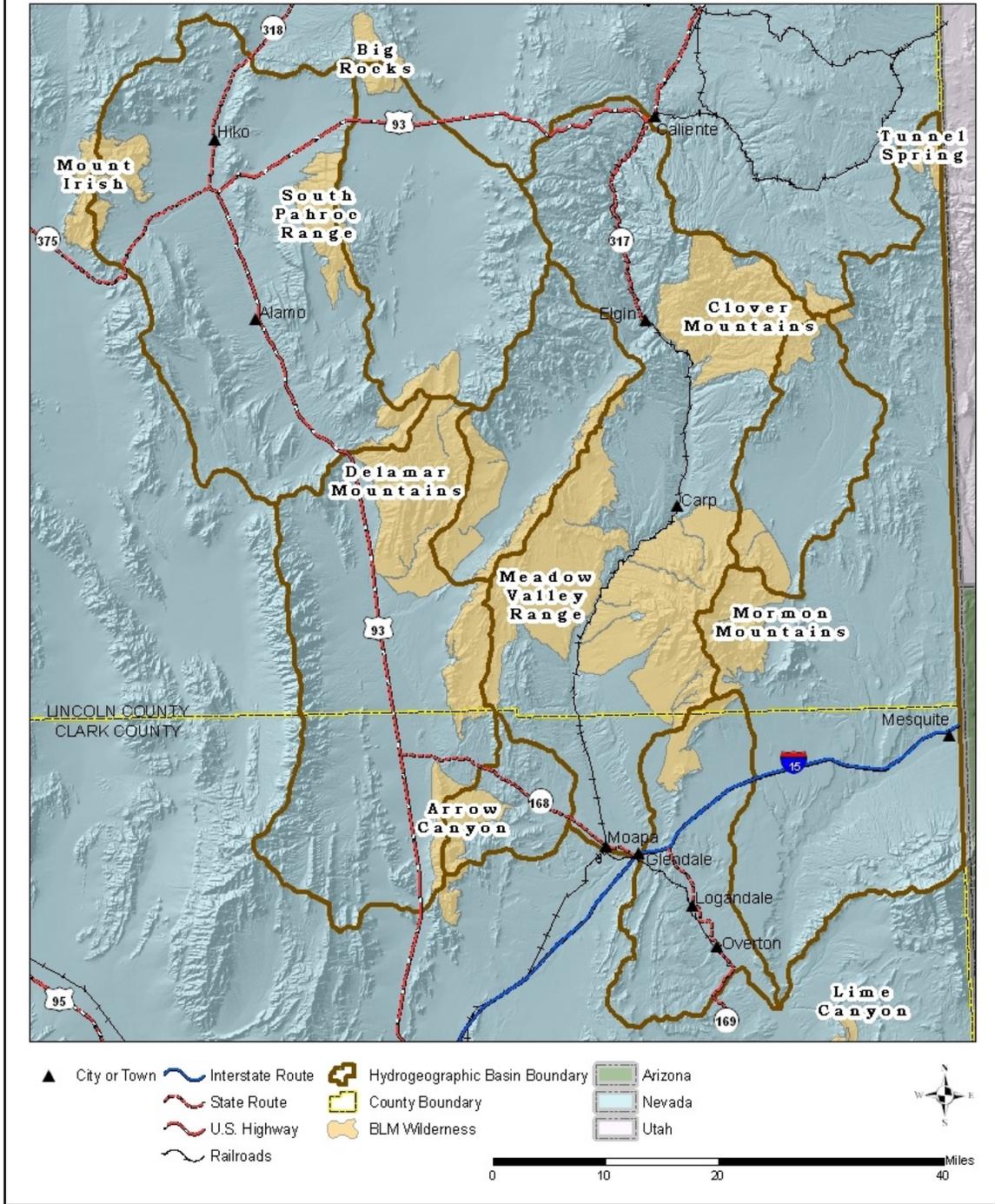
Present Actions

The scope of analysis encompasses many land uses relating to public and private land. Recreation includes OHV and motorcycle races on public lands. Domestic livestock grazing occurs outside of the Desert National Wildlife Refuge. The refuge manages their lands primarily for wildlife. Coyote Springs Land Company LLC (CSLDC) is developing a 43,000 acre master planned community just west of the southern portion of Meadow Valley Wilderness. One golf course recently opened with a 12,000 square foot community center currently under construction. The golf course has 11 water features. Major construction activities are underway for infrastructure that will support the development.

