BLM

Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area

Preliminary Environmental Assessment

DOI-BLM-NV-W030-2011-0001-EA

U.S. Department of the Interior
Bureau of Land Management
Winnemucca District Office

NATIONAL SYSTEM OF PUBLIC LANDS

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

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1 Introduction

1.1 Wilderness Designation

The Bureau of Land Management (BLM) proposes to write a Wilderness Management Plan (WMP) for the wilderness areas designated by the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000. These areas are: the Black Rock Desert, Calico Mountains, East Fork High Rock Canyon, High Rock Canyon, High Rock Lake, Little High Rock Canyon, North Black Rock Range, North Jackson Mountains, Pahute Peak and South Jackson Mountains Wildernesses. The wilderness areas are located in proximity to each other approximately 120 miles northeast of Reno, Nevada and 80 miles northwest of Winnemucca, Nevada in Humboldt, Pershing and Washoe Counties.

Table 1-1. Wilderness Acreage

Wilderness	Acres
Black Rock Desert	314,835
Calico Mountains	64,968
East Fork High Rock Canyon	52,618
High Rock Canyon	46,465
High Rock Lake	59,107
Little High Rock Canyon	48,345*
North Black Rock Range	30,648
North Jackson Mountains	23,439
Pahute Peak	56,890
South Jackson Mountains	54,536
*Additional 40 acres acquired in 2010	

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:

- **Large, roadless tracts of land –** area is at least 5,000 acres of land with no permanent roads, or is of sufficient size to make practicable its preservation and use in an unimpaired condition
- **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 primitive and unconfined recreation, including the values associated with physical and mental inspiration and challenge.
- **Supplemental values** – complementary features of scientific, educational, scenic or historic values.

This plan incorporates the decisions analyzed within the Wilderness Route Reclamation Environmental Assessment (NV-020-02-030).

For all specific actions identified, the EA, associated NEPA documentation, and public involvement process serves as the Minimum Requirements Decision Guide (MRDG; also known as "Minimum Tool"; see Appendix A) and Notice of Proposed Action required by Bureau policy and guidelines.

1.2 Purpose and Need

The purpose of creating a Wilderness Management Plan is to preserve the areas' wilderness characteristics by identifying the conditions and opportunities that will be managed for within the wilderness areas, creating specific guidelines for management of wilderness resources and activities, and identifying management needs outside of, and immediately adjacent to these areas over a ten-year span.

The need for the Wilderness Management Plan 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 plan would provide specific direction to achieve this mandate.

1.3 Land Use Plan Conformance

The proposed action and alternatives are consistent with the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness Areas, and other Contiguous Lands in Nevada Record of Decision and Resource Management Plan (NCA RMP) (2004).

1.4 Relationship to Laws, Regulations, and other Plans

The Proposed Action and Alternatives are in compliance with the following laws, regulations and other plans:

- 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 National Environmental Policy Act of 1969 (42 U.S.C. §§4321-4347, January 1, 1970, as amended 1975 and 1994)
- Migratory Bird Treaty Act (U.S.C. §§ 703-712, July 3 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989)
- The Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 (Public Law 106-554), as amended
- 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)
- Nevada Revised Statute 503.660, camping restricted to areas more than 300 feet from springs.

The Proposed Action and Alternatives are in conformance with the following handbooks, guidelines, and manuals:

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

1.5 Identification of Wilderness Specific Issues

The NCA RMP provides several management goals which affect the wilderness areas. It is anticipated that implementation of management actions to achieve some goals will be controversial, and may be best addressed through a range of alternatives. In addition, other management decisions to address various issues were deferred to this Wilderness Management Plan. During the spring of 2006, formal public scoping as part of the National Environmental Policy Act (NEPA) planning process was completed. Thirty public comments were received as a result of this process. All issues and concerns were considered during the development of the range of alternatives described in this Environmental Assessment (EA) and are as follows;

1. Opportunities for solitude and primitive, unconfined recreation:
   - How will visitor education, interpretation and law enforcement be implemented?
   - What criteria such as social and ecological elements should be used to establish use capacities?
   - How will public use be facilitated through commercial outfitter-guide permits, maintenance and development of facilities such as roads and trails as well as access easements?
   - What is the appropriate amount and type of signing necessary to manage wilderness areas?

2. Protecting and enhancing the undeveloped and natural appearance of the wilderness areas:
    - How will historic structures be managed? What will be the minimum tool for preservation of structures to be retained or for removal of those structures where active preservation will not occur?
    - How should non-historic surface disturbances including former vehicle routes and mining disturbances be restored?
    - How will unnecessary and non-historic facilities and trash be removed?
    - How should cultural and paleontological resources be managed to protect their values?

3. Preserving naturalness, primeval character and influence of the wilderness areas:
    - When will wildlife trapping and relocation activities be permitted?
    - Will management of wild horses and burros in wilderness be based on this plan or the development and/or revision of Herd Management Area Plans (HMAP)?
    - What is the appropriate management for fire? Should natural and human-caused fires be managed the same way?
    - How will timely and effective Emergency Stabilization and Rehabilitation (ESR) following fires in wilderness be conducted?
    - What are the appropriate methods for restoration of native vegetation communities?
    - How will fuel levels be managed in relation to fire?
    - How will threatened and endangered species be managed?
    - What are the appropriate methods and levels of control of non-native invasive species?
    - How will natural conditions of riparian areas be restored or maintained?

4. Management of special non-wilderness uses allowed by the Wilderness Act:
    - How will access to and maintenance of existing authorized range developments within wilderness be permitted?
    - How will access to and maintenance of existing wildlife water developments be permitted?
    - How will private in-holdings be accessed?
    - How will access for emergency operations including search and rescue, downed aircraft and livestock be managed?

Some issues identified during public scoping are already addressed in existing planning documents or policy and are not within the scope of this plan. These items are listed below:

- Issuance of livestock permits—The Wilderness Act explicitly allows grazing to continue at levels equal to those prior to wilderness designation.
- Wild horse and Burro Herd Management Areas (HMA) and Appropriate Management Levels (AMLs) — Adjustments to established AMLs are done through a Decision Record for other plans including Herd Management Area Plans (HMAPs). This plan establishes a schedule for

the development or review of all HMAPs that include these wilderness areas.

- Aircraft over flights—Neither the Wilderness Act nor the NCA Act include jurisdiction of aircraft flying above wilderness areas.
- New surface disturbing projects—existing guidance provided by manual sections and handbooks is adequate to address any future projects within wilderness. Decisions related to future surface disturbing projects except for those specifically identified in the plan, will be excluded from the plan.
- Management of fish and wildlife populations—Both the Wilderness Act and the NCA Act provide for the continued jurisdiction of the State of Nevada for the management of fish and wildlife.
- Allowing public use of motorized or mechanized vehicles or equipment within wilderness or moving wilderness boundaries to allow motorized access to adjacent areas—The Wilderness Act prohibits motorized vehicles in wilderness and only Congress has the authority to move or modify wilderness boundaries.

2 Description of Proposed Action and Alternatives

The action items listed for each alternative implement previously established management guidance provided by the 1964 Wilderness Act, the 2000 Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area (NCA) Act, Final Supplemental Regulations for the NCA, the Code of Federal Regulation, Bureau of Land Management Policy, NCA RMP, or specific planning issues and objectives identified through the scoping process. Together, guidance from these various sources constitute the Wilderness Management Policy/Guidance of the plan. The sources for each Wilderness Management Policy/Guidance are identified throughout this chapter and precede the action items for each of the three alternatives (No Action Alternative, Proposed Action, and the Action Alternative). The Nevada BLM and the Nevada State Historic Preservation Office (SHPO) have entered into a Programmatic Agreement concerning the Proposed Actions in this WMP. This Programmatic Agreement covers all aspects of the planning, development, and construction of the elements of the Proposed Action and Alternatives. The implementation of the actions contained in the Proposed Action and Alternatives will be administered in accordance with the stipulations contained in the Programmatic Agreement (refer to Appendix B).

No Action Alternative (Continue Present Management):

The No Action Alternative represents management that would occur without preparing a Wilderness Management Plan. It is presented as a baseline for comparison of management action impacts among the alternatives. Direction for this alternative is derived primarily from guidance found in the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Resource Management Plan (NCA RMP) and in BLM policy and management manuals for lands designated as wilderness.

Proposed Action:

The Proposed Action emphasizes the need to maintain and enhance wilderness qualities in the areas. High priority is placed on maintaining an indigenous Great Basin ecosystem through vegetation, riparian and post-fire management. The Proposed Action allows for the potential future use of non-native species in reclamation projects in order to prevent the establishment of cheat grass after fire disturbance and to promote the long term establishment of native plant species. The Proposed Action provides specific direction for the management of cultural resources, primitive and unconfined recreation, wildlife and wild horses and burros, livestock grazing, valid existing rights and restoration of disturbed areas.

Action Alternative:

The Action Alternative generally emphasizes more restrictive approaches to maintaining current conditions for recreation in the wilderness areas. The Action Alternative also provides more restrictive guidance for the inspection and maintenance of some range developments.

2.1 Management of Historic Structures

Historic Structures

Wilderness Management Policy/ Guidance	Source
For all permanent structures within the Wilderness Areas which are not necessary for permitted use, determine the historic value and appropriate management actions needed for long-term preservation.	*Objective CRM-(RMP), 36 CFR 60, Planning Issue*

2.1.1 No Action Alternative (Continue Present Management)

Strategy A: Cultural resource management would be limited for the most part to inventories and mitigation needed for specific projects, in compliance with Federal laws and regulations. Excavations and inventories for scientific or other purposes would be authorized on a case-by-case basis.

2.1.2 Proposed Action

Strategy A: Within ten (10) years of the Decision Record for the plan, inventory and evaluate the National Register of Historic Places eligibility of the buildings within the wilderness areas. Structures which do not have historical significance and are not eligible for the National Register of Historic Places as required by Bureau policy may be removed on a case-by-case basis. Some structures may be allowed to decay naturally.

Rationale: Permanent structures within the wilderness areas are not necessary for valid existing rights or for public health and safety and if the structures are determined not eligible for the National Register of Historic Places and are not found to be the minimum necessary for administration of the areas as wilderness, they must be removed or allowed to decay naturally where removal would cause a greater negative impact on wilderness character.

Strategy B: For structures which do have historical significance (including those eligible for the National Register of Historic Places), provide the minimum protection necessary to reduce the risk of destruction from natural events, including weathering and other management activities such as wildfire, prescribed fire, and flooding. In some cases allow structures which are not historically significant to naturally decay over time.

Rationale: Historically important structures add to the cultural resource value of the NCA and the wilderness areas. These cultural resource values were the primary reason Congress designated the NCA, much of which is

included within these wilderness areas. Providing some level of protection for historic structures is a compromise between preserving cultural resources and managing for wilderness naturalness.

2.1.3 Action Alternative

Same as 2.1.2 Proposed Action, except for those strategies modified or added as described in this section.

Strategy B: For structures with a positive determination under 2.1.2 Strategy B, provide additional protection of structures through increased patrol by rangers and law enforcement and provide active protection as part of wildland fire suppression actions. Such actions could include the use of protective foil materials, fire retardants, and fuel breaks.

Strategy C: Structures which are determined eligible for the National Register of Historic Places would be restored following damage from natural events or vandalism to their desired condition.

2.2 Management of Cultural and Paleontological Resources

Cultural Resources

Wilderness Management Policy/ Guidance	Source
To protect and interpret all cultural resources for the benefit of current and future generations.	*Objective 2.2.3B (RMP)*

2.2.1 No Action Alternative (Continue Present Management)

Strategy A: Cultural resource management would be limited for the most part to inventories and mitigation needed for specific projects, in compliance with Federal laws and regulations. Excavations and inventories for scientific or other purposes would be authorized on a case-by-case basis.

2.2.2 Proposed Action

Strategy A: Within six (6) years of the Decision Record for the plan, complete a systematic survey of ancient shoreline areas surrounding Cave "E" to document and record any additional cave sites and other historic properties which contain evidence of prehistoric or historic use by people.

Rationale: Due to the cultural significance of resources lost through vandalism of Cave "E", it is imperative any nearby caves which might contain similar resources are found and recorded so as to better document and protect those resources before additional information is lost.

Strategy B: As part of this plan, excavations less than one cubic meter may be authorized to gather information in support of permitted archeological research efforts within the wilderness areas. All excavations would be

restored to their previous natural appearance at the end of the site visit. Excavations must follow BLM/SHPO protocol, Native American Consultation process, the completion of an Archaeological Resources Protection Act (ARPA) permit, BLM field work authorization, MRDG analysis, and all other applicable laws, policies, and regulations. All work would be completed with hand tools with materials being transported in and out of wilderness on foot or with pack stock. Under this plan, no excavations would occur within established buffer zones and seasonal restrictions for species of concern or federally threatened or endangered species. All excavation activities must occur outside of the nesting season for migratory birds.

Rationale: Quality of research designs and preservation values would drive permit authorization in the wilderness areas. The Wilderness Act states that areas "shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." The proposed excavations would encourage fulfillment of the scientific, educational, and conservational purposes of the Act.

2.2.3 Action Alternative

Same as 2.2.2 the Proposed Alternative.

Paleontological Resources

Wilderness Management Policy/ Guidance	Source
Inventories of paleontological resources will focus on the West Arm of the Black Rock Desert, Soldier Meadows and the Black Rock Desert Wilderness.	*PAL-1 (RMP)*

2.2.4 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative there would be no specific direction for the management of paleontological resources. Direction would come from the NCA RMP and existing Bureau regulations and policy.

2.2.5 Proposed Action

Strategy A: Within three (3) years of the Decision Record for the plan and dependent upon available funding and staffing, initiate site visits to the western portion of the Black Rock Desert Wilderness to locate and record paleontological resources. All sites would be placed into one of the categories listed in the NCA RMP Appendix F Cultural, Traditional, and Paleontological Resource Use Categories.

Rationale: Past efforts have discovered valuable resources within the Black Rock Desert Wilderness found at few other locations in the region, including mammoth remains. However, these remains are not completely fossilized and once exposed to the elements quickly become brittle and disintegrate—with

any value completely lost. For this reason excavation may be permitted to preserve the information value of the fossils.

Strategy B: Conduct annual site visits to northern portions of the High Rock Canyon and East Fork High Rock Wildernesses to locate, inventory, and document paleontological resources if funding and staffing allows. Diagnostic samples would routinely be collected resulting in minimal surface disturbance with the use of hand tools to aid in the identification of resources. All excavations would be restored to their previous natural appearance.

All activities would comply with Native American consultation procedures and all other applicable laws, policies, and regulations.

Rationale: These two areas posses some of the best preserved and most varied fossilized prehistoric animal remains within the region. Visits to these areas continue to greatly expand scientific knowledge and interpretation of past habitats and animal life.

Strategy C: As part of this plan, excavations less than one cubic meter may be authorized to gather information in support of permitted paleontological research efforts within the wilderness areas. All excavations would be restored to their previous natural appearance at the end of the site visit. Excavations must follow BLM/SHPO protocol, Native American Consultation process, the completion of an Archaeological Resources Protection Act (ARPA) permit, BLM field work authorization, MRDG analysis, and all other applicable laws, policies, and regulations. All work would be completed with hand tools with materials being transported in and out of wilderness on foot or with pack stock. Under this plan, no excavations would occur within established buffer zones and seasonal restrictions for species of concern or federally threatened or endangered species. All excavation activities must occur outside of the nesting season for migratory birds.

Rationale: Quality of research designs and preservation values would drive permit authorization in the wilderness areas. The Wilderness Act states that areas "shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." The proposed excavations would encourage fulfillment of the scientific, educational, and conservational purposes of the Act. Additionally, past efforts have discovered valuable resources within the Black Rock Desert Wilderness found at few other locations in the region, including mammoth remains. However, these remains are not completely fossilized and once exposed to the elements quickly become brittle and disintegrate—with any value completely lost. For this reason excavation may be permitted to preserve the information value of the fossils.

2.2.6 Action Alternative

Same as Proposed Alternative with the following addition:

Strategy D: As part of this plan, seek funding to conduct comprehensive paleontological studies in areas of high fossil potential within the ten wilderness areas.

Rationale: Better knowledge concerning the location of sensitive paleontological resources would enhance scientific knowledge and provide BLM with information that allows better management of these resources

2.3 Introduction, Spread and Control of Non-native Invasive Species

Wilderness Management Policy/ Guidance	Source
To protect the natural condition and biodiversity of the planning area by preventing or limiting the spread of noxious weeds [as identified in the Nevada State Noxious Weed List (Nevada Revised Statute 555.0100)] that displace native vegetation; to use Integrated Weed Management principles to detect and eradicate all existing infestations; to eliminate new infestations before they begin to spread; and to prevent or limit the spread of established weeds into areas containing little or no infestation.	*Objective VEG-2.2.8F(RMP):*
To prevent the total acres dominated by invasive annual species (cheatgrass and other similar plants) within the planning area from increasing over the life of the plan.	*Objective VEG-2.2.8G (RMP):*
Control of noxious weeds will be conducted using the best combination of treatment practices developed specifically for the target species and infested site, consistent with Nevada Revised Statute 555.010. Such treatments will include Best Management Practices consistent with Integrated Weed Management principles.	*VEG-11 (RMP):*
Weed infestations in the Wilderness Zone will be controlled by methods consistent with a minimum required/tool analysis and Integrated Weed Management principles. Noxious weeds in the Wilderness Zone will be controlled using hand tools and, where manual treatments alone will not eradicate weed populations, with chemical and biological methods.	*VEG-12 (RMP):*

2.3.1 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative management of non-native invasive species would be treated on a case by case basis per the District Noxious Weed Plan and the NCA RMP recommendations listed above.

Strategy B: As a priority, focus efforts on the eradication and control of both large and small populations of existing species which present a high degree of risk to ecosystem stability and which are anticipated to spread into unaffected areas without active management.

Rationale: Salt cedar, tall whitetop, knapweed, and other highly invasive noxious weeds are likely to continue to spread within wilderness areas unless continued management action is taken. The spread of these weeds deteriorates the natural qualities of wilderness character.

2.3.2 Proposed Action

Strategy A: Within three (3) years of the Decision Record for the plan, implement a systematic weed inventory program across the Planning Area. The program would include:

- training of staff, and volunteers in weed species identification
- coordination with local weed management districts or Cooperative Weed Management Areas (CWMAs)
- exploration of remote sensing techniques to enhance field inventories.

Strategy B: Implement Integrated Weed Management practices including:

- Prevention of disturbing activities to maintain competitive vegetation/root cover and reduce the distribution and introduction of noxious weed seed.
- Manual removal with hand tools if weeds could be controlled or eradicated without causing re-sprouting, without soil disturbance leading to expansion of non-native invasive species, and where infestations are of a size manageable by hand crews.
- BLM approved herbicides applied by backpack and stock equipment, where manual control is not effective.
- 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.
- BLM approved 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 a size that herbicide cannot be effectively applied without motorized equipment.
- Reseeding treated areas preferably with native species of native genetic stock. Reseeding methods for each site would be determined using an MRDG.

  Rationale: Reseeding greatly reduces the likelihood of invasive species recolonizing treated areas. Because the exact locations potentially needing treatment are unknown at this time, there is no way of knowing what methods of reseeding would be most effective. Depending on terrain, acreage, season, and other factors different methods may include hand-spreading, aerial spreading, or mechanical means.

Strategy C: As a priority, focus efforts on prevention and the eradication and control of existing populations which present a high degree of risk to ecosystem stability and populations of newly introduced species which are small and easily treated over the short-term using Integrated Weed Management practices (BLM 2007) *(Citation: BLM 2007. BLM Vegetation Treatments Using Herbicides Final Programmatic EIS Record of Decision. Department of the Interior, Bureau of Land Management. September 2007)* and/or site-specific livestock grazing.

Strategy C.1: Site-specific treatments using livestock grazing could be allowed if there were no potential for measureable adverse effects (i.e. introduction or spreading of disease, competition for limited water, displacement from important habitats, etc.) on native wildlife.

Strategy D: For well established large weed populations, focus control efforts on areas of high resource value. Such areas would include threatened or endangered species' habitat, rare or unique habitats, Areas of Critical Environmental Concern, and spring sources.

2.3.3 Action Alternative

Same as 2.3.2 Proposed Action

2.4 Managing Natural Vegetation Condition

Wilderness Management Policy/ Guidance	Source
Land Health Standards developed with the assistance of the two Resource Advisory Councils will apply to all uses and programs. Specifically the riparian and water quality Land Health Standards for the Sierra Front-Northwestern Nevada and NE California-NW Nevada Resource Advisory Councils as identified in Appendix B of the RMP.	*LHS-1 (RMP):*

2.4.1 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative the management of riparian areas within wilderness would follow NCA RMP decisions concerning Land Health Standards.

Strategy B: Under the No Action Alternative the Calico Mountains Agricultural Trespass would be allowed to continue to recover from the agricultural trespass without any rehabilitation treatments. Due to the loss of native seed in the soil, disturbance and compaction associated with the cultivation of alfalfa and the associated weeds that occurred on this site during the trespass, it is unlikely that this site's vegetation community would improve much beyond invasive annual grasses and forbs.

2.4.2 Proposed Action

Strategy A: Within two (2) years of the Decision Record for the plan, complete a stratified sampling of spring sources and meadows to determine condition, functionality, risks and priorities for restoration.

Strategy B: Within two (2) years of the Decision Record for the plan, complete an inventory of all springs and associated meadows in the High Rock Canyon, East Fork High Rock Canyon, High Rock Lake, and Little High Rock Canyon wildernesses to support the National Riparian Service Team project and the evaluation of wildlife waters as previously agreed to with the Nevada Department of Wildlife.

Strategy C: Under the Proposed Action, the BLM would attempt to restore natural conditions at the Calico Mountains Agricultural Trespass.

Because the trespass involved cultivation for irrigated crops, this area was repeatedly disked, planed and compacted, developing a 'Plow Pan' in the soil from 8" to 12". Reclamation of this agricultural trespass site would consist of the following considerations and steps:

To develop a proper seedbed for this site, it would be necessary to rip the soil to a depth of 12" to allow for adequate moisture infiltration and seeded species root penetration for successful germination and establishment of selected seed mix. After broadcast seeding over the ripped soil surface, incorporation of the seed into the soil would be necessary using a 'Drag Bar', 'Mat Harrow' cultipacker, imprinter or some other mechanical means.

The seed mix for this site would consist of the following species at the described rates:

Species	PLS/Lbs/Ac	Bulk/ Lbs/Ac	Seeds/Ft²	Native?
Sandberg's Bluegrass	1	1.4	23.0	Yes
Indian Ricegrass	3	3.3	9.7	Yes
Bottlebrush Squirreltail	3	4.3	13.2	Yes
Shadscale	3	6.3	4.5	Yes
TOTAL	10	15.3	50.4	Yes

This area would need to be removed from grazing pressure for a minimum of three years after treatment.

2.4.3 Action Alternative

Same as 2.4.2 Proposed Action except

Strategy C: Recommend wilderness boundary adjustment to remove Calico Mountain Agricultural Trespass area from wilderness status.

Wilderness Management Policy/ Guidance	Source
To maintain or achieve, within 15 years, Properly Functioning Condition status for 90 percent of wetland vegetation community sites within the planning area consistent with Land Health Standards.	*Objective 2.2.8.H (RMP):*
The water quality of the Snow Creek, Battle Creek, Colman Creek, … Donnelly Creek, …, Paiute Creek, Jackson Creek, Happy Creek, and Mary Sloan Creek watersheds will be managed to meet the life history requirements of the Lahontan cutthroat trout where they currently occur or as potential recovery streams.	*WATER-1 (RMP):*
Water quality will be provided for current and future uses through establishment of measurable water quality objectives consistent with EPA, State or Tribal water quality standards, and implement management practices to achieve those standards. Objectives and practices will be adjusted to conform to changing resource and user conditions.	*WATER-3 (RMP):*

2.4.4 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative management of riparian areas would follow the NCA RMP decisions and objectives listed above.

2.4.5 Proposed Action

Strategy A: Develop a protocol to rapidly assess wetland sites to determine conditions and risks. Train staff and volunteers in the methodology.

Strategy B: Develop an evaluation and action process to determine best management practices for those riparian systems not meeting applicable Land Health Standards or water quality standards, and for Lahontan cutthroat trout streams not meeting the life history requirements of the Lahontan cutthroat trout. The process for assessing Proper Functioning Condition would follow protocol in technical references 1737-9 *Process for Assessing Proper Functioning condition for Lotic Areas*, 1737-11 *Process for Assessing Proper Functioning condition for Lentic Riparian-Wetland Areas*, or 1737 *Using Aerial Photographs to Assess Proper Functioning Condition of Riparian – Wetland Areas*.

See also 2.4.2 Strategies A and B.

2.4.6 Action Alternative

Same as 2.4.5 Proposed Action

2.5 Management of Fire Suppression, Fuels, and Emergency Stabilization and Rehabilitation

Wilderness Management Policy/ Guidance	Source

Rehabilitation and restoration efforts will be conducted in areas burned by wildland fires and subject to invasion by invasive species.	*Objective FIRE-1 (RMP):*

2.5.1 No Action Alternative (Continue Present Management)

Strategy A: Rehabilitation and restoration efforts in wilderness would follow guidelines provided in the BLM Burned Areas Emergency Stabilization and Rehabilitation handbook or other applicable guidance.

2.5.2 Proposed Action

Same as 2.5.1 No Action Alternative

2.5.3 Action Alternative

Same as 2.5.1 No Action Alternative

Wilderness Management Policy/ Guidance	Source
All of the (RMP) planning area will be placed in one of two management categories (Category A- Full Suppression; Category B- Less than Full Suppression (when conditions allow) to meet desired outcomes).	*FIRE-2 (RMP):*

2.5.4 No Action Alternative (Continue Present Management)

Wildland Fire Management would follow direction outlined in the NCA RMP. Manage Fire Suppression response for multiple objectives and prescribed fire within Category A and B management areas. Fire management would use the Wildland Fire Decision Support System (WFDSS) or applicable updates to support and document wildfire management decisions.

Rationale: A wildland fire may be concurrently managed for one or more objectives and objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions. Fire managers may implement aggressive suppression actions or may use less aggressive or minimal actions in other areas where the fire is accomplishing a benefit such as restoration of the natural habitat conditions.

2.5.5 Proposed Action

Strategy A: Emphasize the maintenance and restoration of natural conditions and natural plant community succession. Manage fire suppression response for multiple objectives and prescribed fire within the Category B lands for priority consideration, primarily within the High Rock Canyon, East Fork High Rock Canyon, North Jackson Mountains and South Jackson Mountains wildernesses. Fire management would use the Wildland Fire Decision Support System (WFDSS) or applicable updates to support and document wildfire

management decisions. The process would provide situational assessment, analyze hazard and risk, and define implementation actions, and document decision and rationale for decisions.

Rationale: The identified areas include higher elevation mountain big sagebrush (Artemesia tridentate ssp. vaseyana) in portions of the East Fork High Rock Canyon, Little High Rock Canyon, Calico Mountains, High Rock Lake, North Black Rock Range and Pahute Peak wildernesses, and Utah juniper (Juniperus osteosperma) communities in the North and South Jackson Mountain Wildernesses. These vegetation communities are dominated by native species and would be expected to respond positively to fire, where wildland fires would be expected to lead to a mosaic of successional stages and where fire size would be expected to remain relatively small—resulting in more natural conditions and plant community succession. Terrain and fuels in the High Rock Canyon and Jackson Mountain Wildernesses is expected to create hazardous wildfire condition with little potential for aggressive full suppression. In addition, natural fire occurrence within High Rock Canyon Wilderness is rare and intermittent and unlikely to restore natural conditions affected by past grazing.