Reasonably Foreseeable Future Actions

The reasonably foreseeable future actions (RFFAs) within the project area include the following: Permanent road construction such as paving Kane Springs Road; Department of Defense activities such as retrieval of downed aircraft; wildland fire management activities; additional big and small game wildlife water developments; completion and implementation of other wilderness management plans; OHV races; lands sales and developments associated with Coyote Springs Land Company LLC (CSLDC); right of ways for pipeline, power line, and/or groundwater projects such as Southern Nevada Water Authority and the Lincoln County Water District (LCWD) water projects, and the Southwest Intertie Project (SWIP); and the 640 acre Toquop Energy Project, which includes one dry-cooled 750-MW generating unit, a rail line to transport coal to the plant, coal storage facilities, a water-supply system (including a well field and a water pipeline), waste management operation facilities, a power transmission interconnection to an existing power transmission, and water supplied by a pipeline from a well field in the Tule Desert.

Map 14. Geographic Area for Cumulative Effects Analysis



Fire Management

During the construction phase of any RFFAs, the potential for human-caused wildland fire would increase. However, the BLM's objective regarding fire management is 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 resource programs (BLM 2008b). The primary goals of the Fire Management Units in the area of analysis are to employ full suppression of all fires, utilize practices to minimize the loss of desert tortoise cover (where appropriate), and to hinder the spread of non-native invasive annual grasses. Fire management goals described in the proposed action are the same; therefore, no avoidable incremental cumulative impacts from fire management would occur.

Noxious and Non-native Invasive Weeds

Weeds have the potential to increase in distribution and abundance for any RFFAs during the construction phase. Post-fire ES & R projects seek to reduce the spread of invasive grasses. The proposed action would disturb a very small area compared to these other potential projects. Weed management would decrease the potential for weed reservoirs to exist inside wilderness boundaries. Moreover, best management practices and standard operating procedures that are focused on preventing the spread of weeds by vectors such as vehicles or equipment would be followed; thereby contributing a negligible effect to the overall cumulative impact to the potential spread of noxious and non-native and invasive weeds within these hydrogeographic basins.

Special Status Species

Individual wildlife may be affected negatively by displacement or disruption of normal behavioral patterns due to construction, project operations and maintenance, and site rehabilitation stemming from RFFAs. For instance, the current and future golf courses in the Coyote Springs development have the potential to impact movement of desert bighorn sheep (or other wildlife) because of the water sources contained on the golf courses (currently 11). In addition, some of these projects and actions could increase traffic, wildlife conflicts with humans, and competition among displaced individuals for habitat niches. Some of these actions may also decrease forage quality, quantity, and composition. Overall, the proposed action would disturb a very small area separate from other RFFA project areas (< 4 acres); following the reasonable and prudent measures and associated terms and conditions for the desert tortoise would minimize or negate affects to individual tortoises from staging area construction, fire management, and weed treatments; the proposed action would result in minor habitat loss in ACECs (<1.5 acres); thereby minimal incremental cumulative impact would occur to special status species within these hydrogeographic basins.

Recreation

Within the area of analysis there is a wide range of recreational opportunities including motorized recreation. Within wilderness boundaries motorized recreation is prohibited by

the Wilderness Act (1964). Motorized access to the cherry-stemmed route near the Tri-canyon area in Meadow Valley Wilderness may be restricted by a Habitat Conservation Plan being developed by Coyote Springs Land Company, LLC in consultation with the US Fish and Wildlife Service and The Conservation Fund. However, foot and horse access would not be limited. All other cherry-stemmed routes would be accessible. The proposed action would develop staging areas and install signs near other potentially higher use wilderness access areas. The Proposed Action would also designate two foot/equestrian trails to enhance visitor's experiences while maintaining opportunities for solitude and primitive forms of recreation in other areas of. Depending upon a visitor's point of view, the Proposed Action either enhances or detracts from the overall recreation experience. Overall, the Proposed Action enhances or maintains recreational opportunities in wilderness; therefore it would not incrementally add to the cumulative effects on recreation.