2.5.6 Action Alternative

Strategy A: Allow natural processes to continue by minimizing the amount of management control or manipulations. Manage fire suppression response for multiple objectives within Category B lands for priority consideration, primarily within the North Jackson Mountains, South Jackson Mountains, and Black Rock Desert Wildernesses. Fire management would use the Wildland Fire Decision Support System (WFDSS) or applicable updates to support and document wildfire management decisions. Fire management would use a decision support process to guide and document wildfire management decisions. The process would provide situational assessment, analyze hazard and risk, define implementation actions, and document decision and rationale for decisions.

Rationale: The identified areas include Utah juniper (Juniperus osteosperma) communities in the Jackson Mountains and the barren portions of the Black Rock Desert. These vegetation communities are dominated by sparse stands of trees or shrubs with fire size expected to remain small—requiring minimal activities and disturbance to implement the level of fire suppression needed to protect wildlife habitat. Terrain and fuels in the Jackson Mountains Wildernesses are expected to create hazardous wildfire conditions with little potential for aggressive full suppression. Wildfire within the Black Rock Desert Wilderness occurs very infrequently and is not anticipated to result in threats to life, property, or other resource values

Wilderness Management Policy/ Guidance	Source
Prescribed fire may be used throughout the planning area to achieve vegetation and other	*FIRE-3 (RMP):*

objectives consistent with the intent of the NCA Act and protection of private property.	

2.5.7 No Action Alternative (Continue Present Management)

Strategy A: Use fuel treatments including prescribed fire, mechanical or chemical treatments on a project-by-project basis to reduce fuels in wilderness to achieve one or a combination of the following; maintain natural conditions, improve or sustain a primary wilderness value, promote perpetuation of threatened or endangered species, correct unnatural conditions, and reintroduce or maintain natural conditions of fire dependent ecosystem.

Strategy B: For BLM-managed areas outside of the wilderness areas, implement hazardous fuels reduction projects using prescribed fire, mechanical, biological, or chemical treatments to reduce the risk of wildfire to wilderness areas, reduce the intensity and spread of wildfire, protect structures, and enhance and protect important resource values.

Rationale: Use of appropriate fuel treatments would protect, improve or sustain wilderness values and/or critical wildlife habitat. Treatments outside of wilderness would protect infrastructure and important resource values.

2.5.8 Proposed Action

The proposed action is the same as the No Action Alternative except the Category B lands would have priority consideration for prescribed fire. These lands are located, primarily within the High Rock Canyon, East Fork High Rock Canyon, Little High Rock Canyon, North Jackson Mountains and South Jackson Mountains Wilderness areas.

Wildfires within Category B lands that threaten LCT streams would be fully suppressed.

2.5.9 Action Alternative

The action alternative is the same as the Proposed Action.

2.6 Management of Primitive or Unconfined Recreation Opportunities

Wilderness Management Policy/ Guidance	Source
The entire 1,205,040 acre (RMP) planning area will be administered as a Special Recreation Management Area. (This includes the entire planning area included in this Plan)	*REC-1 (RMP):*
All public lands within the planning area are assigned to one of the three zones, Front Country, Rustic, or Wilderness. Management zones will be used to guide recreation and visitor services management activities in the planning area. Appendix L contains detailed descriptions of the philosophy and management guidelines for each zone.	*ZONES-1 (RMP):*

2.6.1 No Action Alternative (Continue Present Management)

Strategy A: Maintain recreation conditions and activities consistent with Wilderness Zone characteristics as described in the NCA RMP (see Appendix C).

Strategy B: Provide custodial management to maintain existing recreation conditions. Provide signage, public contact, monitoring, outreach and restoration only to the degree necessary to achieve prescribed objectives from the NCA RMP for the Wilderness Zone.

Rationale: The NCA RMP provides a summary description of the intended visitor experience, resource condition or character and the appropriate facilities and activities consistent with the summary description for the Wilderness Zone.

2.6.2 Proposed Action

Strategy A: In addition to the specific management actions for recreation activities carried forward from the NCA RMP, additional actions would be taken to address specific issues causing negative impacts to wilderness character and resources if they develop. Actions might include:

- Increase public outreach and education activities including Leave No Trace© and Tread Lightly!© principles to encourage minimum impact practices.
- Provide more information to the public on non-wilderness recreational opportunities in the region to decrease use impacts.
- Establish protective zones around sensitive areas where recreation activities would be restricted or limited.
- Close or limit use in specific areas or trails/routes to all or certain types of recreation activities.
- Institute camping restrictions and/or carrying capacity limits. These could include establishment of permit systems, length of stay limitations, establishment of designated camping areas, rotation of use sites, group size limits, and/or seasonal restrictions.
- Rehabilitate and/or rest impacted sites.
- Organize clean-up projects.
- Improve boundary signing.
- Place signs within the boundary to inform visitors of sensitive resources, i.e, cultural or historic sites.
- Publish maps and guides displaying use areas, restrictions, and regulations and policies.
- Establish a monitoring program to determine when wilderness character is being degraded.

2.6.3 Action Alternative

Strategy A: Maintain recreation conditions and activities consistent with Wilderness Zone characteristics as described in the NCA RMP. However, manage recreation to maintain only existing use levels.

Strategy B: Same as 2.6.2 Proposed Action Alternative.

Permit systems

Wilderness Management Policy/ Guidance	Source
Permit systems may be implemented to mitigate resource impacts in areas where visitation is causing resource damage, user conflict or crowding at attraction areas, or where specific uses create safety concerns.	*REC-2 (RMP):*

2.6.4 No Action Alternative (Continue Present Management)

Strategy A: Take actions to distribute use, such as requiring the use of designated campsites, limiting group size and marketing alternative locations before using permit systems to achieve social standards.

Rationale: The opportunity to visit wilderness in an unconfined manner, without a high degree of management presence or authorization is important to the primitive recreation experience. No significant resource conflicts, user conflict or crowding have been observed at present.

2.6.5 Proposed Action

Strategy A: If monitoring of key indicators indicates that implementation of a permit system is warranted, it would be put in place.

Rationale: If monitoring of wilderness character and resource indicators shows decreasing quality, establishment of permit systems may be an action taken to reduce impacts. Permit systems would not be put into place unless warranted to avoid unnecessary limitations on the visitor experience.

2.6.6 Action Alternative

Same as 2.6.4 Proposed Action. However, managing recreation to maintain existing use levels would increase the likelihood of implementation of permit systems as use is expected to increase slightly over the 10 year timeframe of this plan.

Limits on Use

Wilderness Management Policy/ Guidance	Source
Limits on human activities may be set in areas that experience adverse impacts to resources or the visitor experience. These limits may affect areas of use, group size, duration of stay, number of people or vehicles, or types of activities allowed.	*REC-3,4 (RMP):*

2.6.7 No Action Alternative (Continue Present Management)

Strategy A: Maintain existing management controls. However, establish limits on use on a case-by-case basis for areas or sites where monitoring indicates resource impacts, user conflicts or other adverse impacts to the natural, cultural or recreational resources. These limitations may include group size, areas of use, duration of stay, number of people or types of activities.

Rationale: Limits on use may be warranted based on monitoring, to protect wilderness values.

2.6.8 Proposed Action

Strategy A: Same as 2.6.7 No Action Alternative

Strategy B: Geocaching within the wilderness areas would be allowed solely for "virtual" caches that are educational in nature and do not require physical items, facilities or surface disturbance.

Rationale: Wilderness management policy generally prohibits permanent man-made structures or facilities, except as necessary to manage for wilderness values. Geocaching has the potential to create new disturbance and to alter visitor use patterns, which would be inconsistent with the desired setting conditions and could create impacts to sensitive resources.

Strategy C: Existing and any permanent climbing anchors installed in the future would be evaluated for safety and visual impacts. Unsafe or visually intrusive permanent anchors would be removed using hand or small battery operated tools. The rock climbing prohibition in High Rock Canyon would be actively enforced. (Federal Register 2008) *(Citation: Federal Register 2008. Supplementary Rules for the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area and Associated Wilderness, and Other Contiguous Lands in Nevada. Federal Register Notice Vol 73, No 131 page 39030. July 8, 2008)*.

Rationale: Documented historic and cultural resources within the Planning Area include prehistoric pictographs and petroglyphs and historic rock inscriptions. The conservation and protection of these resources are among the primary purposes established by Congress for the NCA and the wilderness areas. Because evidence of other users is generally inconsistent with wilderness management principles and we suspect a number of similar undocumented resources are scattered throughout the Planning Area, the prohibition of fixed and/or permanent climbing anchors would help protect cultural and historic resources and preserve the natural character of the wilderness areas.

Strategy D: Recreational horseback riding and use of pack stock animals would be allowed 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.

Strategy E: Where monitoring data indicate standards for campsite condition are being exceeded due to use by large groups, group size limitations would be implemented.

Strategy F: Allow the use of temporary blinds 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 would be considered unattended property and/or permanent structures and would 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)).

Rationale: The creation or construction of permanent blinds in wilderness areas is not allowed (43 CFR 6302.20(f). However, portable or "pop-up" blinds are commonly used throughout Nevada, and were used within the Planning Area prior to wilderness designation. Allowing this use to continue is consistent with the Wilderness Act and the wilderness management goals.

2.6.9 Action Alternative

Same as 2.6.8 Proposed Action

Camping Opportunities

Wilderness Management Policy/ Guidance	Source
Dispersed camping will generally be allowed throughout the wilderness zone.	*REC-5,7,8,9 (RMP):*

2.6.10 No Action Alternative (Continue Present Management)

Strategy A: Dispersed camping would generally be allowed throughout wilderness.

Strategy B: To protect resources in areas where monitoring data indicate that camping is causing impacts to resources or the visitor experience, camping may be restricted, eliminated or assigned to new or relocated sites.

Strategy C: Camping would be restricted to areas more than 300 feet from springs unless otherwise designated.

Rationale: Camping use in the vicinity of water sources has the potential to impact scarce and valuable riparian vegetation, water accessibility by wild horses and burros, permitted livestock, and the wildlife species that depend on them for forage, cover or other life requirements. This restriction is also mandated under Nevada State Law.

Strategy D: Dune and hummock areas associated with the playa may be closed to camping if monitoring indicates negative impacts to sensitive soils, vegetation, the viewshed, archeological sites, or critical wildlife habitat.

Strategy E: The BLM standard 14 day stay limit for camping would apply to the 10 wilderness areas.

Strategy F: Campsites impacting riparian systems would be removed and rehabilitated.

Rationale: Riparian corridors and spring systems provide pleasant locations for camping due to the presence of riparian vegetation and water for drinking and cleaning. Camping use would be managed to ensure that recreational use is not causing impacts which exceed rangeland health standards and negatively impacting wildlife and wild horses and burros. Camping opportunities would be retained where impacts from recreation use can be minimized or mitigated through site management and public education.

2.6.11 Proposed Action

Strategy A-F: Same as 2.6.10 with the following modifications and additions.

Strategy E: The BLM standard 14 day stay limit for camping would apply to the 10 wilderness areas. However, if monitoring indicates increasing negative impacts on wilderness character and resources, the allowable length of stay for certain areas may be limited.

Strategy G: Campsite condition and associated impacts would be evaluated using the campsite standards in Appendix D: Campsite Condition Classification.

Strategy H: In areas where monitoring indicates negative impacts from camping are degrading wilderness character and resources, camping would be limited to designated campsites.

Strategy I: In areas where campsite impacts routinely exceed the prescribed Campsite Condition Class due to campfire use, the use of fire pans or fire blankets would be required.

Strategy J: In areas where monitoring indicates that opportunities for solitude are decreasing and/or campsite conditions are being exceeded due to large group size, group size could be limited.

2.6.12 Action Alternative

Same as 2.6.11 Proposed Action.

Trails Management

Wilderness Management Policy/ Guidance	Source
Non-motorized trails may be constructed, relocated or closed to mitigate human caused impacts. The National Desert Trail route (93 miles) will be designated through Wilderness and the NCA.	*REC-15,16 (RMP):*

2.6.13 No Action Alternative (Continue Present Management)

Strategy A: There are currently no designated trails in the planning area.

Strategy B: Designate the citizen-proposed Desert Trail route as a point-to-point orienteering route and indicate the orienteering route on publications and maps for visitors. The route would be accepted as proposed without evaluation, inventory, or improvement.

Rationale: There is a small public demand for primitive recreational hiking opportunities in the Planning Area. The sections of the Desert Trail which would enter the East Fork High Rock Canyon, High Rock Canyon, High Rock Lake, and Pahute Peak Wildernesses are part of a larger proposed system that stretches from the Mexican border to Washington State. This trail system has already been promoted and published by private and non-profit groups.

2.6.14 Proposed Action

Strategy A: There are currently no designated trails in the planning area. However, new trails may be constructed and existing human created social trails relocated or removed if they become a problem.

Strategy B: Within one (1) year of the Decision Record for the plan, initiate a systematic baseline inventory of the citizen-proposed Desert Trail route, proposed trailheads, and checkpoints within the Planning Area. Areas with potential adverse impacts to other resources such as cultural sites, greater sage grouse breeding areas, bighorn sheep lambing areas, and excessively steep terrain with highly erodible soils would be identified. Adjustments to the location of the point-to-point orienteering route would be made as necessary to minimize potential for adverse impacts associated with public use of the route and to minimize the need for management facilities (e.g. constructed trail, directional markers, signs, etc.) to mitigate such impacts in the future.

Rationale: The location for the Desert Trail route has been proposed by a private organization. This route has not been evaluated to determine what impacts are likely to occur with increased use, or to determine the usability of the route for most wilderness visitors. Before this route is formally recognized, it must be shown to have little or no likelihood for adverse impact to the wilderness resource or conflict with other management objectives for the wilderness areas.

2.6.15 Action Alternative

Strategy A: Same as 2.6.13 No Action Strategy A

Strategy B: Same as 2.6.14 Proposed Action Strategy B

Wood Collection Restrictions and Limitations

Wilderness Management Policy/ Guidance	Source
Cutting of green or standing trees in the planning area will be prohibited, and wood collection may be further restricted in sensitive habitat areas or where resources have been depleted.	*REC-19 (RMP), 43 CFR 6302.20(h):*

2.6.16 No Action Alternative (Continue Present Management)

Strategy A: Cutting of green or standing trees in the planning area would be prohibited, and wood collecting may be further restricted in sensitive habitat areas or where resources have been depleted.

Rationale: Cutting of trees within the wilderness areas is currently prohibited by 43 CFR 6302.20(h). What few trees occur within the planning area are valuable aesthetically, as habitat for wildlife, and for their shade at campsites. A number of older trees which are still living were inscribed decades ago by sheep herders, ranchers, hunters, and other travelers and are considered historic resources.

2.6.17 Proposed Action

Strategy A: Same as 2.6.16 No Action.

Strategy B: Encourage partners and private businesses to sell firewood in gateway communities and local businesses (i.e. Gerlach, Empire, Cedarville, Nixon, and Soldier Meadows Guest Ranch).

Rationale: The high desert climate does not provide ample firewood sources or campfire use. Continued on-site fire wood collection would likely lead to unacceptable impacts to camping areas and the surrounding landscape. Encouraging the use of imported firewood would prevent damage to vegetation, whether dead or alive, and would provide for local business opportunities.

2.6.18 Action Alternative

Same as 2.6.17 Proposed Action

Collection of Rocks, Minerals, and Common Invertebrate Fossils

Wilderness Management Policy/ Guidance	Source
Collection of rocks, minerals, and common invertebrate fossils will be authorized. Collection using non-motorized hand tools and causing minimal surface disturbance will be allowed without permit. However, permits may be required in areas experiencing resource damage or where desirable material becomes depleted. Collection will be limited to 25 pounds per day plus one piece, with a maximum collection of 250 pounds per year. Collection limits may be waived for scientific or educational use under permit.	*REC-20 (RMP) Final Supplemental Rules (NCA):*

2.6.19 No Action Alternative (Continue Present Management)

Strategy A: Collection of rocks, minerals, and common invertebrate fossils would be authorized. Collection using non-motorized hand tools and causing minimal surface disturbance would be allowed without permit. However, permits may be required in areas experiencing resource damage or where desirable material becomes depleted. Collection would be limited to 25 pounds per day plus one piece, with a maximum collection of 250 pounds per year.

Minimal surface disturbance would be defined as the removal or displacement of less than two (2) cubic feet of material with all soil and material replaced and recontoured to appear natural.

Rationale: This definition is based upon the estimated minimum disturbance required to excavate a single specimen of rock or mineral weighing 250 pounds or less which would typically weigh 140 pounds or more per cubic foot.

2.6.20 Proposed Action

Strategy A: Same as 2.6.19 No Action Alternative

Strategy B: Identify and work with partners to provide recreational rock hounding opportunities outside the Planning Area.

Rationale: Opportunities beyond casual or occasional collection of small quantities of rock and mineral specimens are not identified benefits of wilderness resource management. There is potential for these types of recreation opportunities at other nearby locations outside wilderness.

2.6.21 Action Alternative

Same as 2.6.20 Proposed Action.

Commercial Outfitting and Guiding

Wilderness Management Policy/ Guidance	Source
[Special Recreation Permits] SRPs will be limited to certain geographic areas based on the permit class that the proposal is given.	*REC-23 (RMP):*

2.6.22 No Action Alternative (Continue Present Management)

Strategy A: Authorize permits on a case-by-case basis for use of the Planning Area. Authorize only Class I permits for use of designated wilderness. The number of active Special Recreation Permit for commercial outfitting and guiding within the wilderness areas would be limited to the minimum number necessary to ensure opportunities for wilderness solitude and primitive recreation are available to a broad segment of the visiting public.

Strategy B: Stipulations listed in Appendix E: Outfitter & Guide stipulations would be included for all commercial outfitters and guide SRPs.

2.6.23 Proposed Action

Strategy A: Based upon historic commercial use for any single wilderness area, six (6) commercial outfitters or guides operating within any single wilderness area during the peak use season would be established as the management threshold. Guide activities would be monitored and if the management threshold is exceeded in two of five consecutive calendar years, a competitive limited commercial permit system would be implemented with the award of commercial permits based upon a particular outfitter or guide's ability to meet wilderness and recreation management objectives of the NCA RMP and this plan.

Rationale: While it is assumed the number requests for commercial guide and outfitter special use permits would not change dramatically over the next several years, the extent to which these activities are necessary for activities which are proper for realizing recreation or other wilderness purposes must be determined and thresholds established in order to make future management decisions. Based upon Nevada Department of Wildlife records for 2004-2008, an average of six (6) commercial guides or outfitters took clients into hunt units 12, 34, and 35—which include all ten wilderness areas. In 2009, 13 guides operated in unit 12, 8 in unit 34, and 1 in unit 35. It is estimated from guide self-reporting that less than 60% of the 2009 hunts occurred within wilderness.

Strategy B: Same as 2.6.22 Strategy B with the following addition:

Stipulations would include a requirement for all outfitters to practice basic Leave-No-Trace/Tread Lightly behaviors while operating within the Planning Area.

2.6.24 Action Alternative

Same as 2.6.23 Proposed Action, except for the following modifications:

Strategy A: As the No Action alternative manages recreation use to existing levels, commercial outfitter and guide permits would be based on the lowest number of permits issued and used from 2002-2009. Guide use areas would be established and designated for each operator.

Strategy B: Stipulations would include a requirement for all outfitters to complete a basic Leave-No-Trace©/Tread Lightly!© awareness course to operate within the Planning Area.

Access and Transportation Management

Wilderness Management Policy/ Guidance	Source
Wilderness access routes and routes defining wilderness boundaries that are designated as motorized trails (primitive roads) would be maintained in accordance with the motorized trail maintenance level 2 (Maintenance Intensity 1) to provide continued vehicle access consistent with their conditions at the time of wilderness designation.	*TRAN-7 (RMP):*

2.6.25 No Action Alternative (Continue Present Management)

Strategy A: Maintain roads (boundary routes and wilderness access routes/cherry stems) to provide traditional levels and types of access for wilderness as defined in Appendix F: Condition and Use of Wilderness Access/ Cherry stem Routes.

Rationale: The existing transportation network consists of a variety of road types, conditions and purposes. County highways and a limited number of BLM system roads provide primary access corridors to the wilderness. Off of the maintained roads, access can be challenging and typically cannot be gained with a two-wheel drive or large truck. Primitive conditions contribute to the opportunities for solitude and escape from everyday civilization and have therefore been recognized as an important attribute that contributes to the recreation experience.

Strategy B: The portion of the High Rock Canyon Trail between the mouth of High Rock Canyon and about 5 miles below Steven's Camp would be seasonally closed to vehicle use from February 1 until the second weekend in May.

Rationale: The intent of the closure is to prevent damage to the Emigrant Trail and reduce human impacts to wildlife, including disturbance of lambing bighorn and nesting raptors.

2.6.26 Proposed Action

Same as 2.6.26 No Action.

2.6.27 Action Alternative

Same as 2.6.25 No Action.

Legal Public Access

Wilderness Management Policy/ Guidance	Source
Where public roads cross private property, BLM will acquire public access easement or develop road alignments to avoid the private property following a route analysis process that includes appropriate environmental analysis.	*TRAN-9 (RMP):*

2.6.28 No Action Alternative (Continue Present Management)

Strategy A: Identify and prioritize routes which currently lack legal public access. Priority easement areas are also shown Map19.

A.1. Four-wheel drive access along approximately 0.6 miles of existing road through a private parcel along Slumgullion Road (T.40N., R.25E, sec. 19, E1/2) to maintain public access to the North Black Rock Range and Pahute Peak Wildernesses.

A.2. Four-wheel drive access along approximately 0.9 miles of existing road through a private parcel at Jackass Flats (T.37N., R.25E., sec. 20) to maintain existing access to the Calico Mountains and High Rock Lake Wildernesses.

A.3. Four-wheel drive access along approximately 1.2 miles of existing road through private parcel(s) along Shoestring Valley (T.42N., R.24E., sec. 30, SW1/4 SE1/4 and Sec. 31 W1/2 NE1/4 and sec. 31 W1/2 SE1/4) to maintain public access to the East Fork High Rock Canyon Wilderness.

A.4. Primitive high-clearance four-wheel drive access along 2.1 miles of existing road through two parcels in the upper portion of the North and South Forks of Battle Creek (T.41N., R.26E., sec. 35, E1/2; T.40.N., R.26E., sec.1, W1/2, and sec. 2, SE1/4) to maintain public access to the North Black Rock Range and Pahute Peak Wildernesses.

A.5. Primitive high-clearance four-wheel drive access along approximately 0.9 miles of existing road through three parcels in the lower portion of Sheep Creek (T.39N, R.27E., sec. 16, T.39N., R.26E., sec. 13, SW1/4, NE1/4 and sec. 14, S1/2, NE1/4.) to maintain public access to the North Black Rock Range and Pahute Peak Wildernesses.

A.6. Primitive high-clearance access along approximately 3.1 miles of existing road between Little High Rock Canyon Wilderness and High Rock Lake Wilderness (T.39N R.24E sec. 8 NW ¼, 30 SW ¼, and 31 SW ¼; T.49N R.23E sec. 24; T.38N R.23.5E sec. 1, 13 SW ¼, and 24 NW ¼) to maintain access to Little High Rock Canyon, High Rock Lake, and High Rock Canyon Wildernesses.

A.7. Primitive high-clearance access along approximately 1.2 miles of existing road to maintain access to Happy Camp cherry-stem within North Jackson Mountains Wilderness Area. (T.41.N R.32.E sec. 38; T.42.N R.32.E sec. 5 NW ¼)

Rationale: Public access to the wilderness areas is provided through a variety of primitive roads, routes and trails. The majority of these routes are located on non-wilderness lands administered by the BLM. However, segments of some routes pass through parcels of private property and in many cases no easement exists to ensure continued public access across these private parcels. In most cases, legal public access to the wilderness areas can currently be achieved through alternate routes, but securing legal access along existing routes would maintain the type and level of access the public currently enjoys. The Bureau has determined easements, in order of priority, for public access through the above areas should be pursued to maintain the greatest level of access to the wilderness areas.

Strategy B: Easements across parcels identified as part of 2.6.28 Strategy A would be actively pursued from willing landowners. Easements for access across other parcels which would maintain additional access to the wilderness areas would only be pursued at the request of willing landowners to the extent acquiring such access would not reduce or diminish the potential for meeting higher priority access needs identified in this plan.

Strategy C: If the BLM determines the likelihood of obtaining access across a parcel identified in this plan is very low, non-motorized routes would be identified and marked around private lands as necessary for visitor safety and resource protection.

2.6.29 Proposed Action

Same as 2.6.28 No Action Alternative, except for those strategies modified or added as described in this section.

Strategy C: If the BLM determines the likelihood of obtaining access across a parcel identified in this plan is very low, non-motorized routes would be identified and marked around private lands as necessary for visitor safety and resource protection. If the construction of these routes is determined to be

necessary they would be constructed within the wilderness areas to meet established BLM standards for pack stock and foot travel and to meet accessibility guidelines for primitive recreation trails (Architectural and Transportation Barriers Compliance Board 2007) *(Citation: Architectural and Transportation Barriers Compliance Board 2007. 36 CFR 1195 Architectural Barriers Act (ABA) Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule. In: Federal Register June 20, 2007).*

2.6.30 Action Alternative

Same as 2.6.29 Proposed Action Alternative, except for those strategies modified or added as described in this section.

Strategy C: No non-motorized access routes would be constructed.

2.7 Management of Visitor Education, Interpretation, and Law Enforcement

Visitor Education and Interpretation

Wilderness Management Policy/ Guidance	Source
A variety of potential information and formats will be used to provide outreach and interpretive opportunities. The various outreach and interpretive materials and programs can be divided into two major components: Off-site and On-site tactics.	*Section 2.2.21 pg 2-56 (RMP)*

2.7.1 No Action Alternative (Continue Present Management)

Strategy A: Manage to attain the desired settings identified in the Wilderness Zone using appropriate tactics identified in the NCA RMP.

Strategy A.1: Visitor Services and Management Controls would focus on the use of off-site information for public outreach purposes. The following off-site public outreach products and programs would be developed and implemented:

- Develop a hunting ethics and responsibilities guidebook. Partner with Nevada Department of Wildlife to distribute to license and tag holders and for publication in the Nevada Game Book. Information would include BLM's policy for overnight camping and temporary structures (i.e. hunting and photography blinds) within wilderness.
- Develop a public map with adequate scale to clearly articulate wilderness boundaries and designated vehicle routes.
- Develop web-based information in cooperation with partners. Web information should include the following minimum information:
    - Wilderness regulations

- Detailed maps sufficient to clearly articulate wilderness boundaries.
- Wilderness use ethics – Leave-No-Trace© principles
- Recreation opportunities for hiking, hunting and horseback use.
- Emphasize public education/outreach and peer monitoring through continuation of programs such as Leave No Trace© and Tread Lightly!© trainer and awareness courses.

Strategy A.2: On-site information would be located primarily outside wilderness. The following on-site visitor services would be implemented:

- Most on-site information would be located outside wilderness and would include area personnel, signs, kiosks, and NCA Portal sites.
- Within wilderness, on-site visitor services would be either non-existent or very limited with area personnel seldom available.
- Increased Law Enforcement presence.

Rationale: Information is needed to inform visitors about camping regulations and about the importance of leaving historic artifacts untouched. However, lack of human development is an important wilderness characteristic. Placing information outside of wilderness boundaries allows for visitor education without impinging on wilderness character.