Wilderness Character

By law (LCCRDA 2004), no buffer zones are created to protect wilderness from the influence of activities on land outside of wilderness boundaries. Wilderness character may be diminished by RFFAs but the Proposed Action has no administrative authority to prevent these impacts. Climate forecasts predict increasing heat and drought for the southwest United States. Installation of future wildlife water developments may increase trammeling in wilderness, but will enhance the natural character by allowing some native wildlife to expand into suitable but water-limited habitat. Fire and weed management activities may increase trammeling, but the goals are to restore natural vegetation communities that support the natural character of wilderness. Grazing uses may impact some wilderness characteristics, but are allowed by the Wilderness Act (1964). Trail designation may impact the undeveloped character of wilderness, but may enhance opportunities for solitude in other areas of wilderness. Management goals for all wilderness areas in the area of analysis are similar; therefore the long-term cumulative contribution of effects to overall wilderness character would not occur or would be negligible.

Conclusion

The overall direction of wilderness management is to preserve wilderness characteristics. In combination with past, present, and reasonably foreseeable future actions, the Proposed Action does not meaningfully add to the cumulative impacts from those actions.

Monitoring Program

Monitoring of wilderness is a component of the Ely District Wilderness Program. Monitoring tracks the outcome of proposed activities on all wilderness characteristics, not just the one specific character that the activity was primarily intended to address. The Wilderness Management Plan contains a detailed monitoring section starting on Page 54

Consultation and Coordination

A public notification will be posted on the Ely District Office website when this Environmental Assessment is completed, the Decision Record /Finding of No Significant Impact is signed and a 30-day appeal period initiated.

A Notice of Intent was mailed to known interested parties in January of 2008. The first internal scoping meeting was held at the Caliente Field Office on January 7, 2008 with the first interdisciplinary meeting held on February 7, 2008. Public scoping workshops were held at the Caliente Field Office on April 1 and July 7, 2008, the Mesquite Campus Library on April 2 and July 1, 2008, and at the BLM Las Vegas Field Office on April 9 and June 30, 2008. Meetings specifically for livestock grazing concerns were held at the BLM Caliente Field Office on April 15, 2008 and June 4, 2008; and at the Great Basin Institute Ely Field Office June 6, 2008. A letter was also sent to appropriate grazing permittees asking for input on the BLM's assessment of access needs for range improvements on September 15, 2008.

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List of Agencies and Persons Consulted

BLM Las Vegas Field Office
 The Conservation Fund—Mike Ford
 Eastern Nevada Landscape Coalition
 Lincoln County Commissioners
 Nevada Department of Wildlife
 Nevada Farm Bureau
 Nellis Air Force Base
 Southern Nevada Grotto
 Sustainable Grazing Coalition—Richard A. Orr
 Wingfield Nevada Group—Tim Echeverria, Tim Reynolds

Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level (Wild Horses)
AMR	Appropriate Management Response (Fire)
ARPA	Archaeological Resources Protection Act of 1979
AUM	Animal Unit Month
BLM	Bureau of Land Management
BLM—APHIS MOU	Memorandum of Understanding between the Bureau of Land Management and the United States Department of Agriculture, Animal and Plant Health Inspection Service
BLM-NDOW MOU	Memorandum of Understanding between the Bureau of Land Management and the Nevada Department of Wildlife, Wildlife Management in Nevada BLM Wilderness Areas (BLM MOU 6300-NV930-0402)
DAT	District Archeological Technician
EA	Environmental Assessment
EPA	Environmental Protection Agency
E S & R	Emergency Stabilization and Rehabilitation
FMP	Fire Management Plan
FMU	Fire Management Unit
FRCC	Fire Regime Condition Class
GPS	Global Positioning System
HCP	Habitat Conservation Plan
HA	Herd Area (Wild Horses and Burros)

LCCRDA	Lincoln County Conservation, Recreation, and Development Act of 2004
MFP	Management Framework Plan
MIST	Minimum Impact Suppression Tactics (Fire)
MRDG	Minimum Requirements Decision Guide
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
RMP	Resource Management Plan
SAD	Suppression Activity Damage
SHPO	State Historic Preservation Office
SOP	Standard Operating Procedure
UPPR	Union Pacific Railroad
USDA—APHIS	United States Department of Agriculture, Animal and Plant Health Inspection Service
USFWS	United States Fish and Wildlife Service
WMP	Wilderness Management Plan

Glossary

Annual — Completing the life cycle in one growing season or single year.

Archaeological Resource — Any material remains of past human life or activities that are of archaeological interest.