Strategy B: BLM would work with local interest groups and other non-governmental organizations to recruit volunteers to assist in developing and implementing interpretive and environmental programs as well as other resource and outreach projects.

2.7.2 Proposed Action

Same as 2.7.1 No Action Alternative**.**

Action Alternative

Same as 2.7.1 No Action Alternative.

Wilderness Signing

Wilderness Management Policy/ Guidance	Source
Wilderness boundaries will be adequately signed to identify boundaries for the public. Route signing will be used to identify use status and concentrated in areas where vehicle trespass is common.	*WILD-2 (RMP):*

2.7.3 No Action Alternative (Continue Present Management)

Strategy A: Wilderness boundaries would be adequately signed to identify boundaries for the public.

Strategy A.1: To aid in the enforcement of wilderness regulations, some boundaries may require that signs be placed within sight of each other.

Strategy A.2: Wilderness boundaries that follow contour lines, surveyed lines or other map based features that are not near vehicle access routes would be signed only as required to prevent unauthorized motorized access.

Strategy A.3: Boundary signing would be concentrated in areas where unauthorized motorized access occurs, including closed ways and along major boundary roads. When violations are reduced, signs may be removed to decrease visual impacts.

Strategy B: Signs would be placed at the entrance to each wilderness access route identifying the route as open to motorized vehicles.

Strategy C: Boundary signs would typically be narrow brown fiberglass posts. In areas where fiberglass posts are repeatedly removed or damaged, steel posts of similar size and appearance set in concrete would be used.

Rationale: The use of fiberglass posts has been found to be the least visually obtrusive and the most cost-effect means of displaying wilderness boundary signs. However, at locations where fiberglass signs are repeatedly removed or destroyed, steel posts are less expensive over the long-term. The more expensive steel posts have a nearly identical appearance, are more durable, and more difficult to vandalize or remove. The Planning Area is defined by open expanses of low shrubs and there are few, if any, locations where it is feasible to construct a barrier which would physically prevent vehicle use within wilderness.

2.7.4 Proposed Action

Same as 2.7.3 No Action Alternative.

2.7.5 Action Alternative

Same as 2.7.3 No Action Alternative.

2.8 Restoration of Native Vegetation Communities

Wilderness Management Policy/ Guidance	Source
Retain all existing aspen clones, to expand the area occupied by existing aspen stands where possible, and to achieve mixed age classes in stands over the life of this plan.	*Objective 2.2.8.D (RMP):*

Consider the maintenance and enhancement of natural ecological processes as the dominant factor in determining the composition and distribution of plant communities in the Wilderness Zone.	*Objective 2.2.8.E (RMP)*
Site-specific prescriptions will be created for restoration and maintenance of individual aspen stands to achieve the objectives.	*VEG-7 (RMP):*

2.8.1 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative the restoration of native vegetation communities would be governed by the NCA RMP decisions listed above on a case by case basis.

2.8.2 Proposed Action

Strategy A: Expand area occupied by remnant aspen clones in the wilderness and non-wilderness portions of the High Rock Canyon Complex by propagation of root segments and replanting in suitable habitat within the canyon.

Approximately 275 acres within the Calico Mountains, High Rock Lake, High Rock Canyon, Little High Rock Canyon and the East Fork High Rock Canyon Wildernesses have been identified as potential aspen and/or cottonwood reestablishment sites (refer to Map 13 for the locations of these sites in each wilderness area). Suitable sites would be planted with propagated root segments from genetic stock in close proximity. Root segments would be harvested and planted with hand tools only**.** Plants would be temporarily protected from wildlife, wild horse and burro, and livestock browsing by either range cages or T post and wire fences. These fences or cages would be removed as soon as the trees were sufficiently established to survive without protection from browsers.

Rationale: Restoration of native tree species in appropriate locations would enhance desired wilderness characteristic of naturalness. Past human practices have eliminated these communities.

2.8.3 Action Alternative

Same as 2.8.2 Proposed Action

Wilderness Management Policy/ Guidance	**Source**
Prescribed fire may be used throughout the planning area to achieve vegetation and other objectives consistent with the intent of the NCA Act and protection of private property.	*FIRE-3 (RMP):*

2.8.4 No Action Alternative (Continue Present Management)

Strategy A: Consistent with the Wilderness Act, vegetation management projects using techniques such as prescribed fire or hand thinning to restore the role of natural fire within the wilderness areas, would be considered on a case-by-case basis without the direction of a comprehensive Wilderness Management Plan.

Rationale: Use of appropriate fuel treatments would maintain or enhance desired resource objectives where current fire regimes are unlikely to meet the objectives of restoring natural vegetation mosaics.

2.8.5 Proposed Action

Strategy A: Consistent with Strategy A, section 2.5.8, conduct prescribed burning to restore native dry meadow communities in portions of the East Fork High Rock Canyon, High Rock Canyon and Little High Rock Canyon Wildernesses with an objective of increasing native grass cover while maintaining sagebrush or greasewood cover within the range of natural variability (zero to 15% canopy cover) with the following constraints:

- Burn sites would have pre-burn minimum native grass densities of 15 plants/100 ft line transect, minimum sagebrush or greasewood cover of 15% and maximum rabbit brush cover of 5%.
- Burns could also be conducted in areas with higher rabbit brush cover to evaluate prescriptions to reduce rabbit brush.
- Maximum individual burn block size would be 50 acres.
- Maximum burn area in any burn season would be 100 acres.
- All burn areas and control lines would be inspected for historical features during preparation of the burn plan. Appropriate mitigation would be detailed in the burn plan, approved by the Field Manager and implemented prior to burning consistent with the guidelines for the High Rock Agricultural District or other applicable cultural resource reports.

Rational: Past grazing, ranching, and fire suppression activities within High Rock Canyon Wilderness have altered the natural composition of plant communities and natural plant succession within the canyon, including portions of the High Rock Canyon and East Fork High Rock Canyon Wildernesses. Without additional management action, natural conditions are not expected to return in the future. Based upon the pattern of prescribed burning since 1992 it is anticipated prescribed burning under this alternative would not affect more than 300 acres within the Planning Area over the next ten years, of which a relatively small portion would be within the wilderness areas.

2.8.6 Action Alternative

Same as 2.8.5 Proposed Action

2.9 Management of Access and Maintenance of Range Developments

Wilderness Management Policy/ Guidance	Source
Existing authorized structural rangeland projects will be maintained where beneficial to resource values. New rangeland projects may be developed when consistent with achieving Land Health Standards and the objectives of the RMP. Projects no longer needed to meet livestock and other resource management objectives will be removed and the sites restored.	*GRAZ-6 (RMP):*

2.9.1 No Action Alternative (Continue Present Management)

Strategy A: In accordance with Manual H-4120-1.36, remove all debris, materials, or other items not associated with existing authorized range developments on a case-by-case basis without the direction of a comprehensive Wilderness Management Plan. (For a detailed list of Range Developments, see Appendix G.)

Strategy B: Determine actions to rehabilitate and stabilize water catchments, earth tanks, reservoirs, and other earth constructed water impoundments which are unauthorized and/or abandoned within the wilderness areas on a case-by-case basis without the direction of a comprehensive Wilderness Management Plan.

Strategy C: Cultural staff would be consulted prior to any activities requiring ground disturbance, construction or the removal of any items, debris, or structures potentially over 50 years old.

2.9.2 Proposed Action

Strategy A: Within seven (7) years of the Decision Record for the plan, all debris, materials, or other items not associated with existing authorized range developments included in a current allotment plan, multiple use decision, cooperative agreement, permit, or other authorization would be removed in accordance with Manual H-4120-1.36.

Strategy B: Water catchments, earth tanks, reservoirs, and other earth constructed water impoundments which are unauthorized and/or abandoned within the wilderness areas would typically be left to naturally recover and revegetate. In those cases where the development continues to impound or divert water, the impoundment would be breached using the least additional

disturbance and the minimum tools necessary to restore the unaltered flow of water while maintaining an acceptable rate of erosion from the breached development. Developments would undergo NEPA evaluation prior to removal.

Rationale: If water developments continue to function, adverse impacts to the natural character of the wilderness areas and the function of riparian areas would continue, potentially for several decades. Following an unusual rain event or storm, additional adverse impacts could occur if impoundment structures suddenly fail causing substantial erosion and siltation of downstream habitats. However, wildlife and/or wild horses and burros may have become dependent on some unauthorized/abandoned water developments due to ongoing drought conditions. Removal/breaching of the developments in that case could negatively impact wilderness.

Strategy C: Same as No Action Alternative.

Strategy D: Within eight (8) years of the Decision Record for the plan, a standard BLM range project marker would be located at all authorized, and only authorized, structural range developments within the wilderness areas (fences and fence lines excluded). Each marker would include the assigned Range Improvement Project Number, the common name of the development, the year constructed and/or authorized if known, and a description of the exact geographic location.

Rationale: Only some developments within the wilderness areas are marked with a BLM project marker. The absence of markers at authorized range developments and their presence at abandoned developments has caused confusion and errors in maintenance and record keeping in the past. The placement of a marker at each authorized project would alleviate such problems in the future.

2.9.3 Action Alternative

Same as 2.9.2 Proposed Action

Wilderness Management Policy/ Guidance	Source
All spring developments will be modified where necessary to maintain, improve or restore the biotic integrity of the spring system in accordance with BLM Technical Reference 1737-17. These spring developments will also be modified to provide water for wildlife at ground level adjacent to the spring source.	*GRAZ-7 (RMP):*

2.9.4 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative the modification of spring developments would follow the NCA RMP recommendation listed above without the direction of a comprehensive Wilderness Management Plan.

2.9.5 Proposed Action

Strategy A: Any trough, catchment, or other water storage development which is reconstructed or replaced would be designed to divert and store only the minimum amount of water necessary to achieve management objectives and/or valid water rights. All additional water would remain in its natural location to meet the riparian purposes of the NCA and the wilderness areas.

Strategy B: Within five (5) years of the Decision Record for the plan, evaluate all spring developments within the wilderness areas to determine if they meet NCA RMP guidance and Strategy 2.9.4 A. Develop and implement site specific actions for those developments that do not provide ground level water adjacent to the spring source. Site specific actions for the modification of developed springs could include but are not limited to:

- Installation of float valves
- Installation of diversion valves
- Moving troughs out of meadow areas
- Removing troughs from abandoned spring developments.

Final determination of site specific actions for the modifications would be made under further NEPA evaluation.

2.9.6 Action Alternative

Same as 2.9.5 Proposed Action

Wilderness Management Policy/ Guidance	Source
Identify in affected allotment plans those rangeland development structures and installations to be maintained, constructed, or reconstructed in achieving rangeland management objectives, including maintenance standards.	*BLM Policy Manual 8560.36.A.3.c(4)(b)):*

2.9.7 No Action Alternative (Continue Present Management)

Strategy A: Rangeland development structures and installations to be maintained, constructed, or reconstructed in achieving rangeland management objectives would be identified through the allotment planning process without the direction of a comprehensive Wilderness Management Plan.

2.9.8 Proposed Action

Strategy A: Replacement troughs, pipe, and headboxes would be designed and constructed to function ten (10) years or more under normal conditions of use with routine maintenance and to blend with the surrounding environment to the extent practicable.

Strategy B: The placement of the smallest temporary exclosure necessary may be constructed around any water source which associated with an authorized range development, so long as it does not exceed 128 feet of total exclosure or the exiting footprint of the development, whichever is greater. Materials and design would be consistent with Technical Note 397 (Brigham and Stevenson 2003) *(Citation: Wildlife Water Catchment Construction in Nevada. U.S. Department of the Interior Bureau of Land Management Technical Note 397)* and would visually blend with the surrounding area. Each exclosure would be designed to allow wildlife and people ease of access. No ground disturbance would be allowed for construction. The construction of larger exclosures or exclosures around water sources not associated with an approved range development would require a separate NEPA evaluation and MRDG.

Rationale: The condition of riparian areas was identified as a planning issue. While water sources and riparian areas associated with authorized range developments are required to meet rangeland health standards, overpopulation of wild horses within portions of the Planning Area is expected for the life of this plan. Soil compaction, trampling, and grazing from horses, cattle, and wildlife is concentrated near range developments and has reduced vegetative cover, reduced water quality, and has likely reduced water quantity at a number of spring sources. Prior to construction of exclosures, other methods for mitigating riparian damage such as changes to seasonal use, levels of livestock use, or presence of herders would be considered for probable efficacy in each individual situation. Protecting these water sources until other grazing management objectives are met would allow riparian habitats to recover within the exclosures, would provide cleaner source of water for recreational users, and may increase the amount of water available by preventing compaction at the spring source.

2.9.9 Action Alternative

Same as 2.9.8 Proposed Action

Wilderness Management Policy/ Guidance	Source
Identify in affected allotment plans the use of motor vehicles, motorized equipment or other forms of mechanical equipment including: specific equipment, where it is to be used, when it is to be use, and what it is to be use for.	*BLM Policy Manual 8560.36.A.3.c(4)(*

	a):

2.9.10 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative the use of motorized equipment would be guided by recommendations found in the NCA RMP, the Congressional Grazing Guidelines (House Report 105-405 Appendix L, 1990), and BLM Manual 8560 (Management of Designated Wilderness Ares). Decisions concerning motorized or mechanical equipment would be made on a case-by-case basis without the direction of a comprehensive Wilderness Management Plan.

2.9.11 Proposed Action

Strategy A: Management direction for the use of motorized and/or mechanized equipment or vehicles for the maintenance and reconstruction of range developments would apply only to those developments identified in this plan and which are included in a current decision or document (i.e. final multiple use decision, allotment management plan, grazing decision, permit, lease or cooperative agreement). The use of motorized and/or mechanized equipment for the maintenance or reconstruction of range developments not covered under this plan would undergo a separate NEPA evaluation.

Rationale: While Bureau Policy directs that decisions regarding the use of motor vehicles, motorized equipment or other forms of mechanical equipment associated with range developments be made in affected Allotment Plans, it has been determined these decisions should be made through the Wilderness Plan to ensure management consistency across both the Surprise Field Office and the Black Rock Field Office and equity for all affected permittees.

Strategy B: Except in the case of emergency (refer to 2.9.14), permittees must obtain written authorization from the District/Field manager prior to using any motorized and/or mechanized equipment or vehicles within the wilderness areas.

Requests and authorizations for additional use of motorized and/or mechanized equipment or vehicles not specifically included in this plan would require, at a minimum, completion of an MRDG, a Notice of Proposed Action and a NEPA evaluation.

Rationale: The Bureau is prohibited by the Wilderness Act and Bureau policy listed for this guidance from issuing an open-ended authorization which allows permittees to use motorized and/or mechanized equipment or vehicles at their discretion.

Strategy C: All authorizations for the use of motorized or mechanized vehicles would specify the type and number of vehicles passes and the route(s) to be used. The number of vehicle passes authorized would be based

upon the minimum number necessary to safely accomplish maintenance objectives. The selection of vehicles to be used would be based upon readily available and reasonably cost-effective equipment which minimizes soil disturbance, soil compaction, and damage to riparian areas. It is anticipated most repair or replacement of range developments which require the use of vehicles would be accomplished with a single trip using one vehicle and possibly one trailer.

For scheduled repair or reconstruction, the use of motorized equipment would be authorized typically during periods which pose the least potential for disturbance to riparian areas, soils, vegetation, wildlife, wild horses and burros, and the visiting public.

Strategy C.1: *Developed Springs*

The use of motor vehicles, motorized equipment or other forms of mechanical equipment would be allowed for replacement of troughs and headboxes for those developments where the use of such equipment is demonstrated to have occurred prior to wilderness designation and other means are not practical.

As part of this plan, the use of motor vehicles, motorized equipment or other forms of mechanical equipment for routine replacement of stock troughs may be authorized not more than once every ten (10) years. The Field Manager may allow additional use of motorized or mechanized equipment on a case-by-case basis where the Bureau determines the need for replacement is due to extraordinary circumstances beyond the permittees' control (i.e. flash flood, wildfire, vandalism, landslide, etc.). Requests or authorizations for more frequent routine use of motor vehicles, motorized equipment or other forms of mechanical equipment would be addressed on a case-by-case basis consistent with 2.9.11 Strategies A and B.

Rationale: Troughs and headboxes designed to last at least ten (10) years are typically constructed of heavy steel or thick rubber and can weigh 300-1500 pounds or more. Moving such items without use of mechanized or motorized equipment is neither safe nor practical in the rough terrain of the wilderness areas. Items designed to last longer than ten (10) years are commercially available, but prohibitively expensive and require specialized equipment for transportation and installation.

Strategy C.2: *Pipelines*

As part of this plan, the use of motor vehicles, motorized equipment or other forms of mechanical equipment may be authorized for the routine replacement of below-ground pipeline segments greater than 40 feet in length not more than once every ten (10) years. Requests or authorizations for more frequent routine use of motor vehicles, motorized equipment or

other forms of mechanical equipment would be addressed on a case-by-case basis consistent with 2.9.11 Strategies A and B.

Replacement pipeline must meet BLM trenched or ripped trench pipeline construction standards for depth below grade, construction material, venting, and grade to minimize the risk of future failure and need for repair or replacement.

Where an existing below-ground pipeline is to be replaced by an above-ground pipeline, a one-time use of a vehicle and trailer would be allowed for installation.

Rationale: The replacement or repair of a pipeline segment less than 40 feet in length requires minimal replacement materials and can be accomplished using hand tools in a reasonable amount of time. The amount of time necessary to remove longer pipelines using hand tools is cost prohibitive. As existing pipelines are replaced and/or upgraded to BLM standards, the need for motor vehicles, motorized equipment or other forms of mechanical equipment for future repair, replacement, and excavation within the wilderness areas is not expected to occur more than once every ten (10) years.

Strategy C.3: *Fences*

For any single segment of pre-existing fenceline at least one-quarter mile from any designated motorized route and at least one-half mile in length; the use of motor vehicles, motorized equipment or other forms of mechanical equipment would be allowed for replacement or reconstruction to repair damage otherwise unpreventable through routine inspection and maintenance (i.e. destruction by wildlife, extreme snow loading, or extensive damage from wild horses or other animals). It is anticipated damage which would require the use of motorized and/or mechanized equipment for replacement of fence segments in excess of one-half mile would be uncommon, and would not occur more than once every 15 years. Alternative fence locations, materials, construction techniques, and the use of additional gates would be evaluated prior to authorizing more frequent use of motorized and/or mechanized equipment. Alternative fence locations would require a separate NEPA evaluation.

Rationale: Replacement of a segment of fence one-half mile or longer requires more than 1,200 pounds of fence supplies and tools- with a single roll of fence wire weighing approximately 75 pounds. While it is possible to carry 75 pounds by horseback or on foot, the amount of time needed to haul the necessary materials and tools and to repair a section of fence one-half mile in length or longer is cost-prohibitive and would likely affect the permittee's ability to use the affected allotment during at least part of the season.

Strategy C.4: *Catchments, pits, dirt tanks, and reservoirs*

The use of motor vehicles, motorized equipment or other forms of mechanical equipment would be allowed for major repairs necessary to maintain functional condition. Major repairs include: restoring dam faces or riprap, reconstructing spillways, replacement of control structures, and sediment removal greater than three (3) cubic yards.

Where motor vehicles, motorized equipment or other forms of mechanical equipment are used, water control structures would be repaired or reconstructed to meet current engineering and safety standards as determined by BLM.

Strategy C.5: *Windmills*

Routine Maintenance

Allow the use of portable gas-powered equipment as needed to pull sucker rods for routine replacement of leathers. It is anticipated such activities would occur once every one to two (1-2) years.

Moderate to Major Maintenance and Parts Replacement

As part of this plan, the use of motorized vehicles may be authorized not more than once every five (5) years for those windmills at least one-quarter mile from any designated motorized route. Moderate to major maintenance and parts replacement includes the transport of replacement parts, tools and equipment to conduct repairs such as replacement of sucker rods, cylinders, complete windmill, or rebuilding windmill tower sections. The Field Manager may allow additional use of motorized or mechanized equipment on a case-by-case basis where the Bureau determines the need for replacement is due to extraordinary circumstances beyond the permittees control (i.e. flash flood, wildfire, vandalism, landslide, etc.). Requests or authorizations for more frequent use of motor vehicles, motorized equipment or other forms of mechanical equipment would be addressed on a case-by-case basis consistent with 2.9.10 Strategy B.

Major Repair or Replacement

For major repairs or replacement of entire windmills, including replacement of windmill motor or tower reconstruction, the minimum number of vehicle passes necessary along previously established routes would be authorized on a case-by-case basis. It is anticipated such authorizations would occur not more than once every ten years for maintenance of a single windmill.

Strategy C.6: *Wells*

The one-time use of a vehicle and trailer along a pre-existing route would be authorized for the removal of non-functional windmills and replacement with solar-powered electric pumps at Black Rock Desert and Hay-Quinn Rural wells.

In case of well failure, such as collapsed well casing, a separate MRDG, NOPA, and authorization would be issued.

Strategy D: Except in cases where the potential for resource damage is determined to be unacceptable and an alternate route is identified, vehicle use would occur on previously established routes identified by the Bureau and which existed prior to wilderness designation.

Rationale: The majority of range developments identified have established routes for access within the wilderness areas. Based upon the amount of use anticipated, there is no need to identify alternative routes at this time.

Strategy E: The transporting of other materials or items in support of range management may be allowed in conjunction with the authorized use of motor vehicles, motorized equipment or other forms of mechanical equipment for repair or replacement of range developments, provided the addition of such items does not require use of motorized and/or mechanized equipment beyond that which would otherwise be necessary.

Strategy F: The use of motor vehicles, motorized equipment or other forms of mechanical equipment for the maintenance or construction of range developments within the wilderness areas not authorized prior to wilderness designation or specifically identified in this plan would only be considered as part of an application for a new range development.

Rationale: The management direction in this plan would be included in all allotment plans which include lands within wilderness and satisfies the requirements of Bureau policy in Manual section 8560.36.A.3.c(4)(a)). While Bureau Policy directs that decisions regarding the use of motor vehicles, motorized equipment or other forms of mechanical equipment associated with range developments be made in affected allotment plans, it has been determined these decisions should be made through the Wilderness Plan to ensure consistency across both the Surprise Field Office and the Black Rock Field Office and equity for all affected permittees.

2.9.12 Action Alternative

Same as Section 2.9.11 Proposed Action, except for those strategies modified or added as described in this section.

Strategy C.3: *Fences*

All inspection, maintenance, and reconstruction of fences would be accomplished by foot, horse back or other non-motorized means.

Strategy C.4: ***Catchments, pits, dirt tanks, and reservoirs***
Inspection and maintenance (including removal of weeds and vegetation, removal of sediment, and repair of headgates) would be accomplished by foot, on horseback, or other non-motorized means.

The use of motor vehicles, motorized equipment or other forms of mechanical equipment would be allowed for reconstruction following failure.

Wilderness Management Policy/ Guidance	Source
Identify in affected allotment plans the means to handle emergencies.	*BLM Policy Manual 8560.36.A.3.c(4)(c):*

2.9.13 No Action Alternative (Continue Present Management)

Strategy A: Under the No Action Alternative the means to handle emergencies would be guided by recommendations found in the NCA RMP, the Congressional Grazing Guidelines (House Report 105-405 Appendix L, 1990), and BLM Manual 8560 (Management of Designated Wilderness Ares). Decisions concerning motorized livestock emergencies would be made on a case-by-case basis without the direction of a comprehensive Wilderness Management Plan.

2.9.14 Proposed Action

Strategy A: For the purposes of allowing motorized and/or mechanized equipment for grazing management, an emergency includes any unpreventable or reasonably unforeseeable set of circumstances which, without immediate action, would likely result in the death of livestock or result in long-term and/or irreversible impact to the wilderness resource.

Strategy B: At a minimum, grazing permittees must obtain verbal authorization from the District/Field Office Manger or their designee for each instance in which motorized and/or mechanized vehicles or equipment are to be used. Verbal authorization must be followed up with a written authorization for the wilderness file. In the event the District/Field Office Manager or their designee is not available, the permittee must notify the District/Field Office Manager as soon as practicable but not later than 48 hours following the use of the motorized and/or mechanized equipment.

2.9.15 Action Alternative

Same as 2.9.14 Proposed Action

2.10 Management of Valid Existing Rights

Wilderness Management Policy/ Guidance	Source
Provide access to inholdings consistent with the Wilderness Act. Private Property Rights. Section 5 of the Wilderness Act requires landowners be given such rights as may be necessary to assure adequate access to such privately owned lands. Adequate access is defined as the combination of routes and modes of travel which would, as determined by the BLM, cause the least lasting impact on the wilderness resource, and at the same time serve the reasonable purposes for which the private land is held.	*1964 Wilderness Act, BLM Manual 8560.15(J)(1):*
Valid existing rights for mining claims in the wilderness at the time of designation will be determined consistent with existing regulations. Claims found to be valid would be managed under applicable mining laws and regulations.	*1964 Wilderness Act, NCA Act (subpart 6(a), RMP (Mineral Resources), 43 CFR 3800*

See Section 2.9 for discussion of maintenance of structures such as pipelines and ditches associated with valid water rights.

2.10.1 No Action Alternative (Continue Present Management)

Strategy A: Access to private inholdings within the wilderness areas would be determined on a case-by-case basis without the direction of a comprehensive Wilderness Management Plan.

2.10.2 Proposed Action

Strategy A: Upon request, authorize limited use of OHVs along an existing trail to access private lands in Mary Sloan Basin within the North Jackson Mountains Wilderness.

Rationale: In 2003, NCA staff conducted an inventory of access to each private inholding within the wilderness areas. As described in the Private Inholding Table 3-2 of the Affected Environment Section, motorized access occurring at the time of wilderness designation was documented for one parcel located within the North Jackson Mountains Wilderness (parcel 1068001). The existing route to this parcel has been recorded and inventoried by BLM. No mechanized or motorized access to the parcel has been requested since the wilderness area was designated in 2000. In accordance with BLM policy, an attempt would be made to acquire or exchange this parcel for non-wilderness lands prior to authorizing such modes of travel along the existing access route. The mode of travel would be limited to OHVs along the existing route and for the purposes of managing livestock grazing within the parcel.

Such access would be authorized through issuance of a renewable land use permit.

Strategy B: No additional routes would be authorized to provide access to private inholdings within the wilderness areas, and no mechanized or motorized modes of travel would be authorized for such access.

2.10.3 Action Alternative

Same as 2.10.2 Proposed Action

2.11 Wild Horse and Burro

2.11.1 No Action Alternative (Continue Present Management)

Strategy A: A process would be initiated to develop or review a HMAP for at least one HMA per year until each of the nine HMAs which include wilderness have been completed or updated. The HMAPs would detail the present condition and potential of herds and HMAs and would describe management actions required to meet wilderness objectives as well as herd needs. In addition, each HMAP would specify the use of motorized and mechanical equipment including aircraft and temporary structures. The HMAP would also specify the location, frequency and timing of such uses. Upon approval, those portions of each HMAP relevant to the wilderness areas would become an amendment to this plan.

2.11.2 Proposed Action

Same as 2.11.1 No Action

2.11.3 Action Alternative

Same as 2.11.1 No Action

2.12 Monitoring

Monitoring tracks the outcome of proposed activities on the qualities of wilderness character previously defined. 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 untrammeled condition of the wilderness in the short term. These separate outcomes, the improvement of "naturalness" and decreased "untrammeled nature", would 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 a sensitive resource 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 would improve understanding of the effects upon wilderness character in combination and over time.

Effects of intentional, unintentional and unauthorized activities would be captured under the monitoring system. The monitoring program would provide a greater understanding of the overall and specific condition of each wilderness area. Information generated in monitoring wilderness conditions would 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 would also provide Wilderness Managers with more complete information which would improve the evaluation of future proposed activities. However, monitoring would not be used to compare conditions and changes within these wilderness areas with other wilderness areas in the National Wilderness Preservation System.

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.
  - Reclamation 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.
  - Archaeological 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 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 areas would be maintained in each area's permanent file. A description of the regulation and its purpose would be documented.

- Visitor use encounters on 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 email.
- Automated visitor counters located at trailheads or access points.
- Wilderness rangers or volunteer stewards would visit access points at least once every two months or as funding allows to record the number of vehicles and collect written comments or other trail data.

- On-site interviews with visitors would be conducted to determine a variety of visitor perceptions including:
  - The number of other groups visitors encounter within the areas.
  - The number of other groups visitors encounter while traveling along routes adjacent to the areas.
  - How visitors perceive encounters with other groups during their visit in terms of solitude and crowding.
  - The average number of days visitors recreate in the area per trip.

- The wilderness areas would be monitored for unauthorized use at boundary roads and access points at least once every three months or as funding allows by wilderness staff and law enforcement rangers or volunteer stewards.

- Monitoring of campsite condition is critical in describing the evidence of other users and the impacts of this use within each opportunity class. The campsite monitoring protocol would follow Campsite Conditions Class, Appendix D.

- Popular hunting areas in the wilderness areas would be monitored regularly for motorized violations, foot-worn hiking trails and proliferation of campsites during hunting seasons.

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 wilderness area's permanent wilderness file. A description, location, purpose, and expected outcome of the feature would be documented.

- Within five (5) years of the Decision Record for the plan or as funding allows, determine if any permanent structures which have not been previously evaluated, have historical significance which warrants retention as a feature of the wilderness area or are eligible for the National Register of Historic Places.

- All former vehicle routes and other rehabilitated disturbances would be assessed for motorized use at least twice a year or as funding allows. Photo points would be established and photos would be taken as part of the monitoring.

- Popular hunting areas within wilderness would be monitored at the end of hunting season and structures associated with hunting, such as illegal and unauthorized blinds, would be removed. After 14 days blinds would be considered unattended property and subject to removal by the BLM (43 CFR 8365.1-2(b)).

Naturalness and Primeval Character

- A log of all known human alterations to the ecosystem would be maintained in each area's permanent wilderness file. A description and location would 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 would be maintained in each area's permanent wilderness file. A description and location would be documented or referenced. Activities that may be tracked include:
  - Fire
  - Flood
  - Insect or disease outbreaks.

- Monitoring for noxious and invasive weeds would occur at least once a year or as funding allows, with priority given to springs, trails, and washes which receive regular visitor use.

- Wildlife population monitoring would be accomplished primarily by NDOW, according to the agency's established protocol. The BLM wilderness rangers would also record wildlife sightings, in particular for nested raptors and special status species. Monitoring or research by other entities may occur according to the protocol described in the plan.

- Findings, or a reference to the findings, from inventory, monitoring and research projects would be included in each area's permanent 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 would occur if feasible monitoring methods are developed.

- Monitoring would be included to account for changes to the natural fire cycle occurring from introduced natural grasses. The additional monitoring would aid fire management in determining Appropriate Management Response (AMR) on an annual basis. For fires having greater potential to convert native vegetation to unnatural annual grass-dominated vegetation, fire management would 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 by BLM staff and through the cultural site steward program would be done as schedules allow at known sites and for areas of high visitor use.

- Within five (5) years of the Decision Record for the plan or as funding allows, evaluate and categorize all previously recorded cultural resource sites within the

wilderness areas to determine site-specific management actions. In the future, as new sites are recorded a use category for each would be assigned.

- Within three (3) years of the Decision Record for the plan, initiate routine visits to the western portion of the Black Rock Desert Wilderness to locate and record paleontological resources. Efforts would initially focus on those areas accessible from the Pahute-Black Rock road. All sites would be placed into one of the categories listed in the NCA RMP Appendix F.

- Conduct annual site visits to the northern portions of the High Rock Canyon and East Fork High Rock Canyon Wildernesses to locate, inventory and document paleontological resources. Diagnostic samples would routinely be collected using hand tools which would result in minimal surface disturbance. All excavations would be restored to their previous natural appearance.

- Within three (3) years of the Decision Record for the plan, implement a systematic weed inventory program across the planning area. This program would include:
  - Training of staff and volunteers in weed species identification
  - Coordination with local weed management districts
  - Exploration of remote sensing techniques to enhance field inventories.

- Within two (2) years of the Decision Record for the plan, complete a stratified sampling of spring sources and meadows to determine condition, functionality, risks and priorities for restoration.

- Within two (2) years of the Decision Record for the plan, complete an inventory of all springs and associated meadows in the High Rock Canyon, East Fork High Rock Canyon, High Rock Lake and Little High Rock Canyon Wildernesses to support the National Riparian Service Team project and the evaluation of wildlife waters as previously agreed to with the Nevada Department of Wildlife.

2.13 Environmental Protection Measures

The proposed action and alternatives were developed by the BLM staff based on all available information. Mitigation measures are incorporated into the design of the actions described in each of the alternatives. A monitoring program described in Section 2.12 would be incorporated into all of the alternatives to further mitigate the potential for adverse impact to the wilderness resource. Monitoring methods are described in the Wilderness Management Plan.

To maintain compliance with the Endangered Species Act, the BLM is conducting Section 7 consultation with the US Fish and Wildlife Service for the proposed action to establish measures to minimize impacts to listed species and establish incidental take limits for actions that may harm or harass the species. Minimization measures may include pre-construction surveys and, construction monitoring, and payment of remuneration fees into the Section 7 mitigation bank. Implementation of this plan would

include following all terms and conditions of the Biological Opinion received from the Fish and Wildlife Service.

All activities would comply with the National Historic Preservation Act, Native American consultation procedures, and all other applicable laws, policies, and regulations.

3 Affected Environment

3.1 Overview

The ten wilderness areas were added to the National Wilderness Preservation System by the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area Act of 2000 as amended (Public Law 106-554 Dec. 21, 2000; amended Nov. 6, 2001). The table below summarized the ten wildernesses.

Table 3-1 Wilderness Acreage

Name	Public Acres
Black Rock Desert	314,835
Calico Mountains	64,968
East Fork High Rock Canyon	52,618
High Rock Canyon	46,465
High Rock Lake	59,107
Little High Rock Canyon	48,355*
North Black Rock Range	30,648
North Jackson Mountains	23,439
Pahute Peak	56,890
South Jackson Mountains	54,536
*Additional 40 acres acquired in 2010	

3.2 Location and Access

The wilderness areas are managed by the Bureau of Land Management, Black Rock Field Office (Nevada) with the support of the Surprise Field Office (California).

The wilderness areas are located near each other and approximately 120 miles northeast of Reno and 80 miles northwest of Winnemucca in Humboldt, Pershing and Washoe counties, Nevada. Elevations range from about 4,000 to over 8,500 feet. Summer temperatures at lower elevations commonly exceed 100 degrees, and in winter temperatures regularly dip well below freezing.

Access to the wilderness areas is generally provided by a number of semi-primitive and primitive roads which are also the basis for the wilderness boundaries. Segments of six routes which provide access to portions of the South Jackson Mountains, East Fork High Rock Canyon, Little High Rock Canyon, North Black Rock Range, and Pahute Peak Wildernesses are located on private property and have no legal public easement or right-of-way. The fencing of two parcels of private property in recent years has resulted in more limited public access to the wilderness areas, and the fencing and/ or gating of other parcels is expected in the future. The plan provides management direction for continued public access in the event public access along six identified routes cannot be provided through easements from willing landowners.

3.3 Ownership and Land Use

The majority of lands within the planning area are administered by the BLM. With the exception of patented mining claims in the North Jackson Mountains, all private lands within the planning area are used for livestock grazing, and none are currently inhabited year-round. Several ranches and a few active mining operations are located nearby, but are outside the planning area. Nine parcels of private property are located within, and completely surrounded by the North Jackson Mountains (three parcels), North Black Rock Range (four parcels), Pahute Peak (one parcel), and Black Rock Desert (one parcel) Wildernesses (refer to Table 3-2 Private Inholdings)

Table 3-2 Private Inholdings

Patent Number/ Serial File Number	Size (in acres)	Legal Location	Land Use/ Purpose	Mode of access at wilderness designation	Wilderness Area
SS10	80	T.40N., R26E., sec. 4	Livestock grazing	Mode of access not yet determined	North Black Rock Range
SS15	80	T.40N., R26E., sec. 9	Livestock grazing	Mode of access not yet determined	North Black Rock Range
822656	40	T.41N., R.26E., sec. 24	Livestock grazing	Non-motorized. Existing trail	North Black Rock Range
846815	40	T.41N., R.26E., sec. 13	Livestock grazing	Non-motorized/ non-mechanized. No existing trail	North Black Rock Range
870382	80	T.39N., R.26E., sec. 27-28	Livestock grazing	Non-motorized/ non-mechanized. No existing trail	Pahute Peak
4	34.92	T.39N., R.30E., sec. 6	Livestock grazing	Non-motorized/ non-mechanized. No existing trail	Black Rock Desert
NVCC-0000077	1.350	T.40N., R.31E., sec. 27, NW1/4, NW1/4	Mining (Patented Load Claim)	Mode of access not yet determined	North Jackson Mountains
NVCC 0000077-01	5	T.40N., R.31E., sec. 27	Mining (Patented Millsite)	Mode of access not yet determined	North Jackson Mountains
1068001	480	T.40N., R.31E., sec.11-14	Livestock grazing	OHV Existing trail	North Jackson Mountains

Water Rights

A number of valid existing rights exist within the wilderness areas. The majority of these rights are associated with water rights, private property within the wilderness areas (inholdings), and rights-of-way.

Since 1909 a variety of water rights have been granted by the State of Nevada to various individuals for purposes of irrigation of lands outside wilderness or stock watering within what are now the wilderness areas. The majority of these water rights are for either the use of water at a spring source for livestock watering or for the irrigation of agricultural

lands outside the wilderness areas (Appendix H: Valid Existing Private Water Rights indicates the type of use and general location of current water rights within the wilderness areas). Most water rights for irrigation have associated ditches and small canals and were granted prior to the passage of FLPMA in 1976. These pre-1976 ditches and canals were granted a right-of-way across public lands under the 1866 mining law and authorized the holder to construct and maintain them as necessary, so long as their purpose and general location does not change, subject to reasonable regulation by the BLM. These existing rights for irrigation are retained regardless of use or maintenance. Water rights for livestock waters are typically abandoned after five or more years of non-use. Appendix H: Valid Existing Water Rights lists known private water rights, their associated uses, structures, and condition in 2010.

Individuals and other agencies continue to file for water rights located within the wilderness areas. However, the granting of new water rights by the State of Nevada after 1976 does not convey any right to access or rights-of-way for ditches, canals, reservoirs, flumes, or pipelines. The NCA Act and the Wilderness Act prohibits BLM from issuing any rights-of-way grants after December 21, 2000 for structures, systems, or facilities which impound, store, transport, or distribute water.

3.4 Topography and Climate

The wildernesses lie primarily on a series of uplifted fault block mountain ranges formed primarily of tertiary volcanics with steep slopes and narrow canyons. The two eastern wilderness areas are associated with older volcanics mixed with limestones and other marine sediments. Lower slopes are gently sloping lake sediment deposited when Lake Lahontan occupied all the valley bottoms. One wilderness lies entirely within this valley bottom area.

3.5 Mineral Resources

Areas of historic mining are known from several areas within wilderness areas on the Jackson Mountains, Calico and Black Rock Ranges. Only two unpatented mining claims which existed at the time of wilderness designation are still active. These claims are in the southern portion of the Little High Rock Canyon Wilderness (refer to Table 3-3 Active Mining Claims). Validity determinations have not been made on either claim.

Table 3-3 Active Mining Claims

Mineral Claim Number	Legal Location	Land Use/ Purpose	Validity Determination Status	Wilderness Area
NMC822434	T.38N., R.23E., Sec. 22, NW1/4	Lode Claim	Not initiated	Little High Rock Canyon
NMC822436	T.38N., R.23E., Sec. 22, NW1/4	Lode Claim	Not initiated	Little High Rock Canyon

There are no mineral leases in any of the wilderness areas, and the entire planning area was withdrawn from mineral entry on December 21, 2000 by the NCA Act.

3.6 Supplemental Authorities

A variety of laws, regulations, and policy directives mandate that the effects of a proposed action and alternative(s) on certain supplemental authorities be considered. Not all of the required supplemental authorities will be present, or if they are present, may not be affected by the proposed action and alternative (Table 3-4). Only those supplemental authorities that are present and affected are described in this section.

In addition to the supplemental authorities, there are additional resources that require impact analysis relative to the proposed action and alternative. These are presented in Section 3.7 Additional Affected Resources**.**

To comply with the National Environmental Policy Act, the following elements of the human environment are subject to requirements specified in statute, regulations or executive order and must be considered (Table 3-4). Some resources could be affected by the proposed action and alternative.

Table 3-4 Supplemental Authorities of the Human Environment and Other Resources

Supplemental Authorities	Not Present	Present Not Affected	Present Affected	Comments
Air Quality			✓	
Areas of Critical Environmental Concern (ACECs)			✓	
Cultural Resources			✓	
Environmental Justice	✓			Not applicable
Floodplains		✓		No actions within the WMP would affect floodplains
Threatened and Endangered Species (plants and animals)			✓	
Invasive Non-native Species			✓	
Migratory Birds			✓	See wildlife.
Native American Religious Concerns			✓	

Prime or Unique Farmlands	✓			Not applicable
Hazardous or Solid Wastes	✓			Not applicable
Water Quality (surface and ground)			✓	Groundwater is not anticipated to be encountered during implementation of the Plan.
Wetlands and Riparian Zones			✓	
Wild and Scenic Rivers	✓			Not applicable
Wilderness			✓	

Other Resources	Not Present	Present Not Affected	Present Affected	Section Reference/Comments
Fire Management			✓	
Paleontology			✓	
Rangeland Resources and Uses		✓		Rangeland developments are covered under Socio-Economic Values
Recreation			✓	
Social and Economic Values			✓	
Soils			✓	
Special Status Species		✓		Although present, no special status species are anticipated to be affected.
Vegetation			✓	
Visual Resources		✓		No actions are being proposed that would affect visual resources.
Wild Horses and Burros			✓	
Wildlife and Wildlife Management			✓	

The following critical elements have been identified in Table 3-4 as being present and affected by the Proposed Action or other alternatives:

3.6.1 Air Quality

Air quality within the wilderness areas is considered good due to their remote locations, away from urban areas. There are no monitoring stations nearby to collect monitoring data for pollutants, however most undeveloped regions in Nevada have ambient pollutant levels below the measurable limits. There has been no climate change data collected within the project area to determine climate trends. In general, dry, hot weather has led to drought conditions which have persisted in areas of the west. Dust storms and wild fires temporarily reduce air quality with increased particulate matter within the region.

3.6.2 Areas of Critical Environmental Concern

A portion of the High Rock Canyon ACEC is located within High Rock Canyon and East Fork High Rock Canyon Wildernesses. High Rock Canyon contains exceptional scenic values, important wildlife habitat including bighorn sheep habitat and high-density raptor nesting, National Register-quality archeological sites and districts, and 18 miles of the Applegate Trail with extent emigrant graffiti. Nearly all of the trail and associated cultural resources are located outside of wilderness boundaries.

3.6.3 Cultural Resources

Cultural resources are defined as any physical evidence of former human presence that is older than 50 years. Cultural resources include prehistoric- and historic-period sites, features, and artifacts which may range in complexity from a single stone tool or bottle fragment to a large prehistoric village or historic-period town site. Cultural sites are the locations of past human activity, occupation, or use, identifiable through inventory, historical documentation, or oral history.

Section 106 of the National Historic Preservation Act of 1966 requires Federal agencies to take into account the effects of their undertakings on "historic properties;" those cultural resources listed in or eligible for listing in the National Register of Historic Places (NRHP). There are over 200 known archaeological sites in the ten wilderness areas and approximately 70 archaeological inventories have been completed, but only a small percentage of the area has been examined for the presence of cultural resources. The general prehistory and history of the area is briefly described below.

The following information is summarized from several sources including Smith et al. (1983), McGuckian Jones (1980), Layton (1970) and Lohse (1981) as well as the High Rock Cultural Resource Management Plan and the Cowhead-Massacre RMP/Final Environmental Impact Statement. These documents should be consulted for more comprehensive information.

<u>Prehistory</u>

Numerous prehistoric archaeological sites with widely varying degrees of complexity, size, location, and densities have been identified within the planning area. These include rock shelters, occupation sites (with probable buried deposits), temporary camps, petroglyphs and pictographs, hunting blinds, quarries, and lithic scatters to name a few.

Evidence indicates that human occupation of the planning area dates back as far as 12,000 years ago. This period of human history is divided into a series of "phases" which include times of apparent human abandonment. A more detailed description chronology of the prehistory and history of the area can be found in the NCA RMP.

Ethnography

The ten wilderness areas are within the territory traditionally used by several bands of the Northern Paiute or Paviotso. The Northern Paiute were hunting-gathering bands that generally traveled seasonal rounds in small family groups subsisting on a variety of plant foods, small game, and fish. A more complete summary of the plants and animals used by the Northern Paiute that occur in and near the wilderness areas, as well as other ethnographic information, is provided in Lohse (1981).

The closest reservation to the planning area is the Summit Lake Paiute Reservation, located at Summit Lake, adjoining the northern boundary of the area. The reservation was established in 1913 and consists of approximately 11,000 acres. Pyramid Lake Reservation, established in 1874, is approximately 20 miles south of the planning area. Other rancherias, reservations, and colonies near the planning area include the Cedarville Rancheria, Ft. Bidwell, the Lovelock and Winnemucca Colonies, and Fort McDermitt Reservation.

History

Historic events within the planning area helped to mold and change the course of American history on a national scale. Captain John C. Fremont and Kit Carson, on their 1843–44 exploring expedition, traveled south through the planning area passing through High Rock Canyon, Fly Canyon, Soldier Meadow, and the Black Rock Desert. Possibly using information from Captain Fremont, a group of 15 men from Oregon, including Jesse Applegate, Lindsay Applegate, and Levi Scott, opened the Applegate Trail in 1846 as a southern road into Oregon. Peter Lassen followed the Applegate Trail across the Black Rock Desert and through High Rock Canyon to Goose Lake in 1848, then turned south and west to his ranch in present-day Vina, California. This resulted in the subsequent identification of the Applegate Trail through the planning area as the "Applegate-Lassen Trail." The following year, the route was erroneously thought to be a shortcut to the gold fields of California and perhaps as many as a third or half of the gold seekers (7,000 to 10,000 people) followed the route. After that heavy use in 1849, the trail again reverted to a route for migration to Oregon, although it also carried gold seekers to gold fields in Yreka, California.

No physical traces of the Fremont expedition remain, but the route is well documented. Most of the Applegate-Lassen Trail in the planning area is currently used by four-wheel drive vehicles and has assumed the character of "two-track" routes. In some places, the

trail segments have been graded. A small portion of the trail is located in the High Rock Lake Wilderness.

Some unaltered trail remnants are still visible as are emigrant inscriptions in Fly Canyon (within the High Rock Lake Wilderness) and High Rock Canyon (which is bound on both sides by the High Rock Canyon and East Fork High Rock Canyon Wildernesses).

Emigrant campsites and other historic sites along the Applegate-Lassen Trail within the planning area include Post Office Cave and the Fly Canyon Wagon Slide where the emigrants descended a steep precipice. Various rock formations and other natural features described in emigrant diaries are also important features of this trail.

In 1992, Congress designated the California Trail as a national historic trail. One emigrant trail in the planning area (Applegate-Lassen Trail) is part of the California Trail and is included in this congressional designation. The National Park Service has prepared a Comprehensive Management and Use Plan/Final Environmental Impact Statement for the Oregon, California, Mormon Pioneer, and Pony Express National Historic Trails (USDI/NPS 1999). This plan includes management recommendations for the Applegate-Lassen Trail. The portion of the Applegate-Lassen Trail that passes through the NCA is the longest existing segment of emigrant trail where the public can travel surrounded by virtually the same vistas witnessed by the gold seekers in 1849.

Near the Pahute Peak in the Black Rock Range a marker has been erected at the Lassen-Clapper murder site where Peter Lassen and his companion, Edward Clapper, were murdered in 1859 while searching for the lost Hardin silver ledge. In addition, Trails West and the Oregon-California Trails Association have marked important points along the Applegate-Lassen and Nobles Routes. A 1-mile corridor centered on the Applegate-Lassen Trail was listed on the National Register of Historic Places on December 18, 1978.

Military

During World War II and into the 1950s, the Black Rock Desert and portions of the Black Rock Desert Wilderness served as a gunnery range for the military. Old military bullets and shell casings can still be found. The nearby Summit Lake Reservation was once a military base known as Camp McGarry and there was an outpost of Camp McGarry at Soldier Meadows Ranch (private land).

Homesteading

By the 1870s, huge numbers of cattle, and later sheep, were driven throughout the region, and large ranches were established in and near the NCA. These include Miller and Lux and the Gerlach Land and Cattle Company. Gerlach, Nevada, was established in 1906 and named after Louis Gerlach, founder of the Gerlach Land and Cattle Company (Carlson 1974).

Homesteaders followed the development of these ranches. Some tried to farm low lands, and others were agents for large ranching operations. Their traces remain as wood and

stone houses, foundations, irrigation systems, and fences scattered throughout the planning area, with some of the best preserved examples in the East Fork High Rock Canyon Wilderness and High Rock Canyon. Some of these developments are still in use by current ranching operations. A list of structures within the wilderness areas which are associated with homesteading, early ranching, and mining are listed in Table 3-3.

Mining

Since the earliest modern mining attempts around 1849, prospecting for silver, gold, uranium, opals, sulfur, antimony, tungsten, gypsum, petroleum, and nitrates has taken place in the planning area. The remnants of these endeavors are prospects, shafts, adits, mining equipment, mining claim markers, small structures, and foundations. Examples of these mining activities and developments are most noticeable in the North Jackson Mountains and South Jackson Mountains, Calico and Pahute Peak Wildernesses. Several historic mining structures are located in the vicinity of Bull Creek in the South Jackson Mountains Wilderness. A list of structures within the wilderness areas which are associated with mining are listed in Table 3-5.

Table 3-5 Identified Structures Within Wilderness

Structure description	Associated historic activity	Current condition or status of assessment	National Register of Historic Places status	Wilderness Area
Bernard's Place	Homesteading	Assessment complete	Determined eligible	East Fork High Rock Canyon
Van Riper's Place	Homesteading	Assessment complete	Determined eligible	East Fork High Rock Canyon
Lassen Creek Cabin	Mining or Homesteading	Unknown condition	No determination	Pahute Peak
Bull Creek cabins	Mining	Structures mostly intact—no formal assessment initiated	No determination	South Jackson Mountains
Unnamed Mining Core Shack	Mining	Structure standing. Evidence suggests 1970s vintage	No determination	South Jackson Mountains
Colman Creek cabin	Ranching	Structure standing and mostly intact—no formal assessment initiated	No determination	North Black Rock Range

3.6.4 Invasive Non-native Plant Species

Several laws authorize control of noxious weeds on public land under the BLM's administrative jurisdiction (e.g., The Federal Insecticide, Fungicide and Rodenticide Act

of 1972, Federal Noxious Weed Act of 1974, FLPMA (1976), and the Public Rangelands Improvement Act of 1978).

Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds" and mandates land owners and land management agencies to control noxious weeds on lands under their jurisdiction. Nevada has listed 47 non-native invasive plant species mandated for control within the State of Nevada. Noxious weeds defined by the State of Nevada and are typically nonnative invasive plants. They are fast spreading and often expensive or difficult to control, and when introduced to an area, they can quickly dominate the landscape when uncontrolled. Noxious weeds may proliferate to the point of crowding out other plants that benefit wildlife and domestic animals. Noxious weeds are spread from infested areas by people, equipment, livestock/wildlife, and the wind. The potential for additional weed infestations grows along with increased weed populations as a result of human activities.

The Winnemucca District and Surprise Field Offices conduct ongoing inventories of noxious weeds through contract and with office personnel. To date, inventory efforts have identified six noxious weeds within the planning area: perennial pepperweed [a.k.a tall whitetop] (*Lepidium latifolium*), Russian knapweed (*Acroptilon repens*), bull thistle (*Cirsium vulgare*), tamarisk or salt cedar (*Tamarix ramosissima*), whitetop or hoary cress (*Cardaria draba*), and Scotch thistle (*Onopordum acanthium*).

Tamarisk has become well established in a number of drainages throughout the North and South Jackson Mountains Wildernesses and along several portions of the Quinn River and Jackson Slough within the Black Rock Desert Wilderness. The exact number of acres infested is unknown, but preliminary inventory suggests a conservative estimate of over 250 acres. Past control efforts have focused on cutting and cutting combined with herbicide treatment—both of which have proven to be only somewhat effective in killing individual plants.

Other noxious weeds present in the surrounding area are musk thistle (*Carduus nutans*), yellow starthistle (*Centaurea solstitialis*), spotted knapweed (*Centaurea maculosa*), whitetop or hoary cress (*Cardaria draba*), dyer's woad (*Isatis tinctoria*), Medusahead *Taeniatherum caput-medusae*), Mediterranean sage (*Salvia aethiopis*), poison hemlock (*Conium maculatum*), and leafy spurge *Euphorbia esula*). Treatment for priority noxious weed species is occurring yearly. With the exception of salt cedar and whitetop, occupied areas are less than one-tenth an acre in size and generally associated with roads.

3.6.5 Native American Religious Concerns

The planning area is within the traditional homeland of the Northern Paiute and is within the traditional territory of the kamodökadö ("jack-rabbit eaters"), the astakudöka tuviwarai ("red butte dwellers"), and the aga' (fish lake eaters") or madökadö ("wild onion eaters") bands. These bands are identified with modern groups that include the Summit Lake Paiute Tribe, the Pyramid Lake Paiute Tribe and the Susanville Indian Rancheria. The Summit Lake Paiute Reservation abuts the North Black Rock Range

Wilderness. Consultation letters were sent in February 2009 to the following tribes: Summit Lake Paiute Tribe, Susanville Rancheria, Cedarville Rancheria, Pyramid lake Paiute Tribe, Reno-Sparks Indian Colony, and Fort Bidwell.

The highly diverse biotic environment of the ten wilderness areas attracted habitation and provided hunting and gathering opportunities. Plants in the project area are likely to have been used for medicinal purposes as well as for food, shelter, basketry, tools, and clothing. Riparian zones are particularly rich sources of such plants. In addition, Native American groups often consider water sources to be sacred or to have magical properties.

The Reno-Sparks Indian Colony appreciated the preservation measures in the plan. The Summit Lake Paiute Tribe also commented on the proposed plan and expressed concern primarily about preservation of wilderness values and native plants. Other concerns included increased recreational use affecting the Summit Lake Reservation and protection of a cave where human remains were disturbed in the past. Native Americans have also indicated that there are burials in the Black Rock Mountains.

3.6.6 Threatened or Endangered Species

A list of federally listed, proposed or candidate species was requested from the U.S. Fish and Wildlife Service for the proposed project area (USFWS 2010). The Fish and Wildlife Service responded that the following species may occur within the proposed project area: 1) Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*, LCT) as a threatened species, and 2) Greater sage-grouse (*Centrocercus urophasianus*) as a candidate species.