Archaeological Site — The locations of past human activity, occupation or use, identifiable through inventory, historical documentation or oral history

Catastrophic Wildfire — A fire event causing notable ecosystem or societal damage as a result of heavy fuel loads and an unnatural fire regime

Cherry Stem — A dead-end road or feature that forms a portion of a wilderness boundary and that remains outside the Wilderness.

Fire Regime — The characteristics of fire in a given ecosystem, such as the frequency, predictability, intensity, and seasonality of fire.

Former Vehicle Route — A road used by motorized vehicles prior to wilderness designation that was closed to motorized or mechanical use by the designation of the area as wilderness.

Invasive — Describes a species, which takes over a new habitat where it was not previously found, often to the detriment of species that were there before.

Minimum Tool Requirement — The concept of minimum requirement comes from Section 4 (c) of the Wilderness Act of 1964. “Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act...”

Noxious Weed — Any plant designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property.

OHV— Off-highway vehicle.

Perennial — Active throughout the year, or living for many years.

Primeval — At or from the ancient original stages in the development of something.

Solitude — A quality of quiet remoteness or seclusion in places from which human activity is generally absent.

Untrammeled — Not limited or restricted, unrestrained by man.

Appendices

Appendix A

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

May 27, 2008

Project Name

Delamar Mountains Wilderness, Meadow Valley Range Wilderness, and Mormon Mountains Wilderness Management Plan and Environmental Assessment

Location

Delamar Mountains Wilderness, Meadow Valley Range Wilderness, and Mormon Mountains Wilderness in southern Lincoln and northern Clark Counties, Nevada.

Summary of project site

This project provides the primary management guidance for the Delamar Mountains, Meadow Valley Range, and Mormon Mountains Wilderness. Proposed actions include the rehabilitation of unauthorized and former vehicle routes totaling 92 acres, the potential to construct vehicle staging areas to accommodate visitation, and the installation of signs and kiosks. The plan also guides the removal of structures, emergency stabilization and rehabilitation, and the management of weeds within the wilderness

areas. Some proposed actions could temporarily disturb the ground, although no ground-disturbing actions are proposed to occur near any of the documented noxious or invasive weed populations.

Noxious and invasive weeds identified within the three Wilderness include Sahara mustard (*Brassica tournefortii*) and Tamarisk (*Tamarix* spp.). Within the Meadow Valley Wash there are mapped infestations of Russian knapweed (*Acroptilon repens*), Sahara mustard, Musk thistle (*Carduus nutans*), hoary cress (*Lepidium draba*), tall whitetop (*Lepidium latifolium*), Scotch thistle (*Onopordum acanthium*), and Tamarisk. There is also rip-gut brome (*Bromus diandrus*), red brome (*Bromus madritensis* spp. *rubens*), and cheatgrass (*Bromus tectorum*) scattered within the wash.

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

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

Low (3). No ground-disturbing actions are proposed to occur near areas with documented Sahara mustard or Tamarisk infestations. A site-specific treatment action is proposed to control the Sahara mustard population near the western boundary of the Mormon Mountains Wilderness and the infestations of Tamarisk scattered through drainages in all three Wildernesses. If weed populations expand to any new parts of the project area, the proposed Wilderness Management Plan provides active control and management procedures.

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

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

High (8). The consequences of noxious weed establishment in these Wilderness areas can be evaluated by their effect on Wilderness character, and by their effects on the project’s vegetation communities. Currently, these Wilderness areas have few, small, and isolated weed infestations that generally do not deduct from the “natural condition” of these areas. Because the Wilderness Act requires Wilderness areas, “To be managed so as to preserve [their] natural conditions,” the consequences of the establishment and spread of noxious and invasive weeds to Wilderness character would be high. Several areas in the Wilderness areas may be prone to unnatural fire regimes and the subsequent, extensive spread of cheatgrass or other Brome species.

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

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

Moderate (24). The risk rating for this project is moderate. Actions to prevent the establishment and expansion of weeds include the site-specific treatment of Sahara mustard and Tamarisk. During routine Wilderness monitoring, the presence of noxious and invasive species will be recorded, and followed with treatment as guided by the Management Plan. Clear guidelines for managing and treating noxious and invasive weeds are stated in the proposed Management Plan.

Reviewed by: _____

Bonnie Million
Ely District Weed Coordinator

_____ Date

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