Other species that are near the proposed project area include: 1) Desert Dace (*Eremichthys acros*) as a threatened species, 2) Elongate mud meadows springsnail (*Pyrugulopsis notidicola*) as a candidate species, and 3) Soldier Meadow cinquefoil (*Potentilla basaltica*) as a candidate species. There are no other known Threatened or Endangered Species in the proposed project area.

Lahontan Cutthroat Trout (*Oncorhyncus clarkii henshawi*) (Federally Listed Threatened Species)
Existing partially or entirely within the Planning Area are nine streams that are considered occupied or potential habitat for Lahontan cutthroat trout, *Oncorhynchus clarkii henshawi*, a federally listed threatened species since 1975 (Federal Register 1975, Vol. 40, p. 29864). Colman, Snow, and the North Fork of Battle creeks are partially within the North Black Rock Range Wilderness and are currently occupied by populations of Lahontan cutthroat trout. Donnelly and Paiute creeks are also partially within the Planning Area (Calico Mountains, and North Black Rock Range/Pahute Peak Wildernesses respectively), and although no Lahontan cutthroat trout currently inhabit the streams, they are listed as Lahontan cutthroat trout recovery streams and are managed in accordance with the 1995 Lahontan cutthroat trout Recovery Plan (USFWS 1995). Happy, Mary Sloan, and the North Fork of Jackson creeks are partially encompassed by the North Jackson Mountains Wilderness and are currently unoccupied, but are listed as

Lahontan cutthroat trout recovery streams. Bottle Creek is not listed in the 1995 Lahontan cutthroat trout Recovery Plan, but it is listed as a target watershed for Lahontan cutthroat trout reintroduction in the Nevada Division of Wildlife Species Management Plan (NDOW 1999). The Bottle Creek watershed is partially encompassed by the North Jackson Mountains Wilderness.

Life History Requirements

The Lahontan cutthroat trout inhabit lakes and streams but require streams to spawn. Intermittent tributary streams are frequently used as spawning sites (Coffin 1981; Trotter 1987). Spawning generally occurs from April through July, depending on stream flow, elevation, and water temperature (Calhoun 1942; La Rivers 1962; McAfee 1966; Lea 1968; Moyle 1976). Eggs are deposited in one-quarter to one-half inch gravels within riffles, pocket water, or pool crests. Spawning beds must be well oxygenated and relatively silt free for good egg survival. Fry remain in shallow bank-line areas with small gravel/cobble for cover. By early fall, the small fingerlings may school together in shallow pools. Stream dwelling Lahontan cutthroat trout are generally less than five years of age; while in lakes, Lahontan cutthroat trout may live as long as nine years. Optimum Lahontan cutthroat trout habitat is characterized by equal mixes of pools and riffle, well-vegetated stable streambanks, more than 25 percent cover, and a relatively silt-free gravel/rubble substrate (Hickman and Raleigh 1982), but the subspecies inhabits a wide range of less than optimal habitat conditions. They tolerate higher alkalinities than other trout species and can survive wide daily temperature fluctuations (25 to 35 ºF). Dunham et. al. (1999) note that most Lahontan cutthroat trout populations have a distribution limit corresponding closely to maximum summer temperatures of 78 ºF. Populations in less than optimal habitat may be present but with reduced numbers and age classes. In some streams, Lahontan cutthroat trout have been observed in water temperatures exceeding 81 ºF but have been observed dying at 82 ºF in other streams during August. In Willow Creek, Oregon, Lahontan cutthroat trout have been observed in warmer waters (daily maximum of 83 ºF) than observed in other streams. In general, Lahontan cutthroat trout appear to avoid maximum water temperatures of 78.8 ºF, if possible (Dunham et. al. 1999). Dunham et. al. (1999) recommend that water temperatures for Lahontan cutthroat trout should not equal or exceed a daily maximum of 72 ºF to minimize risk of mortality and sublethal thermal stress. Lahontan cutthroat trout are opportunistic feeders. In small streams, they feed on terrestrial and aquatic insects, which are caught in the drift. Fish larger than 12 inches in larger water bodies turn to a fish diet where available (Sigler and Sigler 1987). In 1971, observations indicated that two cyprinid species of fish had become established in Summit Lake, thereby establishing a forage/prey base for this lacustrine population. The population recovery strategy for Lahontan cutthroat trout includes population management for genetic variation, and increasing the distribution and abundance through reproduction and reintroductions. The strategy also includes habitat management designed to improve habitat conditions.

Greater sage-grouse (*Centrecercus urophasianus*) (Federal Candidate Species)

The greater sage-grouse is listed by the USFWS as a candidate species for protection under the ESA (Federal Register 2010, Vol. 75, p. 13910). The greater sage-grouse is a

large upland game-bird species that breeds in areas known as leks, where numerous males perform mating displays to attract females. Leks are typically within close proximity to nesting and brood-rearing habitat and are often considered an excellent reference point for monitoring and habitat protection measures. Greater sage-grouse habitat is indicated on Map 18. NDOW considers northwestern Nevada to be important greater sage-grouse habitat. Historic records, which are mostly anecdotal and lack systematic survey data, indicate that greater sage-grouse populations have fluctuated widely in Nevada. NDOW has indicated that the current population is considered to be declining. In much of the popular and scientific literature, greater sage-grouse are considered an indicator species or "icon" of the sagebrush steppe. The Partners in Flight Western Working Group (Altman and Holmes 2000) consider greater sage-grouse as a species that occupies habitats that have declined substantially within the interior Great Basin since historical times. Greater sage-grouse are wide ranging, and occupy upland, meadows, and riparian habitats. It is for this reason that greater sage-grouse are identified as the primary indicator or umbrella species for sagebrush habitats in this plan. This species is highly dependent on the presence of several species and subspecies of shrubs, notably Wyoming, mountain, and Great Basin sagebrush. Other species such as low sagebrush are also important. Nesting tends to occur at mid-elevation habitats that support adequate shrubby and herbaceous plant cover (Connelly et al. 2000). Nesting habitats are typically associated with big sage/low sagebrush habitat complexes. Spring, summer, and fall ranges with a good compliment of native grasses and forbs are associated with productive greater sage-grouse habitat. During the winter, sage-grouse forage almost exclusively on either big sagebrush or low sagebrush depending on severity of snowfall and migratory habits of populations. Mountain meadows, riparian areas, and moist upland range sites all provide sources of succulent green forage and insects that are important food for grouse during the spring, summer, and fall. Greater sage-grouse habitat and breeding complex monitoring is an ongoing effort that NDOW and BLM have participated in jointly for several years. The proposed activities in this EA are judged to have no impact on this species or its critical habitat and will be dismissed from further analysis.

Desert Dace (*Eremichthys acros*) (Federally Listed Threatened Species)

The hot springs and their outflows to the south and west of the Soldier Meadows Ranch are the only known habitats for the desert dace (*Eremichthys acros*). The desert dace has been federally listed as Threatened since 1985 (Federal Register 1985, Vol. 50, p. 50304) and is the only member of the genus, *Eremichthys*. At the time of listing, critical habitat was also listed, that encompasses 50 feet on each side of designated thermal springs and their outflow streams (USFWS 1997). The desert dace occupied habitat is near the proposed planning area. The occupied habitat on public land was fenced in 2005 to protect them from abusive livestock and wild horse grazing. The proposed activities are outside of the fenced area. For these reasons, the proposed activities are judged to have no impact on this species or its critical habitat and will be dismissed from further analysis.

Elongate mud meadow springsnail (*Pyrugulopsis notidicola*) (Federal Candidate Species)

Numerous spring systems exist within the Hot Springs Area of the Soldier Meadows area, which range from cold (near or below mean air temperature), thermal (5-10^{o} C above mean air temperature), or hot (more than 10^{o} C above mean air temperature) (see Sada et al. 2001). Within the SMA several springsnails, which are small (1-8 mm high) mollusks that require high quality water (Sada et al. 2001), have been identified as being unique to the area. The majority of these species are members of the genus Prygulopsis, with one species belonging to the genus Fluminicola. These genera prefer cool, flowing water and gravel substrate (Sada et al. 2001). One species, the elongate mud meadows pryg is listed by the USFWS as a candidate species for protection under the ESA (Federal Register 2002, Vol. 67, p. 40661). The primary areas of known springsnail concentrations on public lands occur in the vicinity of the desert dace critical habitats that were fenced to exclude livestock and wild horses in 2005. The proposed actions are outside the fenced area for the species, and therefore there is no impact on the springsnail species or its habitats and will be dismissed from further analysis.

Soldier Meadow cinquefoil (*Potentilla basaltica*) (Federal Candidate Species)
Potentilla basaltica is an herbaceous perennial plant that grows primarily in the Soldier Meadows area. It is currently listed by the USFWS as a candidate for listing as threatened under the Endangered Species Act (Federal Register 2002, Vol. 67, p. 40662). The plant grows from prostrate stems extending from a low basal rosette. Bright yellow flowers occur in loose clusters at the end of the stems. The species blooms from late spring and summer. The species is associated with moist saline/alkaline soils associated with alkali seeps and meadows and appears to favor sites with micro-relief in saturated soils to obtain root aeration. Surveys completed by Nachlinger in 1990 and repeated by FWS in 2002 and BLM in 2009 indicate stable to increasing populations. Most potential habitat is occupied, except where vehicle trails cross through small areas of otherwise suitable habitat. The current threats are associated with recreation use of occupied habitat. Basalt cinquefoil also exhibits the ability to colonize previously disturbed areas, including old livestock corrals and the raised rim of hoof prints in wet soils. All documented populations near the project area are within exclosures constructed in part to eliminate impacts on the species. For this reason, the proposed activities are judged to have no impact on this species or its habitats and will be dismissed from further analysis.

3.6.7 Wetlands or Riparian Zones

WATER RESOURCES
The planning area lies within portions of several separate watersheds located within the Great Basin Hydrologic Region. The majority of the planning area is contained within the Quinn River Watershed, Lower Quinn River Sub-Basin. The planning area falls within the Great Basin physiographic province and can be accurately described as a high desert. Precipitation within the area is orographically (induced by the presence of mountains) controlled and elevation dependent. The planning area has numerous intermittent and perennial (year-round) streams. About 100 miles of perennial streams are in the planning area. Perennial streams include Donnelly Creek, Cherry Creek, Slumgullion Creek, Colman Creek, Jackson Creek, Snow Creek, Deer Creek, Happy Creek, and a portion of

High Rock Canyon drainage. Although it is not perennial, the Quinn River is the major drainage feature of the planning area. Most stream flows are generated from springs in stream headwaters and runoff from winter and spring precipitation. Summer storm events are not a significant input to the yearly flow regime in the planning area. Base flows for these streams are generally less than one cubic foot per second, with average yearly flood stage at less than 10 cubic feet per second. The location of the watersheds creates streams of moderate-to-high gradients with low-to-moderate sinuosity and bed materials ranging from silt-sand to large boulders. Deep, incised channels characterize most streams. Most lotic (flowing water) systems are functioning at risk as a result of past land management practices, including livestock grazing, water diversion impoundments, mining, road placement, and OHV use. The upper watersheds in the Calico Mountains and Black Rock Range are characterized by small spring and meadow complexes, which for the most part are functioning at risk. Limiting factors include adverse effects from livestock and wild horse grazing, road intersections, and OHV use. The majority of stream flow is derived during the spring in direct response to the melting of the snow pack. Typical stream flow dynamics for the planning area is for flow to originate at the upper elevations and enter the stream by way of overland flow and shallow ground water discharge (interflow). As this flow exits the mountains onto the alluvial fan, it quickly sinks below the surface. Riparian vegetation exists in the mountainous areas before the water goes underground. Cold water and thermal (hot) springs, seeps, and flowing (artesian) wells are common and significant attributes of the plan area. These water sources originate as precipitation and appear on the land surface as ground water discharge in various situations, as listed below:

- Where the land surface intercepts a water table
- Where ground water flow intercepts an impermeable barrier
- As an artesian flow where water is forced to the land surface because of certain subsurface conditions, such as the presence of faults that allow ground water to circulate at depths where it is heated, returning to the surface as hot springs
- As an unrestrained artesian flow (flowing wells) at locations where a dug or drilled well intercepts ground water in an aquifer with sufficient pressure to flow to the surface under its own power. Perched or contact springs are the most common type of spring encountered. The source water for these springs is infiltrating precipitation that has been captured and concentrated in areas where fractured or unconsolidated material is underlain by less permeable material (aquitards) that inhibit the downward migration of water. These springs emanate at locations where the aquitard intersects the surface of the ground and the "perched" water seeps out. These springs are not directly connected with the surrounding water table and are generally unaffected by ground water flow. Coldwater springs are located throughout the planning area. A less common, but ecologically and culturally important spring that is encountered in the planning area is the thermal spring.

Riparian areas consist of plant communities associated with streams and rivers. The structure, food, and water provided in riparian areas make them the single most diverse and productive habitat for wildlife. Where site potential allows, multicanopy riparian areas with trees, shrubs, grasses, forbs, sedges, and rushes are exceptionally valuable as

habitat for a wide array of wildlife species. Riparian areas dominated by herbaceous communities and with low potential for multicanopy structure are nevertheless important as water and succulent food sources for wildlife. The presence of multiple-aged classes of woody and herbaceous vegetation is generally indicative of healthy wildlife habitat conditions. Other permanently wet or seasonally wet areas, typically called wetlands, include reservoirs, vegetated playas, meadows, springs, and seeps. They are also commonly found independent of a defined stream channel and can occur throughout various elevations and landscape settings. This is particularly true for meadows, springs, and seeps that may be present within very arid areas and at low elevations. Wetlands are similar to riparian areas in that the site potential for wildlife habitat can vary markedly. Regardless of the habitat type, wetlands typically provide wildlife succulent green forage, insects, and drinking water. Green forage is especially important for many wildlife species during the summer and fall when upland vegetation has dried out. Meadow habitats are vulnerable to grazing and other surface-disturbing uses that affect soil stability, water-holding capacity, and plant composition. All meadows are important watershed components. Meadows functionally impaired by gullies, sagebrush encroachment, and dominance by species such as iris (*Iris* spp.) provides greatly diminished wildlife habitat values, and indicates poor habitat health. Where the site potential exists, wetlands associated with reservoirs or vegetated playas commonly provide valuable nesting and broodrearing habitat for waterfowl and shorebirds. Common vegetation associated with these types of wetlands includes inland saltgrass (*Distichlis spicata stricta*), Baltic rush (*Juncus balticus*), spikerush (*Eleocharis* spp.), alkali bulrush (*Scirpus robustus*), and cattail (*Typha angustifolia*). Some species of amphibians, birds, and reptiles tend to associate with these areas. Many springs flow directly into streams, but others form small, isolated ponds or marshy areas.

Springs are important to lotic (flowing water) habitat because of the perennial baseflow they provide. In winter, especially in small streams, this baseflow prevents formation of ice. In summer, inflow from springs not only provides volume but also helps to lower water temperatures. Depending on soil and topography, extensive riparian or wetland areas may be associated with spring sources. Because of the continuous flow and constant temperature of most springs, riparian communities frequently remain permanently green, providing habitat and forage for wildlife throughout the year. Springs can be a source of unique, native groups of invertebrates. Because these habitats are uncommon and isolated, a particular species may be found only at that site and may have little opportunity for dispersal or migration to other areas. Several rare snail species are restricted to springs and are vulnerable to development that eliminates shallow pools and surrounding riparian vegetation. Animals are never abundant at thermal springs; however, many unique species of beetles, fish including the desert dace, and invertebrates are adapted to thermal springs. These communities generally rely on shallow areas of flowing hot water and algae and cannot survive where dams or barriers form deep pools.

3.6.8 Wilderness

Wilderness Overview

The wilderness areas contain a diverse representation of Great Basin landforms, plants, animals, and habitats. Located at the eastern side of the Planning Area, the North Jackson Mountain and South Jackson Mountain Wildernesses are located within the Jackson Mountains and separated by Trout Creek and the adjacent County road. Between the Jackson Mountains and the Black Rock Mountain Range lies the vast flat expanse of the east arm of the Black Rock Desert including the Black Rock Desert Wilderness which has a boundary largely defined by adjacent roads and private lands. Within the Black Rock Mountain Range are the Pahute Peak and North Black Rock Range Wildernesses. Still further west within the Calico Mountain Range are the Calico Mountains and High Rock Lake Wildernesses. Finally, in the western side of the Planning Area, characterized by high basalt tablelands dissected by deep canyons, are the Little High Rock Canyon, High Rock Canyon, and East Fork High Rock Canyon Wildernesses which are separated only by east-west motorized routes.

Topography is widely varied from the flat expanses of desert below 4,000 feet, to jagged peaks reaching 8,500 feet in elevation. Temperatures vary throughout the year from below zero during winter with snow common at higher elevations through June, to over 100 degrees Fahrenheit during summer.

Vegetation in the wilderness areas varies with elevation, aspect, and hydrology but is typical of the northern Great Basin. Large portions of the area are predominantly sagebrush vegetation communities, with greasewood and salt desert scrub occurring at lower elevations. Some higher elevation uplands contain juniper, aspen, and mountain mahogany. Riparian areas include aspens, cottonwoods, willows, and red osier dogwood.

Wildlife found within the wilderness areas include mule deer, pronghorn antelope, California bighorn sheep, coyotes, bobcat, mountain lion, black-tailed jack rabbits, cotton-tail rabbits, pygmy rabbit, kit foxes and badgers. Bird species include greater sage-grouse, chukar partridge, and a wide range of migrant song birds and raptors. A wide variety of reptiles, invertebrates, and other smaller creatures are common throughout the area. Certain streams also provide habitat for speckled dace, Lahontan cutthroat trout, and other fish species.

Wilderness Character

The Wilderness Act defined a wilderness area as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable, and has outstanding opportunities for solitude or a primitive and unconfined type of

recreation. Wilderness areas may also contain ecological, geological or other features of scientific, educational, scenic, or historical value.

While the wilderness areas lie in close proximity to one another, together they span over one hundred miles, and contain a wide variety of resources, conditions, and unique qualities. Each is slightly different in terms of natural conditions present, opportunities for solitude, opportunities for primitive and unconfined recreation, and various special values (i.e. ecological, geological, scientific, educational, scenic, or historical values).

Untrammeled

The wilderness areas, by definition, are places where nature is unconfined and free from human control and manipulation. However, a variety of activities occur within the wilderness areas which are either intended to restore natural conditions and ecological stability or are allowed because they occurred before the areas were designated as wilderness.

Management actions that occur, or have occurred in the past, within the wilderness areas include: alteration of fire regimes through repeated suppression of natural wildfires and ignition of prescribed fires, alteration of population dynamics through repeated gather and removal of wild horses and burros, reintroduction, augmentation or removal of native fish and wildlife populations (i.e. bighorn sheep and Lahontan cutthroat trout), the development of artificial water sources for small game; and alteration of plant succession and ecology through long-term livestock grazing, restoration of closed and illegal motorized routes and control of non-native invasive plant populations.

Naturalness and Primeval Character

The term naturalness is defined for this plan as “a condition or appearance of being affected primarily by the forces of nature with the influences of man’s work substantially unnoticeable”. While a great deal of effort has been devoted to restoring the wilderness areas to a more natural condition, evidence of ongoing livestock grazing and evidence of both ongoing illegal use and past use of motorized vehicles remain visible at locations within each of the wilderness areas.

Grazing by cattle, suppression of natural fire, the presence of non-native plant species, and repeated overpopulation of wild horses and burros continue to create unnatural conditions within the wilderness areas. These influences tend to alter natural processes, native habitat composition, species abundance and, over time, ecological integrity. The extent to which these factors have altered natural conditions is largely unknown at this time.

Recreational rock hounding is allowed, and occurs within the wilderness areas. Collecting is dispersed and the amount of material collected is limited. Use is minimal and has not created any noticeable affect on natural appearance.

Undeveloped

Mining disturbances can be found in portions of several of the wilderness areas. Evidence includes disturbances, structures, and materials at historical and active mining claims and plastic claim posts and other discarded items at numerous abandoned and inactive claims. Non-historical discarded materials and resource damage associated with inactive mining continues to be removed, actively restored, or left to the elements to naturally recover. Most old mining tunnels, prospect pits and shafts entrances have eroded with time and vegetation has grown over providing a natural screening factor and wildlife habitat to snakes, bats, rodents, and other wildlife. The only known historic mining structures are within the South Jackson Mountains Wilderness. These structures have been surrounded over the past fifty years by juniper, and are not visible from any great distance. Two properly filed and maintained mining claims still exist in the Little High Rock Canyon Wilderness, but are currently not active and have little noticeable effect on wilderness character.

There are various former motorized routes, which were closed at the time of wilderness designation in 2000. These routes have been signed closed, actively rehabilitated or allowed to recover naturally. Various routes can still be seen from certain locations, but as rehabilitation and naturalization progresses they continue to become less visible over time. Several of these former motorized routes now serve as unofficial (and unmaintained) trails within the wilderness areas. Unauthorized motorized use continues to occur along some closed routes, but has been greatly reduced with signing and the reclamation of closed vehicle routes.

Opportunities for Solitude

Solitude is defined by Bureau policy as “the state of being alone or remote from habitations; isolation. A lonely, unfrequented, or secluded place”. Of the relatively few people who visit the wilderness areas, the majority are hunters. Encounters occur rarely and usually along the boundary roads outside the wilderness areas. There are no designated trails or campsites within the wilderness areas. Hikers are expected to use maps and a compass to find their way. The absence of developed trails and campsites within wilderness allows for dispersed travel and reduced chances of encountering other visitors. The majority of camping occurs adjacent to the wilderness areas along access roads and at different times of year. Overnight camping within the wilderness areas is occasional and primarily by backpackers and hunters. Each of the wilderness areas has sufficient size and visual screening provided by landforms to provide outstanding opportunities for undisturbed solitude and dispersed primitive recreation.

Aircraft flights for military training, State of Nevada Department of Wildlife (NDOW) wildlife surveys, permittee livestock management flights, and BLM

wild horse census flights occur infrequently, typically during winter and early spring when visitation is lowest and have minimal effect on wilderness solitude.

Opportunities for Primitive and Unconfined Recreation
Refer to Section 3.7.4.8

Special Values
While each wilderness area possess its own special values, all ten areas share the rich historic values of the region which include ancient and scientifically important paleontological remains, unique evidence of prehistoric and modern native cultures, routes of historic explorers and 19th century emigrants, reminders of early homesteading, military activities, and the ranching lifestyle. Each of the wilderness areas possess evidence of these values to varying degrees. The wilderness areas preserve these values for current and future generations to experience and to be a part of.

The wilderness areas provide habitat for rare plants, including *Penstemon flobibundus*, *Caulanthus barnebyi,* and *Astagalus pterocarpus,* and for the imperiled greater sage-grouse and Federally listed Lahontan cutthroat trout.

North and South Jackson Mountains Wildernesses

Untrammeled
While not always noticeable to the casual observer, the North and South Jackson Mountains wilderness areas are most affected by management actions. Management of cattle grazing continues to alter plant ecology and ecological processes in several portions of these two areas. When compared with the other eight wilderness areas, wildland fire and fire suppression are most frequent within the North Jackson Mountains and South Jackson Mountains Wildernesses. As a result, the natural role of fire within these two areas is primarily affected by human activities. When combined, these two management actions have substantially altered the fire regime and succession of plant communities.

While tamarisk is a non-native plant and represents an adverse impact to naturalness, continued management actions to control this species in a number of drainages within these two wilderness areas interferes with natural processes such as population expansion.

Naturalness
The natural character of habitats in both areas is noticeably affected by growing populations of tamarisk. Dense stands of Utah juniper are noticeable evidence of continued aggressive wildfire suppression. Grazing from excessive numbers of animals is clearly evident from the lack of bunchgrass and other plant species.

Undeveloped

The majority of developments occur within the southern portion of the South Jackson Mountains Wilderness. These include a number of relatively unnoticeable range developments, several historic cabins, and at least one mine adit. There are scattered remnants of historic mining activity. These historic structures have not been evaluated for National Register eligibility. Two agricultural irrigation ditches are located in the South Jacksons.

The majority of developments in the North Jacksons occur in the north and western edges. A number of range developments and one wildlife water development on the east side of the North Jackson Mountains Wilderness are relatively unnoticeable. Both wilderness areas offer a wide-variety of natural desert lands, with unique geological land forms, affluent desert vegetation communities, and important wildlife habitat.

Opportunities for Solitude

Opportunities for solitude in the South Jackson Mountains Wilderness abound; from the consuming presence of King Lear Peak's granite rock formations, to the juniper woodlands and rugged canyons of cottonwoods that significantly enhance opportunity for solitude by screening other visitor use throughout much of the area.

Opportunities for solitude are also abundant within the rugged central portion of the North Jackson Mountain Wilderness surrounded by folded rock formations and caves near Parrot Peak. These formations provide screening and add to the remoteness of the wilderness area and the adventure that comes from moving through an undeveloped landscape, experiencing natural sights and sounds, and enjoying the solitude of being away from other people and their activities.

Except for distant views of mining, farming and ranching, there is little to impair the feeling of solitude and primitiveness within these two wilderness areas.

Special Values

Stands of Utah juniper, groves of aspen along mountain streams, and the overshadowing presence of King Lear Peak provide exceptional scenic quality. Scenic vistas abound from the numerous peaks within these two wilderness areas—providing views of the Black Rock Desert and numerous mountain ranges visible on clear days for over one hundred miles into the distance.

Both wilderness areas contain extensive important riparian areas, including Jackson and Bottle creeks which are listed as potential recovery habitat for the Federally threatened Lahontan cutthroat trout.

General Management Situation

While recreation use within the two wilderness areas is relatively light, King Lear Peak is mentioned as a hiking and scrambling route in several guidebooks

and websites. According to the summit register, about five to ten groups climb the peak per year.

Several streams in the area are listed as potential Lahontan Cutthroat Trout reintroduction sites. The eastern portions of the areas are within the Jackson Mountains Greater Sage Grouse Population Management Unit (PMU).

One mining claim patent location and one other private inholding are located within the North Jackson Mountains Wilderness.

Black Rock Desert Wilderness

Untrammeled

This wilderness area is perhaps least trammeled of all the wilderness areas. Grazing occurs within parts of this wilderness area, but the majority has been closed to grazing since designation in 2000. While wildfire, wild horses, and invasive species occur within this wilderness, few efforts have been taken to manage these influences. As a result, most processes within the Black Rock Desert Wilderness occur free from human influence or control.

Naturalness

The Black Rock Desert Wilderness is a large desert playa and the remains of prehistoric Lake Lahontan; it is bordered to the east by Jackson Mountains and to the west by the Black Rock Mountain Range. The outer hummock fringe of the Wilderness is sparsely covered with sagebrush and greasewood.

The Quinn River, one of three major drainages which enters the wilderness from the northern edge, fingers out through a maze of small drainages before being swallowed by the playa except in the wettest of years when a thin sheet of water gives a hint of the playa's ancient origin. Unfortunately, the natural condition of the drainage has been substantially altered by dense populations of tamarisk (salt cedar) and tall whitetop. Salt Cedar Leaf Beetles (*Diorhabda elongate*) have been released in other portions of northwestern Nevada to control tamarisk but are not believed to be within the wilderness at this time. Tamarisk populations continue to expand and alter the natural character of the Black Rock Desert Wilderness.

Undeveloped

Constructed developments within the wilderness are primarily range developments. Human developments adjacent to the wilderness include additional range developments, ranching activities, boundary roads, and a railroad track near the south tip. These imprints are screened from the interior by the hummocky terrain along the edges. Although the majority of the wilderness was used as a gunnery range by the military from 1943 through the late 1950s, virtually no evidence remains today, although small ammunition, cartridge casing, and spent bullets are occasionally found and invalidated reports of military Quonset style

buildings persist. The naturalness of the Black Rock Desert Wilderness is unique in that it likely contains the largest undisturbed natural playa ecosystem within the United States.

Opportunities for Solitude
Although topographic and vegetative screening throughout the wilderness is minimal, opportunities for solitude are considered outstanding due to the vast size and undeveloped nature of the area. The open expanse of this wilderness gives visitors the feeling of being a castaway adrift in a sea of white desert. Vistas go on for miles and mirages sneak up from all sides off the desert floor. The vastness and overwhelming feeling of isolation creates an experience unlike any other.

The Wilderness is located within a Military Operations Area (MOA) and during times when training flights occur over the area, opportunities for solitude are diminished.

Primitive and Unconfined Recreation
Refer to Section 3.7.4.8

Special Values
The sheer size of the Black Rock Desert Wilderness is one of its special features. At just under 315,000 acres, this area is one of the largest protected desert playas in the United States. Two visually significant land marks in the northwest corner are Elephant and Pinto Mountains. Pinto with its multicolor sides of black, red and white, saddled with a large basalt mesa enhance its presence against the bare desert playa. Elephant's silhouetting presence resembling its name sake is befitting to the area that has discovered remains of a woolly mammoth. This remote desert environment has preserved some of the best examples of early human history and prehistoric animal life in the region. In recent years the remains of several wooly mammoths and a saber tooth tiger, believed to have been trapped in the ancient lake's muddy shoreline, have been discovered. These resources provide outstanding historic value and opportunities for scientific research and environmental education.

General Management Situation

BLM has issued permits to universities to conduct cultural and paleological inventories in the area.

Pahute Peak Wilderness

Untrammeled
Refer to Wilderness Overview section

Naturalness

The Pahute Peak Wilderness is predominantly natural from its southern "badland" landscapes with colorful mineral deposits, to Big Mountain with its nearly flat top, steep slopes, aspen laden drainages and mountain mahogany stands on the northern flanks.

Undeveloped
The evidence of human development are a number of range developments. NDOW wildlife water developments, and a historic cabin located in the upper portion of Clapper Creek. All are relatively unnoticeable. The cabin has not been evaluated for National Register eligibility.

Surface disturbances from past mining activities are minimal and can be found in Copper and Clapper canyons on the western side of the wilderness.

Opportunities for Solitude
There are abundant opportunities for solitude within the Pahute Peak Wilderness, especially near Big Mountain where stands of mountain mahogany and aspen provide ample vegetative screening. Low shrubs and numerous drainages provide excellent topographic screening throughout the eastern and western portions. The southern end contains colorful barren areas often referred to as badlands. The large configurations of badlands combined together with the excellent unimpaired distant views of the Black Rock Desert from the ridgeline enhance the perception of solitude while limiting chance encounters with others.

Primitive and Unconfined Recreation
Refer to Section 3.7.4.8

Special Values
The entire western half of the Pahute Peak Wilderness serves as the scenic viewshed for the adjacent portion of the Applegate-Lassen Trail and for the gravesite of Peter Lassen (which is listed on the National Register of Historic Places).

The north flanks of Big Mountain provide habitat for a small stand of white bark pines which are found in few other locations within the region. The southern portion of the wilderness contains several areas of colored "badlands" including Fremont's Castle, named after the early explorer John Fremont who traveled the area in 1843.

North Black Rock Range Wilderness

Untrammeled
Refer to Wilderness Overview section

Naturalness

Natural conditions within the wilderness have been improved in past years through the reintroduction of Lahontan cutthroat trout and bighorn sheep which were once abundant throughout the region.

Undeveloped

The majority of the North Black Rock Range remains undisturbed from human intrusions or developments. The developments which do exist include four wildlife water developments, one remote automated weather station (RAWS), and fencelines near portions of the wilderness boundary. A remote line-shack or sheep herder's cabin in the Colman creek drainage is a remnant from past ranching practices and is the only known structure within the North Black Rock Range Wilderness (refer to Section 3.6.3 Cultural Resources). Except for the occasional hiker, the cabin is no longer used.

Opportunities for Solitude

North Black Rock Range Wilderness is the smallest in acreage of the wilderness areas. Its landform configurations and available roads providing access consolidate visitor use to the south of the wilderness area and between the wilderness area and the Lahontan Cutthroat Trout Instant Wilderness Study Area located immediately to the north. The North Black Rock Range Wilderness encompasses the majority of the Colman Creek watershed which includes scattered stands of aspen, small grassy meadows, and basalt buttes and slopes covered with grass and sage brush. Even with limited access concentrating visitor use, the screening provided by dense aspen stands, riparian vegetation and topography are sufficient to maintain excellent opportunities for solitude.

Primitive and Unconfined Recreation

Refer to Section 3.7.4.8

Special Values

The North Black Rock Range Wilderness contains several scenic and interesting land forms. The large escarpment with its volcanic tuffs and varied colors which bisects the western portion of the wilderness overlooks the massive landslide which formed Summit Lake.

Deep valleys of aspen, cottonwood and willow in the Colman, Soldier and Battle Creek drainages make for diverse riparian habitats found in few other areas of the region. Colman and Battle creeks provide important habitat for the Federally listed Lahontan cutthroat trout and contains several small waterfalls.

Calico Mountains Wilderness

Untrammeled

While influences described in the previous discussion of overall wilderness character are very obvious in certain portions, they are not substantially noticeable throughout the Calico Mountains Wilderness.

Naturalness
Most of the area within the Calico Mountains Wilderness is substantially natural especially along the crest of the Calico Mountain Range.

Undeveloped
The most visible imprints are associated with old mining areas south of petrified canyon and near Donnelly Peak. There is one wildlife water development and a number of range and agricultural developments which vary from small unnoticeable fence exclosures to developed springs with more obtrusive routes, water troughs, irrigation ditches, and fencelines.

Opportunities for Solitude
The varied topography and large size make it easy for visitors to find solitude within the Calico Mountains Wilderness. The steep rugged canyons and deep drainages provide minimal vegetative screening, but the topographic screening is more than adequate in providing numerous isolated areas in canyons, draws, and remote basins. Donnelly Creek is the only drainage where vegetative screening is sufficient to prevent or reduce the sights and sounds of other visitors and activities. Short-term visual intrusions are caused from vehicle dust trails from Soldier Meadows Road on the east boundary, two track roads between west side boundary and Hwy 34, and the Black Rock Playa. With the exception of distant views off the south ridgeline of farming, ranching, and vehicle dust trails from the playa and two track roads surrounding the adjacent boundary, there is little to impair the feeling of solitude.

Primitive and Unconfined Recreation
Refer to Section 3.7.4.8

Special Values
The Calico Mountains Wilderness encompasses the southern portion of the range and contains many varied and brightly colored, twisted geologic formations exposed by erosion which give the area a calico appearance and also give the mountain range its name.

The Wilderness contains a portion of Donnelly Creek which is considered potential habitat for recovery of the Federally threatened Lahontan cutthroat trout.

High Rock Lake Wilderness

Untrammeled

While influences described in the previous discussion of overall wilderness character are very obvious in certain portions, they are not substantially noticeable throughout the High Rock Lake Wilderness.

Naturalness
The High Rock Lake Wilderness is like a great desert recipe full of natural ingredients, part dry lake bed, part desert floor, part mountainous and part high plateau, mixed and cut by canyons and drainages. Much of the eastern area consists of a mesa and in the western portion rimrock bluffs tower over the dry bed of High Rock Lake.

Undeveloped
Nearly two-thirds of the area is free from human developments. The larger developments are five wildlife water developments located along the eastern foothills of the Calico Mountains. A few range developments are spread throughout the wilderness. Access is provided by roads which parallel the wilderness area boundary, including three dead-end roads—referred to as "cherrystem routes" (see Appendix F).

Opportunities for Solitude
The varied topography and large size of the High Rock Lake Wilderness makes it easy to achieve solitude. Steep rugged canyons and deep drainages provide minimal vegetative screening but areas within Fly, Box, and Cherry Canyons provide isolation from other activities and visitors. The broken intermittent segments of the boundary lessen the possibility of chance encounters with other visitors and decrease visual intrusions of vehicle dust trails that could be viewed from the ridgeline. Aspen and riparian vegetation screening can be found along the bottom of Donnelly creek. With the exception of views from the ridgeline to the north of Soldier Meadows Hot Springs and ranch activity, there is little to affect the visitor experience of solitude.

Primitive and Unconfined Recreation
Refer to Section 3.7.4.8

Special Values
The only portion of the Applegate-Lassen Trail within designated wilderness is within the High Rock Lake Wilderness. The wilderness area preserves the "integrity of the viewshed" for other adjacent portions of the Trail. This special value was recognized by Congress in the NCA Act.

The High Rock Lake Wilderness contains the northern portion of the Calico Mountains. The west side of the area consists of rimrock bluffs and the northwest corner is occupied by the intermittent High Rock Lake. High Rock Lake was created about 14,000 years ago after a large rockslide closed the original outlet to High Rock and Little High Rock canyons. The new outlet cut Fly Canyon, a narrow rimbound canyon that empties at Soldier Meadows. A special feature of

Fly Canyon is the "potholes". These are erosional features that have formed in the bedrock of the canyon by the swirling and whirlpool action of the stream.

The High Rock Lake Wilderness is the primary wilderness to find wild burros in the planning area.

The northernmost portion of the High Rock Lake Wilderness contains less than five acres of critical habitat for the Federally threatened Desert Dace (*Eremichthys acros*). No occupied or potentially occupied streams are located within the wilderness boundary but the northernmost edge of the boundary falls within the critical habitat. Critical habitat is defined as occupied or potentially occupied streams and a 50 foot buffer zone adjacent to said streams. The wilderness also contains portions of Donnelly Creek in the Calico Mountains which is listed as potential habitat for recovery of the Federally threatened Lahontan cutthroat trout.

General Management Situation

Unauthorized motorized trespass continues in the area but has been greatly reduced with signing and the reclamation of closed vehicle routes. Three cherrystem routes provide additional access to the wilderness area.

High Rock Canyon, East Fork High Rock Canyon and Little High Rock Canyon Wildernesses

Untrammeled

Unlike much of the other seven wilderness areas, certain portions of these wilderness areas are closed to grazing. In addition, the combination of vegetation types, lack of development, and comparatively low lightning frequency result in less need for wildland fire suppression or active control of invasive non-native plants. Prescribed burning has been utilized in the bottom of High Rock Canyon to restore natural vegetation mosaics. While these and other influences which each of the wilderness areas have in common (refer to Wilderness Overview section) are very obvious in certain portions, they are not substantially noticeable throughout these three wilderness areas and have less of an overall effect on the untrammeled character when compared with the other wilderness areas.

Naturalness

The appearance of the landscape remains essentially unaltered from the time emigrants viewed it more than one hundred and fifty years ago.

Undeveloped

The greater part of these three wilderness areas remain undisturbed from human intrusions, except for some scattered developments. The majority of range developments within the three wilderness areas are found along the perimeter and

most are screened from view by topography and/or vegetation. Some developments such as reservoirs and stock ponds appear to have naturalized over time due to erosion and re-vegetation. From 1915 until the early 1930s, homesteaders inhabited Pole Canyon. The remains of these homesteads are still visible and include two historic cabins within the East Fork High Rock Canyon Wilderness. These cabins have been determined eligible for the National Register. A metal grate within the Little High Rock Canyon Wilderness protects a prehistoric rock shelter from disturbance and looting. These three wilderness areas have a wide-variety of natural desert lands, with unique geological land forms with very few human imprints.

The management of livestock which has excluded grazing in canyon areas and the use of prescribed burning to reduce decadent stands of sagebrush and recover Great Basin wild rye have restored more natural conditions to portions of theses wilderness areas.

Opportunities for Solitude

Visitors value the remoteness of these three wilderness areas and the adventure that comes from experiencing natural sights, sounds and enjoying the solitude they provide. Vast basalt table lands or mesas can be found within the interiors, topped with mountain peaks, rocky buttes and cut by numerous deep drainages, ravines and canyons which provide visual screening. The deep curving canyon floors of High Rock, Little High Rock, Pole and many others canyons are carpeted in willows, wet meadows, rock escarpments and shadows created by the high cliff walls, creating a maze of visual barriers.

Opportunities for solitude within the wilderness portions of High Rock Canyon (which includes portions of the High Rock Canyon and East Fork High Rock Canyon Wildernesses) are greatest during winter and early spring when the road through the Canyon is closed to motorized use and visitation is least.

Primitive and Unconfined Recreation

Refer to Section 3.7.4.8

Special Values

The dramatic scenery of the numerous deep steep walled canyons of these wilderness areas with year-round water and green meadows set them apart from all other wilderness areas in the region. On even the hottest days of August, visitors can sit in the shade of these narrow canyons and watch any number of wildlife visit these lush oasis in the desert.

The scenery of the three wilderness areas provides the backdrop for unique historical and cultural values. For more than 9,000 years people have visited, passed through and lived within these areas. Evidence of this history is abundant and includes prehistoric campsites, stone tools and drawings, emigrant wagon wheel tracks and inscriptions, and early ranching homestead buildings and fences.

General Management Situation

Recreation use in the actual wilderness areas is relatively light, with the heaviest use occurring during the late summer and fall hunting seasons. Hunting guides also operate in the areas and often camp along the boundaries and hike into the areas to hunt. No maintained trails exist within the areas, however closed routes and wild horse trails provide paths that facilitate foot and horse travel. While recreation use is relatively light, Little High Rock Canyon is mentioned in several guidebooks and websites as a good place to hike and backpack. The citizen-proposed Desert Trail also passes through High Rock Canyon and a portion of the East Fork High Rock Canyon Wilderness.

Unauthorized motorized access continues in the area but has been greatly reduced with signing and the reclamation of closed vehicle routes. A total of seven "cherry stems" (two in High Rock Canyon, two in the East Fork High Rock Canyon, and three in Little High Rock Canyon) are located in the wilderness areas.

3.7 Additional Affected Resources

In addition to the critical environmental elements, the following resources or uses are present and affected by one or more alternatives: fire management, rangeland resources and uses, recreation, socio-economic values, special status species, soils, visual resources, vegetation, and wildlife.

3.7.1 Fire Management (Wildfire, Hazardous Fuels, and Emergency Stabilization and Rehabilitation)

The Calico Mountains, High Rock Lake, Black Rock Range, Pahute Peak, Black Rock Desert, North Jackson Mountains and South Jackson Mountains Wildernesses are located within the Black Rock Desert High Rock Canyon Emigrant Trails NCA and Associated Wilderness Fire Management Unit (FMU). Small areas of the Little High Rock Canyon and East Fork High Rock Canyon Wildernesses are also located within this FMU. Total acres within the FMU is approximately 1,031,000 including wilderness areas of about 625,000 acres. An FMU is an area that defines management objectives, physical characteristics, resource values and treatment actions necessary to achieve resource management objectives.

Upper elevations of the wilderness areas are dominated with sagebrush, pinyon/juniper woodlands vegetation communities. Lower elevations are dominated primarily with saltbush scrub and grass vegetation communities.

The majority of fuels within the FMU are represented by fire regimes II and IV. A natural fire regime is a general classification of the role fire would play across a landscape in absence of modern human intervention. Fire regimes are classified based on the average

number of years between fires (fire frequency) combined with severity (amount of replacement) of the fire on dominant vegetation.

Table 3-6 Fire Regime

Fire Regime Number	Frequency (years)	Severity
I	0-35	Low & Mixed
II	0-35	Replacement
III	35-100	Mixed
IV	35-100	Replacement
V	200+	Replacement

Cheatgrass invasion alters fire frequency from historic regime intervals to shorter cycles of 5 years or less (Note fire history below).

A fire regime conditions class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). This classification is based on a relative measure describing the degree of departure for the natural (historical) fire regimes. Over 89% of the FMU is represented by condition class 3, having a high departure from the central tendency of the natural (historic) regime. However parts of the Black Rock Range and near Pahute Peak have condition class 2 areas, representing a more moderate departure from the natural or historic regime.

Fire History

The wildland fire season generally runs from mid-May through mid-September. Regionally, lightning causes about 90 percent of the fires that occur; humans cause the rest of the fires. Lightning caused fires occurred most frequently within the South Jackson Mountains Wilderness, and nearly all naturally caused fires within the Planning Area received active suppression. To a large extent the wilderness areas contain discontinuous fuel types and steep terrain that prevent fires from getting large. During the past 20 years, only two fires have been larger than 100 acres (excludes fires within the FMU but outside of wilderness areas). When wildfire occurs, suppression resources are dispatched from the Susanville Interagency Fire Center in Susanville, California or the Central Nevada Interagency Fire Center in Winnemucca, Nevada. Fires are managed utilizing the Wildland Fire Decision Support System (WFDSS). This system takes into consideration strategic objectives from fire management plans and land use plans, strategic courses of action to achieve objectives, validation, and rationales for decisions. The goal of initial fire attack is to suppress all wildfires at minimal acres burned within Category A areas. In Category B areas fires are managed based on less than full suppression or for resource benefit. This also applies to wilderness areas. However, minimum impact suppression techniques consistent with the minimum tool standard must be used. There are no wildland-urban interface areas within the wilderness planning area. Fire suppression objectives for the FMU are; to provide for firefighter and public safety, minimize impacts to the Lassen-Applegate Historic Trail Corridor and other historic cultural resources in the FMU minimize impacts to the wilderness values of naturalness and opportunities for solitude/primitive recreations and other special features found in the

wilderness areas. Other objectives include minimize impact to high value habitat (greater sage-grouse, LCT, desert dace), and keep wildfires from burning into adjacent functioning ecosystems (those without significant cheatgrass invasions). Typical suppression resources might include hand crews, engines, air tankers, and helicopters.

Fuels

Prescribed fire has rarely been used in the planning area. Prescriptions have primarily been for meadow restoration in High Rock, East Fork High Rock and Little High Rock canyons. The total area burned with prescribed fire since 1992 is 455 acres averaging less than 30 acres per year. Burn block sizes range from less than 5 acres to about 100 acres. Monitoring indicates that timing of burns and existing native grass density are the most important factors in meeting post burn objectives of replacing dense brush stands with healthy native grass stands. Fall or early winter burns and native grass density of greater than 15 plants in a 100ft line transect met recovery objective better than spring burning or lower grass densities. Fuels reduction projects using hand thinning of grass and brush have infrequently occurred to protect historic structures.

Emergency Fire Stabilization and Rehabilitation (ES&R)

There have been no ES&R treatments implemented within the wilderness areas. Future rehabilitation activities may include seeding with native or nonnative plants, noxious weed control, erosion control, and building of protective fencing to exclude livestock. When wildfires burn at lower elevations or in areas at risk of conversion to cheatgrass, emergency fire rehabilitation is undertaken to prevent the spread of cheatgrass.

3.7.2 Paleontology

No systematic field survey has been conducted for paleontological resources in the planning area. However, independent researchers in and near the planning area have identified numerous paleontological localities. A variety of large mammal remains and fossils (including those from mammoths and ancient camels) have been located in the Black Rock Desert, High Rock Lake, and South Jackson Mountains Wildernesses. Remains have also been found in the High Rock Canyon area. Petrified wood occurs in several locations throughout the wilderness areas in the central and western portion of the planning area. Ongoing research indicates a variety of yet undiscovered resources exist within the wilderness areas.

Although none of the paleontological resources identified in the proposed management area qualify for special designations such as registry with the U.S. Geological Survey, national historical landmarks, or National Park Service national natural landmarks, there are known deposits of great scientific interest present, as well as areas with potential for substantial and significant deposits.

3.7.3 Rangeland Resources and Uses

Allotments

Sixteen grazing allotments (10 managed by the Winnemucca District Office and 6 managed by the Surprise Field Office) overlap the 10 designated wilderness areas.

It is anticipated the numbers of livestock permitted to graze within the wilderness areas would remain approximately at the levels listed in Table 3-7. Before any increase in the numbers of livestock or AUMs can be made, it must be determined conclusively that such increases could be made available with no adverse impact on wilderness values.

Permits for livestock operations can only be issued for those areas where grazing was established at the time of wilderness designation. Map 2-5 of the NCA RMP illustrates those portions of the Black Rock Desert Wilderness where livestock grazing was not established at the time of designation. Grazing was established within all other portions of the wilderness areas at the time of designation.

As stated in the NCA RMP, grazing within those portions of the High Rock Canyon, East Fork High Rock Canyon, and Little High Rock Canyon Wildernesses within the Massacre Mountain and Bare allotments would not occur on a regular basis, but may occur under an approved grazing prescription developed specifically to accomplish the objectives of the NCA RMP.

Table 3-7 Authorized Grazing

Allotment (Administering Field Office)	Activity Plan Decision Date	Total Acres	Acres within wilderness (wilderness areas)	Percent within planning area (wilderness)	Active Preference (in AUMs) permitted prior to wilderness designation
Bare (Surprise)	AMP/1999	201,705	17,015 (High Rock Canyon/ Little High Rock Canyon)	8.4	13,260
Bottle Creek (Winnemucca)	MUD/2000	139,388	217 (North Jackson Mountains)	0.1	3,434
Buffalo Hills (Winnemucca)	MUD /1994	473,858	(High Rock Lake (2,218)/ Calico Mountains (58,557))	12.8	4,114
Deer Creek (Winnemucca)	MUD /1998	30,851	9,195 (North Jackson Mountains/ Black Rock Desert)	29.8	754
Denio (Surprise)	AMP/1987	24,266	6,226 (High Rock Canyon)	25.7	1,542
Happy Creek (Winnemucca)	MUD /1997	99,178	6,258 (North Jackson Mountains)	6.3	3,724
Home Camp (Surprise)	AMP/2001	146,119	1,346 (High Rock Canyon)	0.9	9,088
Jackson Mountains (Winnemucca)	MUD /1994 + Stipulated Agreement	363,012	151,863 (North Jackson Mountains (11,328)/ South Jackson Mountains (54,512)/ Black Rock Desert (86,023))	41.8	8,857
Leadville (Winnemucca)	MUD /1994	57,110	19,302 (East Fork High Rock Canyon (253)/ High Rock Lake (8,975)/ Little High Rock Canyon (10,074))	33.8	1291
Massacre Mountain (Surprise)	Grazing Decision (Year?)	149,059	91,832 (East Fork High Rock Canyon (31,508)/ High Rock Canyon (43,921)/ Little High Rock Canyon (16,403))	61.6	5,825
Nut Mountain (Surprise)	AMP/	71,348	3,505 (East Fork High Rock Canyon)	4.9	4,893
Paiute Meadows (Winnemucca)	MUD/ 2003	173,622	75,117 (Pahute Peak (31,495)/ North Black Rock Range (3,909)/ Black Rock Desert (37,713))	43.3	4,299
Pine Forest (Winnemucca)	None	142,706	29,397 (Black Rock Desert)	20.6	9,700
Soldier Meadows (Winnemucca)	EA /2008	341,936	113,468 (North Black Rock Range (26,824)/ East Fork High Rock Canyon (6,611)/ High Rock Lake (47,963)/ Calico Mountains (6,437)/ Pahute Peak (25,633))	33.2	12,168
Wall Canyon East (Surprise)	AMP/2001	40,806	11,052 (East Fork High Rock Canyon)	27.1	3,215

Range Developments
Maps 2-11 show the 82 known developed springs, troughs, reservoirs, catchments, earth pits, earth tanks, wells, windmills, and associated access routes located within the wilderness areas. Existing fences and water pipelines are also shown on the maps. Of these 82 known developments, 53 are authorized through BLM permit or cooperative agreement. Of these, 25 were functioning at most recent inspection.

According to BLM policy, new range developments may be authorized only if necessary for resource protection and the effective management of those resources.

A number of barbed wire fences are located along the boundaries of or entirely within the wilderness areas. Since the time of wilderness designation, one new fence has been constructed within the North Black Rock Wilderness to administer grazing within the Soldier Meadows Allotment. In addition, several fence lines or portions of fence lines remain in portions of the wilderness areas which were either not completed or are in disrepair and are no longer needed. Fences which are no longer necessary for range management continue to be dismantled and removed from the wilderness areas.

Fences throughout the planning area require routine maintenance due to damage from wildfire, large animals, deep and drifted snow, and vandalism. Currently there are various fenceline segments which do not function properly and are in need of repair.

Visitors pursue a wide variety of dispersed recreation activities within the plan area. Among the most distinctive values of the area that attract people are the scenic vistas, solitude, historic trails, world class hunting opportunities and the associated opportunities for primitive recreation in the vast and largely undeveloped region. This section identifies the existing uses and opportunities for undeveloped and unconfined recreation.

3.7.4 Recreation

3.7.4.1 Visitor Use
The planning area provides excellent opportunities for primitive recreation and especially solitude since it occupies one of the most remote parts of the contiguous 48 states. The closest urban center is Reno, NV, which requires a three to six hour drive, depending on the wilderness area. Year round visitation to the Planning Area is possible but uncommon in part due to snow which is common at the higher elevations in winter and temperatures of 90-100 degrees Fahrenheit at lower elevations in summer. Extreme temperatures and remoteness combined with the need for sturdy equipment and strong backcountry skills limits visitation. Visitation and activity types have not been systematically tracked; therefore visitor use estimates are based loosely upon mechanical traffic counting devices and incidental observations by Bureau staff. The entire NCA and wilderness is estimated to receive just under 260,000 recreation visits annually, but the wilderness areas are estimated to receive less than 10% of that use.

Commercial guides and outfitters are permitted by the Bureau to operate within the wilderness and on designated routes within the plan area. Commercial uses include hunting, hiking, and 4WD (on boundary roads and cherrystems) tours. In 2009, 16 outfitter/guides were authorized by the Winnemucca District. However, over 80 hunting outfitters are permitted state-wide through other BLM field offices and are authorized to conduct guided hunts with the Planning Area as well. The State of Nevada controls hunting seasons and the number of big-game hunting permits issued. The actual commercial use within the wilderness areas associated with these permits is largely determined by tag quotas established by the Nevada Department of Wildlife.

3.7.4.2 Recreation Activities

The following recreation activities account for the majority of use in the planning area:

Hunting and Wildlife Viewing

The planning area provides opportunities for both consumptive and non-consumptive wildlife-dependent recreation activities. Unique opportunities for viewing abundant herds of wild horses and burros are available virtually throughout the planning area. Many game species provide opportunities for both wildlife observation and hunting. During the late summer and fall, hunters use the Planning Area for its abundant wildlife resources. Species hunted within the Planning Area include California bighorn sheep, mule deer, pronghorn antelope, mountain lion, coyote, rabbit, and upland game birds (chukar and sage grouse). Trapping is also allowed for bobcat and coyote. The upland game bird hunting season, which begins in October and continues through January, attracts the greatest number of recreational users to the plan area, due to the abundance of chukar. Much of this use is day-use, which is concentrated on the fringe of the wilderness, particularly in the vicinity of established camping areas, small game guzzlers and maintained County roads. Occasional backcountry use of the wilderness is also experienced during hunting season.

Hiking and Equestrian Use

The differences in elevation and topographic variety offer outstanding opportunities for day use hiking and horseback riding opportunities. The availability of water from springs and perennial creeks in some areas enhances day-hiking and horseback riding opportunities. The proposed Desert Trail, a hiking corridor that extends from Mexico to Canada, weaves through the planning area. Several high mountain peaks and canyons in each wilderness area also offer destinations for hikers.

Overnight use with horses or pack stock is rare due to most areas lacking sufficient dependable water for overnight stays. Overnight horse use is further complicated by the presence of wild horses that roam freely throughout the plan area, which can harass or even run off domestic horses leaving a rider horseless and on foot by morning. Most equestrian users prefer day riding and camping along wilderness boundaries, where they can set up temporary portable corrals and haul sufficient water (to avoid contact with water sources used by wild horses and potential disease or parasite transmission). Despite the challenges to overnight use, the planning area is large enough to offer some locations that are suitable for hiking and equestrian users.

Camping
Most visitors camp in established primitive camping areas adjacent to the wilderness area boundaries or at nearby recreation sites. Popular options include Soldier Meadows Hot Springs and Stevens Camp Cabin, and dispersed campsites along maintained county roads, which may be accessible by passenger vehicles and can accommodate travel trailers, ATV trailers and horse trailers. Visitors use these areas as base camps, taking trips each day to hunt or hike in the wilderness or tour along adjacent access routes. Since recreation areas and roads outside the plan area support the majority of camping, the designated wilderness shows little evidence of camping and associated impacts.

Off-Highway Vehicle Touring
Off-highway vehicle (OHV) touring, including use along historic trail segments, is popular within the planning area outside of wilderness along boundary roads and vehicle access routes. Whether hiking, hunting, rockhounding or viewing wild horses, access to the area requires high-clearance and sometimes four-wheel drive, which makes getting there part of the experience.

Rock and Mineral Collection
Rock and mineral collecting is a popular activity locally within the planning area. Most opportunities are for collection of small quantities of common variety minerals and petrified wood.

3.7.4.3 Wilderness Access

The plan area is accessed by primitive, motorized routes and maintained gravel roads in some areas. Many of the wilderness boundaries are defined by these primitive routes. In addition to the boundary roads, 33 vehicle access routes were designated to provide access to the interior wilderness lands. Trails created by ranching operations or by motor vehicle use prior to designation exist throughout the wilderness areas. Active restoration efforts have greatly reduced the quantity of routes visible in wilderness, thereby reducing illegal motorized use. However, several existing routes continue to receive motorized trespass which impacts naturalness and opportunities for solitude.

The numerous roads and “cherrystem” routes outside wilderness boundaries which provide access to the wilderness areas receive minimal maintenance and use. These routes are narrow, rugged, and often have vegetation growing up to and between the vehicle tracks. The majority of these routes are only visible from ridgelines or from certain angles at higher elevations and would probably go unnoticed to the casual observer if not for the occasional dust trail from a passing motorist. Appendix F lists these routes and describes their length and the types of access they are maintained to provide.

Access to some portions of all ten of the wilderness areas is challenging due to the lack of public easements across private lands. Future access may be further limited at the discretion of the land owners.

3.7.4.4 Visitor Information/Interpretive Opportunities

Visitor information is available outside the Planning Area from the Bureau, the State of Nevada, and non-profit organizations at various internet websites, administrative offices, local businesses, a visitor contact station in Gerlach, and information kiosks at primary NCA access portals. Information kiosks within the Planning Area are located at the upper and lower end of High Rock Canyon. Some private visitor information has also been published or posted on the internet. Two interpretive plaques are located within the planning area at the Shoshone Mike and the Lassen-Clapper murder sites, one of which is located within designated wilderness.

3.7.4.5 Visitor Facilities

Very few facilities exist within the planning area. No maintained trails exist within the area, but closed vehicle routes and wild horse trails provide paths that facilitate foot and horse travel. Visitor facilities located outside of the planning area provide camping locations and staging areas for a majority of the wilderness users.

3.7.4.6 Visitor Use Regulations

Supplemental rules developed through the NCA RMP apply to recreation activities within the Plan Area. These include designated campsite use, rock climbing restrictions and seasonal motorized use restrictions within High Rock Canyon. All vehicle use is limited to designated routes outside of wilderness and areas within wilderness area closed to all motorized use. Other regulations limit the location and amounts of petrified wood and other common variety minerals which may be removed (Refer to 43 CFR 8365.1-6).

3.7.4.7 Recreation Management Zones

The NCA RMP divided the NCA into three distinct geographic zones when defining and discussing recreation settings. All of the areas within the Wilderness Plan are part of the Wilderness Zone. Descriptions of the recreation zones can be found in Appendix C.

3.7.4.8 Opportunities for Primitive or Unconfined Recreation

The following section describes the specific resources and opportunities for primitive and unconfined recreation within the planning area. The planning area is broken down by geographic area to aid the description.

The Jackson Mountains (including the North and South Jackson Mountains Wildernesses)

The west facing side of the South Jackson Mountains Wilderness provides many interesting and rugged canyons to hike, as well as access to King Lear Peak. King Lear Peak is a popular destination and provides opportunities for rock scrambling and technical climbing. The peak is mentioned in several guidebooks for the Great Basin. The Jackson Mountains also have areas of karst (limestone) formations that contain several caves that receive some recreational use from local and regional cavers. The Red Butte mining district still shelters evidence of past mining activities including several historic cabins. The Jackson Mountains also offer opportunities for fishing in Jackson, Mary

Sloan and Bottle creeks. Two maintained County roads provide easy access to both wilderness areas.

Black Rock Desert (including the Black Rock Desert Wilderness)
While outstanding opportunities for hiking and equestrian use exist, actual use is rare due to the harsh environment. Extreme temperatures, lack of water, topography, exposure to the elements, and playa bog holes along the Quinn River provide little appeal to most visitors. Limited opportunities for floating in small tubes or kayaks and waterfowl hunting are available on the Quinn River seasonally some years, when snowmelt runoff provides sufficient water.

The Black Rock Range (including the North Black Rock Range and Pahute Peak Wildernesses)
The Black Rock Range provides some of the best opportunities for primitive recreation activities in the Planning Area. Game species are plentiful due to abundant vegetation and water, making this area one of the most popular for hunting. Colman Creek and other canyons in the area provide excellent day hiking and backpacking opportunities due to the presence of perennial streams and vegetation that offer shelter and water for backpacking and horse packing. Cross-country and backcountry skiing and snowshoeing are also possible during the winter, but drifts and poor road conditions make access to areas with adequate snow cover very difficult. Colman creek and the North Fork of Battle creek support a reintroduced population of the threatened Lahontan Cutthroat Trout, which provides unique opportunities for catch and release fishing. Excellent camping opportunities are available immediately adjacent to the wilderness areas within the Lahontan Cutthroat Trout Instant Study Area along the aspen lined perennial creeks. Other unique resources of the Black Rock Range include historic tree carvings (arborglyphs), and spectacular views from cliffs overlooking Summit Lake. Popular hiking opportunities include Big Mountain, one of the highest points in the NCA, and a portion of the citizen-proposed Desert Trail that traverses the high ridgeline and passes by historic sites, such as the Lassen-Clapper murder site.

The Calico Mountains (including the Calico Mountains and High Rock Lake Wildernesses)
This area provides unique opportunities for photography due to the colorful geologic formations which exhibit the vibrant colors from which this area receives its name. The Calicos are also popular for rockhounding for those seeking petrified wood, fire opals, and wonder rock. Other attractions include Fly Canyon, which is popular for day hiking and for its historic trail resources and Box Canyon, which the citizen-proposed Desert Trail passes through. A traverse through Fly Canyon provides opportunities for technically challenging rock scrambling and climbing through high walled, narrow canyons and extraordinary potholes that were created by an ancient stream. A small but important portion of the Applegate National Historic Trail also passes through Fly Canyon. Historic resources include emigrant inscriptions and the Fly Canyon wagon slide, both of which attract historic trail enthusiasts. Access to the Calico Mountains is

available from maintained County roads, which makes the associated wilderness areas among the most easily accessible within the Planning Area.

The High Rock Canyon Complex (including East Fork High Rock Canyon, High Rock Canyon and Little High Rock Canyon Wildernesses)
This wilderness complex includes an important segment of the Applegate National Historic Trail and part of the citizen-proposed Desert Trail, both of which run through High Rock Canyon. In addition to the typical recreation uses occurring within other wilderness areas, many people visit the High Rock Canyon Wildernesses to experience and enjoy the rich history of the region. Attractions include emigrant inscriptions and axle grease writings, the historic Shoshone Mike murder site, as well as historic structures and other items marking sites of early homesteading. OHV touring on boundary roads is especially popular due to the high risk and challenge associated with the canyon and the potential for long loop tours using boundary roads and other roads both inside and outside of the planning area. An abundance of perennial springs and streams, bighorn sheep, and variety of raptor species, combined with the spectacular canyon settings, makes this area popular for hiking, hunting, camping, equestrian use, and viewing wildlife and wild horses.

3.7.5 Social Values and Economics

The Black Rock-High Rock area encompasses portions of Humboldt, Pershing and Washoe Counties in Nevada. Management actions considered in this plan could result in changes in countywide socioeconomic conditions. Socioeconomic variables that could be affected by alternative management actions include employment and income.

The 2000 population of Pershing, Humboldt and Washoe Counties ranked 11th, 9th, and 2nd, respectively, among the 17 Nevada counties. Between 1990 and 2000, population decreased in Pershing County and increased in Humboldt and Washoe. Projection for future populations to 2025 indicated slight declines in Pershing and Humboldt County populations of about 4% and a 50% increase in Washoe County's population. (NV State Demographer, 2007) The population density of Pershing, Humboldt, and Washoe Counties were 1.1, 1.7, and 53.5 persons per square mile, respectively. The population density of Washoe County was much greater and the population density of Pershing and Humboldt Counties were much less than Nevada statewide average of 18.2 persons per square mile. (U.S. Bureau of the Census 2004a, b.)

Total employment in the three counties was 181,100 in 2000 with Washoe County representing 94.7% of the total. Pershing and Humboldt Counties had 1.3 and 3.8 % of the total employment respectively. This reflects employment provided in the Reno-Sparks area of Washoe County and the rural character of Pershing and Humboldt Counties. During the 1990 to 2000 period, the education, the health and social services, the arts, entertainment, and recreation, and the public administration sectors experienced the greatest growth in employment. Conversely, employment in the agriculture, mining, manufacturing, and transportation sectors generally declined. Although not reflected in the 2000 data, mining has made recent gains.

The primary direct economic values associated with the Planning Area are from spending in the local communities by recreation users, livestock grazing operations, and big-game guide and outfitter operations authorized by the Bureau. Management activities such as wilderness restoration projects, monitoring activities, and fire suppression also contribute to local economies through both full-time and seasonal employment opportunities. When compared with the overall economic impact from recreation, livestock operations, mining, and public land management in the surrounding area, the relative direct economic value of the wilderness areas is small.

Other indirect economic values are from general ecosystem function maintained through management of the Planning Area as wilderness which contributes to clean air, clean water, and public health.

3.7.6 Special Status Species

Special status species of vertebrates (such as birds, fish, mammals) and invertebrates (such as mollusks, insects) occur on public land within the planning area. Special status designations are signed for many reasons including limited distributions, habitat losses resulting from environmental impacts suspected, or documented population declines or some combination of these factors. The USFWS lists endangered species, threatened species and species of concern for the planning area. All three listings are used to prioritize survey efforts by the BLM. The opinions of private organizations, such as the Nevada Natural Heritage Program, are considered in the process of determining lists.

California Bighorn Sheep (*Ovis canadensis californiana*) (BLM Sensitive)
Bighorn sheep typically prefer remote and complex mountainous terrain where adequate water is available. Because of spatial separation in habitat preferences among deer, pronghorn, wild horses, cattle, and bighorn sheep, forage competition in this planning area is generally minimal (Ganskopp 1983). Known areas of overlapping cattle and bighorn sheep use have not presented issues of forage availability or disease transmission requiring resolution. Domestic sheep grazing/trailing permits do not occur within currently occupied bighorn sheep range, so the risk of disease transmission between domestic sheep and bighorn sheep is limited. Disease transmission between bighorn sheep and domestic sheep can result in massive bighorn sheep losses. Due to a number of factors, bighorn sheep were nearly eliminated from northern Nevada by 1915. Existing populations are the result of numerous NDOW-initiated reintroductions and supplemental releases that began as early as 1963. Data for the NCA and associated wilderness areas all show excellent fall recruitment of lambs, which is indicative of bighorn sheep populations that are healthy and viable. The bulk of their occupied range is associated with the canyon lands and rim rock areas of mountain ranges in the planning area.

3.7.7 Vegetation

Distribution of vegetation types within the planning area can be attributed primarily to a combination of climate, soils, and topography. Water availability and soil composition are particularly important. Altitude changes between valley floors and plateau tops also affect vegetation; saline and alkaline soils greatly influence plant growth. The following section

describes the vegetation resource within the planning area and its current biological/physical condition under existing management. The planning area supports vegetation typical of the Great Basin. The extremes of climate, elevation, exposure, and soil type all combine to produce a diverse growth environment for a wide variety of plants. The primary plant communities of the planning area are desert sink scrub, saltbush scrub, sagebrush scrub, Utah juniper woodland, and subalpine woodland. Secondary plant communities include broadleaf riparian scrub, dune, and meadow. Approximately 25 percent of the planning area is the playa, which is barren except for isolated occurrences of vegetation. Salt-tolerant shrubs such as greasewood grow in edge-area dunes, mounds, and sand sheets. The deep soils along lower slopes (3,800 to 4,200 feet) on the flats adjacent to the playa support sagebrush and black-greasewood, shadscale, bud sagebrush, and Bailey greasewood dominate the alluvial fans at elevations of 4,200 to 5,000 feet. Big sagebrush types dominate mountain sites up to about 5,500 feet. Mountain big sagebrush, low sagebrush, bitterbrush, mountain mahogany, and aspen are found at elevations above 5,500 feet.

Desert Sink Scrub Desert sink scrub occurs in valley bottoms throughout the planning area. Black greasewood is an indicator of a high water table and is closely associated with alkali meadows and dry bottomland. This vegetation type mainly produces less palatable shrubs and few grasses. Annual precipitation in the valley bottom area is 3–8 inches. Plants growing here are big sagebrush, shadscale, gray molly kochia, alkali rabbitbrush, seepweed, alkali sacaton, inland saltgrass, Indian ricegrass, bottlebrush squirreltail, and bluegrass. This plant community has been mapped with three associations:

1. *Allertolfea occidentialis* (iodine bush) association
2. *Sarcobatus verimiculatus* (black greasewood) association
3. *Sarcobatus verimiculatus-Artemisia tridentata* (greasewood-sagebrush) association.

Saltbush Scrub This is the second most dominant vegetation type in the planning area. The ecological sites associated with this type occur mainly in the valleys on alluvial fans and up into the hills in the southern portion of the planning area. Precipitation ranges from three to eight inches. In these areas, the vegetation is dominated by shadscale, bud sagebrush, Bailey greasewood, Douglas rabbitbrush, four-wing saltbush, and winterfat. Perennial grasses include Indian ricegrass, bottlebrush squirreltail, needle-and-thread, sand dropseed, and desert needlegrass. The saltbush community has been divided into 10 associations:

1. *Atriplex gardneri falcate* (sickle saltbush) association
2. *Atriplex canescens* (four-wing saltbush) association
3. *Tetradymia spp. -Atriplex canescens* (Horsebrush-four-wing saltbush) association
4. *Atriplex confertifolia-Artemisia spinosa* (shadscale-budsage) association
5. *Atriplex confertifolia-Sarcobatus vermiculatus* (shadscale-greasewood) association
6. *Atriplex confertifolia-Lycium cooperi* (shadscale-wolfberry) association
7. *Atriplex confertifolia* (shadscale-saltbrush) association
8. *Atriplex torreyi* (Torrey's quailbush)
9. *Grayia spinescens* (spiney hopsage) association

10. *Krashenninkovia lanata* (winterfat) association.

Sagebrush Scrub Plant Community Sagebrush scrub is the most common vegetation type in the planning area. Sagebrush is not as tolerant of saline soils as saltbush. Big sagebrush occurs mainly in the mountains and hills and is less common in the southern half of the planning area, which is dryer and warmer. This community is dominated by three subspecies of big sagebrush (*Artemisia tridentate* ssp. *tridentata,* ssp. *wyomingensis, and* ssp. *vaseyana,)* and ssp. *lahontensis).* The height of this scrub is between 1 and 6.5 feet tall and total cover can range from 10 percent on degraded sites to nearly 60 percent. More commonly, shrub cover is about 25 percent of the ground while forbs and grasses cover another 25 percent. While sagebrush often forms pure stands, more commonly it is associated with many other shrub species. Rubber and sticky leaf rabbitbrush are common early successional species following fires. Spiny hopsage frequently occurs at the lower elevations and is part of the transition at lower elevations with the saltbush scrub community. At higher elevations bitterbrush is a common shrub associated with sagebrush. Common grasses in the sagebrush scrub include squirreltail grass, Great Basin wildrye, Sandberg bluegrass, beardless wheatgrass, bluebunch wheatgrass, Thurber needlegrass, and needle-and thread grass. Cheat grass is a major problem in this community after fires. Six associations of sagebrush scrub have been mapped:

1. *Artemisia arbuscula* (low sagebrush) association
2. *Artemisia tridentata tridentata* (basin big sagebrush) association
3. *Artemisia tridentata wyomingensis* (Wyoming sagebrush) association
5. *Artemisia tridentata vaseyana* (mountain sagebrush) association
6. *Artemisia arbuscula longicaulis* (Lahontan sagebrush) association.

Utah Juniper Woodland Utah juniper woodlands occur in the mountains and are more common at higher elevations. Juniper woodlands are most prominent in the North and South Jackson Mountain wildernesses with approximately 29,000 acres of the community at higher elevations. Understory vegetation is sparse and usually includes big sagebrush, bitterbrush, green Ephedra, desert snowberry, Utah serviceberry, mountain mahogany, rabbitbrush, rubberweed, Indian ryegrass, needlegrass, bottlebrush squirreltail, Sandberg bluegrass, and Canby bluegrass. Average annual precipitation is above 12 inches. Junipers are most common on hillsides and well-drained soils at moderate elevations. Juniper occurs at lower elevations in pure stands. The only association is *Juniperous osteosperma* (Utah juniper).

Alkali Meadows and Bottomlands Alkaline meadows occur on valley bottoms with high water tables throughout the planning area. Small meadows are rare in the sagebrush community. Existing meadows have experienced heavy livestock grazing and are now dominated by low palatable plants such as western blue-flag and thistle. Meadows have up to 85 percent grass. Annual precipitation is between three and eight inches. Plants growing here include inland saltgrass, alkali sacaton, Baltic rush, Great Basin wildrye, black greasewood, rubber rabbitbrush, and alkali rabbitbrush. Forbs are generally more common than annuals with the most common genera including locoweed, Indian paint brush, buckwheat, lupine, and beardtongue. Alkaline

seeps and springs and playa edges are other habitats dominated by saltgrass. The only association is *Distichlis spicata* (inland saltgrass alkaline meadow) association.

Riparian
Typical riparian vegetation species include aspen, willow species, wild rose, sedge species, rush species, and Kentucky bluegrass. Riparian areas within the sagebrush scrub are usually dominated by species of willow (Salix). In well-developed riparian areas, gallery forests of Fremont cottonwood occur with small thickets of western chokecherry, blue elderberry, and buffalo-berry. Only two associations of this community have been mapped:

1. *Salix* (willow riparian) association
2. *Shepardia argentea* (silver buffaloberry) association.

The lower elevation limits of this community in northern and central Nevada are determined by the presence of saline soils in the valley bottoms. Sagebrush seedlings are not tolerant of saline conditions but sagebrush sometimes descends into the blackbrush scrub along large washes with deep sandy soils.

Freshwater Marsh
Emergent water plants dominate along the edges of manmade ponds and drainage ditches. Such areas are usually dominated by cattails (*Typha* spp.). Cattails can also occur in natural environments along slow moving streams. The only mapped marsh association is Cattail Freshwater marsh.

3.7.8 Wild Horses and Burros

Wild horses or burros are managed within Herd Management Areas (HMAs). There are nine HMAs associated with the 10 wilderness areas covered by this plan. Management of horses and burros within each HMA is determined through Multiple Use Decisions/ Allotment Plans and Herd Area Management Plans. Gathers regularly occur on a periodic basis to reduce herd populations to healthy levels. Capture techniques used for horse gathers generally consist of helicopter-driven trapping and/or roping from horseback in addition to normal traps. Capture sites are located in previously disturbed areas; sage-grouse leks, riparian areas, cultural resource sites, and wilderness areas are avoided. All gather sites are subject to the WH&B Gather Site Cultural Review and Inventory Guidelines.

During gathers, helicopters are likely to fly over wilderness and herd horses across them. Helicopters would not be permitted to land in wilderness except in cases of emergency. BLM and contract personnel participating in gathers may also drive along access and cherry-stemmed roads to accomplish their objectives.

3.7.9 Wildlife

The habitat and wildlife within the planning area are representative of northern Great Basin flora and fauna. The planning area has an unusual mosaic of diverse habitat types within a relatively small area. Sagebrush, with patchy grasslands, provides year-long habitat for mule deer (*Odocoileus hemionus),* California bighorn sheep (*Ovis canadensis californiana)*, and pronghorn antelope (*Antiliocapra americana)*. Aspen (*Populus tremuloides)* and mountain mahogany *(Cercocarpus ledifolius)* provide nesting sites for a variety of bird species more commonly found in more heavily wooded areas. Large and small rim rock complexes in canyons and along mountain ridges provide cliff and rock slope habitats that are primary nesting sites for swallows, swifts, golden eagles (*Aquila chrysaetos*), prairie falcons (*Falco mexicanus*), turkey vultures (*Cathartesaura*), and numerous species of hawks. These rim rocks also provide escape cover for bighorn sheep, denning sites for mountain lions (*Felis concolor*) and bobcats (*Lynx rufus*), and year-long homes for many small mammals including ground squirrels, wood rats (*Neotoma* spp.), rabbits and marmots (*Marmota flavivenyris*). Abandoned mine shafts and adits, along with some of the natural caves, provide potential and probably occupied habitat for numerous species of bats. Intensive bat inventories have not been completed. Water sources are important to the location and survival of plants and animals within the planning area. Seeps and springs provide water and meadow habitats of green lush vegetation during hot, dry summer months to various wildlife species, including greater sage-grouse (*Centrocercus urophasianus*). Riparian habitats are used extensively by wildlife, including neotropical and migrant bird species in the spring and fall months, including hummingbirds, finches, warblers, thrushes, and orioles. Small, shallow depressions and playa areas filled from precipitation provide seasonal habitat for resident and migrant waterfowl and shorebirds including American avocet (*Charadrius vociferous*), black-necked stilt (*Himantopus mexicanus*), long-billed curlew (*Numenius americanus*), Canada geese (*Branta canadensis*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), cinnamon teal (*Anas cyanoptera*), northern shoveler (*Anas clypeata*), redhead (*Aythya americana*), canvasback (*Aythya valisineria*) and tundra swan (*Olor columbianus*). The small streams and spring outlets provide wet meadow and stream-side riparian habitats used by a great variety of species. Because of the limited amount of systematic survey data on record for many species, primary emphasis in this document is placed on habitat relationships as described in "Wildlife Habitats in Managed Rangelands" (Maser et al. 1984). Where applicable, other detailed studies and more current research findings were used. Very little information is available on invertebrates (insects, snails, etc.) Species not specifically discussed in this plan are nevertheless important and contribute to the diversity and health of plant and animal communities on the public land. Many species fill ecological roles that are important but yet not fully understood.

The BLM manages lands as wildlife habitat. The Nevada Division of Wildlife (NDOW) manages wildlife populations. The BLM consults and cooperates with the NDOW and the USFWS on wildlife species management. NDOW sets population and species management goals for both game and nongame species within the state. The USFWS provides sensitive species lists and provides biological opinions on selected species. The BLM collaborates with NDOW in helping to meet these goals by providing an appropriate amount and quality of habitat on public land, consistent with multiple use management. The wildlife population data presented in this

document are estimates from NDOW. The data are suitable for analysis purposes but the locations and numbers of animals can be expected to vary somewhat throughout the life of this plan as a result of population cycles, weather, and many other factors.

Fish and aquatic habitat
Numerous springs systems exist within the wilderness planning area, which range from cold (near or below mean air temperature), thermal (5-10 oC above mean air temperature), or hot (more than 10 oC above mean air temperature) (see Sada et al. 2001). Only a small portion of these springs have been inventoried, in addition few springs systems have been surveyed to determine riparian condition. Current data indicates the presence of at least eight species of Hydrobiid snails within the NCA planning area.

Fish Species Present Within the WMP Planning Area
Portions of several streams within the Planning area are either occupied or are potential habitat for Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi).* A more detailed discussion can be found in Section 3.6.6 Threatened or Endangered Species.

Upland Game Bird Species
Upland game bird species within the planning area include greater sage-grouse (*Centrocercus urophasianus*, chukar partridge (*Alectoris graeca*), Hungarian partridge *(Perdix perdix)* valley quail (*Lophortyx californicus*), and mourning dove (*Zenaidura macroura*). Chukar partridge and Hungarian partridge are established exotic species currently managed by the Nevada Department of Wildlife (NDOW) within the planning area. They are considered to be naturalized species within the planning area. Management of these species would continue as outlined the NCA RMP and the Memorandum of Understanding between the BLM and NDOW.

The quality of upland game bird habitat depends on the availability of mixed shrubby and herbaceous vegetation types for nesting, foraging, and shelter. Riparian habitat plays an important role as a source of food, water, and shelter for most species. Current habitat conditions for chukar and mourning dove are generally considered to be in good quality and are limited by annual weather conditions. Valley quail habitat is variable and is generally dependent on the quality of riparian areas.

Greater sage-grouse habitat is addressed in 3.6.5 Threatened and Endangered Species.

Mule Deer
Mule deer (*Odocoileus hemionus*) are widespread, typically associated with middle to upper elevation areas that support a wide variety of sagebrush, mountain shrubs, quaking aspen, juniper, and herbaceous vegetation. Mule deer also use lower elevations during years when heavy snowfall depth forces them to move. Mule deer are frequently associated with meadow and riparian habitat and tend to be present yearlong where public land adjoins cultivated farmland. Deer migrating from higher elevations to lower elevations increase populations of some local herds in winter. Based on NDOW inventories, mule deer numbers are currently low relative to historic numbers and state management objectives. Drought, severe winters, and

biological factors have contributed to these low numbers. Data from spring fawn surveys indicate a stable to increasing deer population for the planning area. Deer are generally classified as browsers, and forbs and shrubs make up the bulk of their annual diet. The diet of mule deer is quite varied, however, and the importance of various classes of forage plants varies by season. For example, in late fall and early spring, new growth on grass especially at meadows may constitute an important part of their diet in some areas because it is highly palatable, nutritious, and abundant. In winter, especially when grasses and forbs are covered with snow, the entire diet may consist of shrubby species. Tall shrubs and trees are very important for food and cover. Woodland and rangeland management actions all have the potential to influence mule deer cover and forage. Healthy quaking aspen, juniper, mountain shrub, and sagebrush communities are all important tall cover habitats for mule deer. Meadows and riparian areas provide succulent forage and water, especially during the fall and summer.

Pronghorn Antelope

Pronghorn antelope (*Antiliocapra americana*) are distributed throughout much of the planning area. During the summer, pronghorn antelope are widely distributed throughout valleys and mountain foothill habitats. They are associated with sagebrush and shadscale habitats with low structure. Data indicates that pronghorn populations are stable to expanding, which indicates viable and healthy herds. Rangelands with a mixture of grasses, forbs, and shrubs provide the best habitat for pronghorn antelope (Yoakum 1972). The sagebrush community is used for both cover and forage. BLM livestock water developments have allowed pronghorn antelope to expand into formerly unoccupied areas. Lack of water at natural or developed sites can be a serious problem during periods of drought.

Cougar

Cougar (*Felis concolor*) are present throughout the planning area. NDOW data indicate that cougar populations are stable within the planning area.

Raptors

Raptors (predatory birds such as hawks, eagles, owls, and falcons) can be found throughout much of the planning area. Local areas provide exceptionally high-quality raptor habitat and support high-density breeding populations. The High Rock Canyon is a good example of a high-density raptor-breeding habitat on public land. Common breeding species include the red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), golden eagle (*Aquila chrysaetos*), northern harrier (*Circus cyaneus*), great horned owl (*Bubo virginianus*), and longeared owl (*Asio otus*). Other less common breeders that may be found locally include the ferruginous hawk (*Buteo regalis*) and burrowing owl (*Speotyto cunicularia*). Nesting habitats are found in Utah juniper, quaking aspen, and volcanic ledges and buttes. Prey species are more likely to be available for a wide range of raptors when plant communities are structurally diverse and support mixtures of grasses, forbs, and shrubs. Most of the breeding species also winter within the planning area. Rough-legged hawks (*Buteo lagopus*) winter in the area but are not known to nest.

Waterfowl, Shorebirds, and Wading Birds

Approximately 70 species of birds use the area's few wetlands during migration and as breeding habitat when surface water is present. Representative breeding species include the Canada goose (*Branta canadensis*), cinnamon teal (*Anas cyanoptera*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), American avocet *Recurvirostra americana*), Wilson's phalarope (*Steganopus tricolor*), and spotted sandpiper *Actitis macularia*). Vegetation cover for nest concealment from predators and for protection from other disturbances is important during the breeding season.

Landbirds (Also Known As Neotropical Migrant Birds)
The planning area supports a wide variety of neotropical migrant bird species (more than 240 **s**pecies) that breed in the United States and winter. Neotropical migrants exhibit quite variable habitat requirements and are found in most habitat types. Most birds found in the planning area are neotropical migrant birds.

Invertebrates
Limited information is available on invertebrates, and more is known about aquatic than terrestrial species. The presence of aquatic invertebrates found only in clean water, such as assemblages of ephemeropterans (mayflies), plecopterans (stoneflies), and trichopterans (caddisflies), indicates healthy stream conditions. As previously discussed, springs are a source of unique, native groups of invertebrates. Some species of nematodes, mites, beetles, flies, amphipods, and snails are adapted to specific hot springs. Numerous species of snails, belonging to the Hydrobiidae family *(Pyrgulopsis spp.)* have been collected from cold, thermal, and hot springs in the planning area and have been described as a new species.

4 Environmental Consequences

The direct and indirect effects to affected resources caused by implementation of the No Action Alternative, the Proposed Action and the Action Alternative are analyzed in this chapter. Cumulative impacts are analyzed in Chapter 5.

4.1 No Action Alternative (Continue Present Management)

Supplemental Authorities

4.1.1 Air Quality

Managing wildfire for less than full suppression or for resource benefit may extend the length of time that fires would burn as compared to full suppression. Impacts to air quality from smoke would increase smoke release and duration of smoky conditions. These impacts are expected to be minor based on the historical low number of fires that have occurred in the planning area. Implementing strategically placed fuel treatments could potentially reduce fire size and smoke emissions. Short term impacts to air quality from dust generated during fire rehabilitation operations would be minimal. Impacts to air quality would be localized and of short duration.

4.1.2 ACEC

The viewscape would be restored to a condition more closely resembling what early emigrants would have encountered on the Applegate Trail. Other effects on the High Rock Canyon ACEC are analyzed in sections 4.1.6, 4.1.8, 4.1.10, 4.1.14, 4.1.15, and 4.1.17. The effects of prescribed burning on the High Rock Canyon ACEC were also analyzed in the High Rock-Little High Rock Canyon Restoration Burns Environmental Assessment # CA-370-02-07 (2002). The analysis concluded that small fires would restore vegetation communities to a more natural condition which would provide long-term benefits to wildlife.

4.1.3 Cultural Resources

NCA RMP direction to "protect and interpret all cultural resources for the benefit of current and future generations" would generally enhance the value and understanding of cultural resources in the planning area.

Cultural resources would continue to be impacted by livestock grazing, maintenance of range developments, fire suppression activities, and unauthorized artifact collection by visitors. Historic structures would not be fully protected from wildfires.

4.1.4 Invasive Non-Native Species

Increasing inventory activities and implementing Integrated Weed Management practices would improve detection and treatment of noxious weeds throughout the planning area. This would result in both short and long-term decreases in areas occupied by noxious weeds and rate of spread of new populations.

Implementation of NCA RMP guidelines for the application of ESR and fuels treatments designed to maintain or restore native vegetation communities would indirectly impact invasive non-native species. In the short-term, projects that implement the guidelines would increase the risk of non-native invasion due to the surface disturbance associated with removal of vegetation. Long-term impacts would lead to decreased composition and risk of invasion by noxious weeds and cheatgrass because the treated sites would be occupied with native or naturalized species able to complete with the invasive species. The exact acreage of the treated areas are unknown but would be expected to not exceed several thousand acres during the life of the plan.

Allowing continued vehicle access to permitted range developments on a case-by-case basis would result in continued opportunities for the routes to be the site of new infestations of noxious weeds. The acres of disturbance associated with these access routes would be less than five acres in total.

4.1.5 Native American Religious Concerns

Increasing use of Wilderness Areas for recreational purposes without additional management actions could affect Native American concerns about preservation of wilderness values including naturalness and solitude. Other actions such as scientific research permitting and maintenance of range developments may also affect tribal concerns. Tribal groups also expressed concern about protections for a cave in the Black Rock Desert Wilderness.

4.1.6 Surface Water Quality

The NCA RMP directed projects and management changes to meet desired resource conditions would result in improved water quality.

Implementation of projects that result from the ESR and fuels guidelines would indirectly impact local water quality over the long term by decreasing erosion into riparian systems following wild fires. The area affected by these projects is unknown because most of the projects would be implemented after wildfires, but it is estimated that during the life of the plan less than five water sources would be affected.

4.1.7 Threatened and Endangered Species

Herbicide application may include impacts to LCT. The impacts on LCT could include a slight possibility of an accidental application of herbicide into a LCT occupied stream, or the slight potential of washing herbicide into a occupied LCT stream from heavy rainfall, or the slight possibility of drift into a LCT occupied stream. However, stipulations and mitigation measures specified in BLM 2007 BLM Vegetation Treatments Using Herbicides Final Programmatic EIS (BLM 2007), BLM 2002 Integrated Weed Management Environmental Assessment and all other applicable manuals, guidance, and policies would be used to prevent these impacts from occurring.

Future prescribed fire and mechanical or chemical treatments could produce some impacts to LCT or LCT recovery streams. The impacts could include loss of vegetative cover and/or sedimentation, depending on distance to LCT occupied or recovery stream.

Indirect impacts from public access along existing road in upper North Fork & South Fork Battle Creek may include sedimentation at road crossings. The road crossing(s) can increase the frequency and extent of the sediment being added to the stream by acting as a corridor for waterflow on road surfaces and roadside ditches. Increased fine-sediment composition in stream gravel has been linked to decreased fry emergence, decreased juvenile densities, and loss of winter carrying capacity (Gucinski et al 2001).

4.1.8 Wetland and Riparian Zones

Invasive species inventory and Integrated Weed Management practices, and ESR or fuels treatments would indirectly impact wetlands and riparian areas by making them more likely to be retained or enhanced.

Future vegetation manipulation projects that mimic the role of natural fire would lead to slight increases in habitat diversity through modifications of vegetation composition, age structure, density and height structure. At most these changes would occur on a few tens of wetland or riparian zone acres during the life of the plan.

The modification of existing spring developments to ensure that adequate water is available to support spring meadows would increase the amount of water left in the wetland or riparian zone in a few locations in the planning area. This would result in an increase in size of spring meadows associated with spring development projects.

4.1.9 Wilderness

Untrammeled

Trammeling activities would continue in these ten wilderness areas. Activities would continue for the management and suppression of wildland fire. Activities would continue in the control of invasive and non-native species. Emergency Stabilization and Rehabilitation activities following wildland fires may occur as well. Prescribed burning would continue within the High Rock Canyon complex. While all of these activities would have minor trammeling impacts, they would contribute to the long-term natural qualities of the wilderness areas.

Naturalness and Primeval Character

Actions taken in fire and fuels management would follow guidelines set in place for ESR and fuels treatments. Prescribed fire and less than full suppression tactics would help restore the natural vegetation community in the High Rock Canyon Area. The control of invasive and non-native species would seek to restore and preserve the natural character of the wilderness areas.

Undeveloped

The removal of non-historical and unnecessary range developments would improve the undeveloped wilderness character of the areas. Authorized range developments and the

associated administrative routes would continue to negatively impact the undeveloped character of the wilderness areas. The approved use of motorized equipment to access and maintain authorized range developments would have minor negative affects on the undeveloped character of wilderness.

The presence of historically significant structures and developments would continue to negatively impact the undeveloped quality of the wilderness areas but would contribute to the historic character of the areas.

Pop-up hunting blinds in place would have temporary negative impacts during the season of use.

Outstanding Opportunities for Solitude or a Primitive and Unconfined Form of Recreation
Visitor encounters in these areas would be infrequent. However, during hunting season encounters could occur more frequently.

No thresholds for visitor encounters or campsite conditions would be put in place and therefore opportunities for unconfined recreation would remain at current levels.

The presence of crews involved in the control of invasive non-native species, fire and fuels management, Emergency Stabilization and Rehabilitation following wildland fires, restoration of small scale disturbances and other "on the ground" actions may result in a temporary negative impact to opportunities for solitude in small locations during short periods.

The case-by-case use of motorized equipment to maintain authorized range and water developments would temporarily reduce opportunities for solitude.

Additional Affected Resources

4.1.10 Fire Management

Under the No Action Alternative, fire management would follow guidelines set forth in the NCA RMP, Fire Management Plan and current fire policy. All wilderness areas are currently managed allowing for prescribed fire and for less than full suppression or for resource benefit.

Prescribed fire and other fuel treatments would reduce the size and/or the intensity of wildfire, provide for improved fire fighter safety and protect important resource and cultural values. Protecting important cultural sites from wildfire and implementing fuel treatments would affect fire suppression as more fire resources may be necessary to protect these areas or implement treatments.

Implementing suppression to meet multiple objectives would improve vegetation communities that require fire for vegetative health. The magnitude of these impacts is unknown due to the nature of wildfires, but is likely to impact only a few fires and at most a few thousand acres during the life of the plan.

Implementing ES&R treatments would stabilize and prevent unacceptable degradation to resources in areas damaged by wildfire, reduce erosion, help prevent establishment and spread of invasive annual species, and provide for gradual re-establishment of native species.

4.1.11 Paleontological Resources

Paleontological resources would continue to be impacted by livestock grazing, maintenance of range developments, fire suppression activities, and unauthorized artifact collection by visitors.

4.1.12 Recreation

The NCA RMP defined visitor use zones that included general management philosophy and setting conditions. If the actions presented in the wilderness plan are not implemented, there would be no management strategy for mitigating negative wilderness character impacts from recreation use. This may result in visitor dissatisfaction because of party interaction or degradation of popular campsites.

Potential impacts from designating the citizen-proposed Desert Trail would be greatest under this alternative since no further analysis would be conducted. The potential for resource damage would be more likely as the proposed route would not be adjusted for terrain, soils, and sensitive areas including cultural sites beyond that conducted under the NCA RMP EA.

Managing special recreation permits in accordance with the NCA RMP sideboards would continue to prevent incompatible competitive, commercial or organized recreation uses from occurring within the designated wilderness. Existing opportunities for commercial guide trips and organized group uses would be unaffected. The types of opportunities provided would continue to be determined by each operator, and may not achieve the desired wilderness experiences.

The development and distribution of brochures, maps, websites and other outreach media would help ensure the publics' understanding of visitor use regulations, backcountry use ethics, recreation opportunities and sensitive resources. Improving user ethics would have the potential to improve current physical and social conditions at campsites, along road corridors and in the designated wilderness. Improved ethics could indirectly prevent future restrictive actions that diminish opportunities for unconfined recreation, by preventing unacceptable impacts.

Attempting to acquire public access easements through private property and or developing road alignments around private property could ensure continued public access to certain locations within the planning area.

4.1.13 Social Values and Economics

Setting thresholds for the number of commercial outfitters or guides would be based on past authorizations and a case-by-case basis. Due to the limited number of big-game hunting tags throughout the planning area, demand for commercial guides and outfitters within the wilderness areas is low. As a result, it is estimated the economic importance of commercial guiding and outfitting within the wilderness areas would continue to be low or negligible. Over the short-term, the number of commercial outfitters and guides is not anticipated to noticeably change

under any alternative and the demand of clients would continue to dictate which guides and outfitters are selected to provide services. Over the long-term it is anticipated the economic value of commercial guiding and outfitting services would grow with increased demand for defined wilderness recreation opportunities, and permit stipulations designed to ensure quality commercial services for the visiting public. This would result in small increases in economic development in Humboldt and Washoe counties.

Authorization of access to and maintenance of permitted range development projects would be determined on a case-by-case basis. Having projects including fences, windmills, and spring developments operational would allow livestock to better utilize the rangeland and increase the probability that established livestock grazing systems can be fully implemented.

4.1.14 Soils

ESR or fuels treatments would indirectly impact soils by making them more likely to be retained or enhanced. The direction to retain, and where possible expand, existing aspen clones would add an additional vegetation layer to existing vegetation communities on at most a few acres. This would decrease soil erosion potential to the area. Future vegetation manipulation projects that mimic the role of natural fire would lead to changes in vegetation composition, age structure, density and height structure that would locally increase soil erosion potential in the short-term but decrease the soil erosion potential in the long-term. At most these changes would occur on a few hundred acres during the life of the plan.

Authorization of infrequent motorized access would maintain compacted soils and increased soil erosion potential on about 5 acres of existing access routes due to compaction associated with the passage of motorized vehicles required to maintain the range developments.

The modification of existing spring developments to prevent drainage or loss of water would increase potential for hydric soils by ensuring that adequate water is available to support spring meadow function. Increased ground water storage would increase the size of spring meadows associated with spring development projects resulting in increased protection for soils.

4.1.15 Vegetation

Invasive species inventories, implementation of Integrated Weed Management practices, and ESR or fuels treatments would indirectly impact native vegetation communities by making them more likely to be retained or enhanced. During the life of the plan, a few thousand acres would likely be affected by these activities.

The direction to retain and where possible expand, existing aspen clones would add an additional structural layer to existing vegetation communities on at most a few acres. This would increase vegetation diversity and add an additional vegetation community to the area. Future vegetation manipulation projects that mimic the role of natural fire would lead to slight increases in vegetation composition, age structure, density and height structure. At most these changes would occur on a few hundred acres during the life of the plan.

Authorization of infrequent motorized access on a case-by-case basis would prevent the restoration of native vegetation communities on about 5 acres of existing access routes due to compaction associated with the passage of motorized vehicles required to maintain the range developments. The modification of existing spring developments to prevent drainage or loss of water would increase riparian vegetation. Increased ground water storage would increase the size of spring meadows associated with spring development projects resulting in increased riparian vegetation.

4.1.16 Wild Horses and Burros

Fire rehabilitation and restoration could close areas to wild horse and burros in order to protect seeded species and allow them to establish. Ultimately, ES&R efforts re-establish desired plant communities which would increase desirable wild horse habitat in the long-term if the rehabilitation of perennial grasses, forbs and shrubs are successful.

Temporary fencing necessary to close areas from grazing directly restricts wild horse movement and poses site specific entrapment and entanglement hazards (especially if of wire construction) which may result in injury or death to horses over the medium-term (until fences are removed). Fences may restrict wild horses from preferred or limited water sources. Wild horses are creatures of habit and may not successfully find alternative water sources especially in areas of limited water or during periods of high competition for water (generally late summer).

Prescribed fire and wildland fire alters rangelands in the short-term by the immediate loss of forage, especially desired perennial grasses and a downward change in ecological status. Successful restoration of the desired plant community is dependent upon numerous factors including precipitation, fire intensity, season of burn, seed source, time of year seeded etc. Restoration success is limited by grazers (livestock, wild horses, wildlife). Therefore, mid- to long-term post fire plant communities may potentially produce more forage or forage of higher quality for wild horses, but would more likely, due to grazing, remain in a degraded state limiting the amount and quality of forage available over the long-term. Historically, the long-term success of burned areas returning to a desirable plant community has been poor in areas with unrestricted wild horse and livestock grazing, especially at mid to lower elevations. Therefore, fire directly impacts wild horses through an immediate loss of forage and is expected to have a negative indirect impact on long-term habitat forage potential within the burned area unless ES&R efforts are successful.

Fire presents an immediate danger to wild horses, especially if the fire is broad-scale across the landscape. Horses may become trapped (by topography or fences) within a burn area and cannot escape. Direct impacts such as death or injury may occur due to burns, smoke inhalation or incidents while trying to escape. However, these risks are small due to the mobility of horses. Prescribed fire and other fuel treatments could minimize potential direct impacts to wild horses by and other fuel treatments herd populations, movement patterns, terrain and potential entrapment hazards.

The No Action Alternative manages public use but does not establish recreation use thresholds. Disturbance/harassment to animals and habitat displacement impacts are expected to be more

likely as discussed under the Action Alternative. Impacts would increase as recreation/visitor use increases and may be more likely and more widespread due to the lack of recreation use thresholds.

The ability to assess the removal of range developments (GRAZ-6B-6C) and determine actions to rehabilitate water catchments on a case-by-case basis allows the retention of unauthorized developments beneficial to wild horses and burros. Wild horses would benefit as historical patterns of use could continue at known sites, retention of some existing developments may better distribute water for wild horses across the landscape, competition for water at available sites would be reduced over the long-term and overall resource conditions would benefit.

4.1.17 Wildlife and Wildlife Management

Invasive species inventory and implementation of Integrated Weed Management practices, and ES&R or fuels treatments would indirectly impact wildlife populations by making them more likely to be retained or enhanced.

The direction to retain and where possible expand, existing aspen clones would add an additional structural layer to existing wildlife habitats on at most a few acres. This would enhance wildlife populations, especially nesting and migratory bird species, by providing additional opportunities for foraging, nesting and roosting.

The modification of existing spring developments to provide water at ground and ensure that adequate water is available to support spring meadows would increase safe drinking opportunities for a wide variety of wildlife species, particularly small non-game species.

4.2 Proposed Action

In addition to the items described in the No Action Alternative, the Proposed Action Alternative would implement the following actions. Only new or modified strategies are included in the Proposed Action Alternative discussion.

Supplemental Authorities

4.2.1 Air Quality

The identification of 101,260 acres of the Category B lands for emphasized fire use would be expected to result in a slight increase in the amount of smoke produced as fire in this area would be allowed to burn for resource benefit during wildfire events. Implementation of modified suppression activities would lead to a few instances where fire size and duration would be greater than under full suppression tactics. During the life of the plan the resulting impact to air quality would be production of smoke from up to several thousand additional burned acres. These impacts would remain low based on the number of historic fires in the area. Implementation of prescribed burning in the High Rock Canyon area would temporarily reduce air quality associated with the smoke produced from the burning vegetation. Smoke would be

produced from the burning of up to 50 acres at one time with no more than 100 acres in any burn season.

4.2.2 ACECs

The viewscape would be restored to a condition more closely resembling what early emigrants would have encountered on the Applegate Trail. Other effects on the High Rock Canyon ACEC are analyzed in sections 4.2.6, 4.2.8, 4.2.10, 4.2.14, 4.2.15, and 4.2.17. The effects of prescribed burning on the High Rock Canyon ACEC were also analyzed in the High Rock-Little High Rock Canyon Restoration Burns Environmental Assessment # CA-370-02-07 (2002). The analysis concluded that small fires would restore vegetation communities to a more natural condition which would provide long-term benefits to wildlife.

4.2.3 Cultural Resources

The protection of structures and developments determined to be historically significant or eligible for the National Register of Historic Places would maintain and enhance the historical characteristics of the wilderness areas.

Any ground disturbing activities would be reviewed for effects to cultural resources as described in the Programmatic Agreement between the BLM and the State Historic Preservation Officer (SHPO) concerning the Wilderness Management Plan. (See Appendix B)

As public information on these areas increases, potential impacts to archeological sites may include direct and indirect damage from increased foot traffic, removal of artifacts, vandalism and illegal excavations. These impacts would be prevented to the greatest degree possible by adaptive management strategies designed to protect cultural resources when they become publicly known or begin to suffer some damage.

General interpretive information on wilderness resources, including archeological resources, would help reduce impacts to archeological sites. Regular monitoring of visitor use would trigger mitigation efforts if impacts to archeological resources are detected.

4.2.4 Invasive Non-Native Species

Focusing efforts on the control of existing species which present a high degree of risk to ecosystem stability, small populations of newly introduced species, and well established large populations on areas with high resource value would provide clear management direction and prevent further degradation of the natural conditions of the wilderness areas.

Identification of the Category B lands for priority consideration of less than full suppression tactics would slightly increase risks of non-native invasive plant species invasion on additional areas burned due to adoption of modified suppression tactics. Due to the operational constraints, the limited number of fires and the types of vegetation communities identified, the potential invasion area would be a maximum of several thousand acres and the risks of invasion are considered low.

Implementation of prescribed burning would remove existing vegetative cover and create short-term opportunities for invasion of non-native invasive plant species. Within one or two years post-fire, the risk would be reduced to that of adjacent unburned vegetation. During the life of the plan, increased short-term risk would occur on approximately 300 acres.

4.2.5 Native American Religious Concerns

Management actions as described in the Proposed Alternative would help protect the wilderness values expressed during Native American consultations. The Summit Lake Paiute and the Pyramid Lake Paiute Tribes have expressed concerns that a cave in the Black Rock Desert Wilderness needs additional protection and that other caves in the vicinity may also need protection. Measures proposed in this alternative, including site stewards, should help address this concern. (Additional specific protections for this cave may be developed under a separate NEPA evaluation.)

4.2.6 Surface Water Quality

Completion of an inventory of spring and riparian systems within the plan area would indirectly impact water quality over the long term by identifying and placing emphasis on important riparian systems in need of improvement.

Implementation of prescribed burning adjacent to creeks in the High Rock area would cause short-term direct and indirect impacts to surface water quality. Burning adds ash and soot directly to water sources and temporarily increases sediment input into surface waters. However burning would occur in the fall when surface flows in the creek are near the lowest levels of the year. Burning would average about 30 acres per year and less than half the burns would be occur immediately adjacent to surface waters.

Construction of a few small protective exclosures at developed springs would directly improve long-term water quality at a few sources within the plan area. The exclosures would decrease sedimentation and external nutrient flows into surface waters at these sites.

4.2.7 Threatened and Endangered Species

Herbicide application may include impacts to LCT. The impacts on LCT could include a very slight possibility of an accidental application of herbicide into a LCT occupied stream, or the slight potential of washing herbicide into a occupied LCT stream from heavy rainfall, or the slight possibility of drift into a LCT occupied stream. However, mitigation measures listed in BLM 2007 (BLM Vegetation Treatments Using Herbicides Final Programmatic EIS) would be used to deter these impacts from happening to LCT occupied streams and are considered extremely unlikely to occur.

The Category B lands for priority consideration of less than full fire suppression tactics could impact Lahontan cutthroat trout and some recovery streams. The priority acres include the LCT occupied streams: Colman Creek, North Fork Battle Creek, and Snow Creek. The priority acres also include portions of the following LCT recovery streams: Donnelly Creek, Paiute Creek,

Mary Sloan Creek, Happy Creek, and Bottle Creek. With less than full fire suppression tactics, impacts to LCT could include a loss of riparian vegetation cover which could allow for an increase in stream temperature that could last for many years (Dunham et al 2007). However, when wildfires threaten LCT streams within areas classed as Category B, they would continue to be fully suppressed to minimize potential LCT habitat degradation.

Indirect impacts from public access along existing road in upper North Fork & South Fork Battle Creek may include sedimentation at road crossings. The road crossing(s) can increase the frequency and extent of the sediment being added to the stream by acting as a corridor for waterflow on road surfaces and roadside ditches. Increased fine-sediment composition in stream gravel has been linked to decreased fry emergence, decreased juvenile densities, and loss of winter carrying capacity (Gucinski et al 2001).

Future prescribed fire and mechanical or chemical treatments could produce some impacts to LCT or LCT recovery streams. The impacts could include loss of vegetative cover and/or sedimentation, depending on distance to LCT occupied or recovery stream.

4.2.8 Wetland and Riparian Zones

The identification of Category B lands for priority consideration of less than full fire suppression tactics would affect wetlands or riparian zones on at most a few tens of acres during the life of the plan. The past fire history and operational restrictions on when and how limited suppression can be implemented would be expected to result in few fires within the identified area and few opportunities to implement modified suppression tactics. On those areas where modified suppression tactics would be implemented, it would be anticipated that the presence of important wetland areas or riparian zones in the path of a wildfire would be an important consideration as to whether to adopt modified suppression techniques.

The establishment of campsite condition thresholds, allowance for temporary blinds, and closure and rehabilitation of campsites in High Rock Canyon would have impacts on wetland and riparian areas. Actions related to campsites would decrease human uses in a few campsites within or adjacent to wetlands or riparian zones, resulting in long-term localized improvement in riparian conditions. Temporary hunting blinds continue to cause short-term impacts to riparian zones associated with a few spring meadows as hunters continue to place blinds in the riparian habitat.

Prescribed burning of up to 300 acres of dry meadow habitats in the High Rock area would have both direct and indirect impacts on wetlands and riparian zones. A short-term impact would be the loss of less than one acre per year of riparian vegetation due to the passage of fire. After the passage of the fire, riparian species would be expected to resprout the following growing season. Over the long-term infrequent burning of riparian vegetation would maintain the vigor of willows and herbaceous species.

The construction of a few small springhead exclosures to protect the spring source, spring inventory, and development of evaluation/action processes would improve riparian habitat.

4.2.9 Wilderness

Untrammeled
Manipulation of vegetation and riparian areas through prescribed fire, less than full suppression, and control of noxious weeds would decrease the untrammeled character of the wilderness areas but increase the naturalness. The construction of exclosures at developed springs would also have a trammeling effect on the wilderness areas but increase the natural functioning of those riparian systems. Prescribed burning would reduce the untrammeled nature on a tiny percent of the wilderness acres, but also increase naturalness in those areas.

Restoring native vegetation to agricultural trespass in the Calico Mountains Wilderness would continue trammeling activities in that location but result in a long-term increase in the naturalness.

Planting of aspens and cottonwoods in their former habitat would create a temporary decrease in the untrammeled nature of the sites, but increase the long-term naturalness there. The tree stands were eliminated by human disturbance.

Naturalness and Primeval Character
Actions taken in fire and fuels management would seek to emphasize the maintenance and restoration of natural conditions and natural plant community succession. The control of invasive non-native species would focus on newly introduced species or those that threatened high priority resources resulting in an increase in the natural condition of the area. Construction of small exclosures at developed water sources would increase the natural functioning of spring sources by preventing trampling and reduced water flow due to compaction. Planting of aspens and cottonwoods in their former habitat would, in the long-term, increase both the naturalness of the habitat and the natural functioning of the associated drainages.

Undeveloped
Restoring sections of the citizen-proposed Desert Trail that were formally motorized routes to meet BLM trail standards would improve the undeveloped nature of those wilderness areas that the trail passes through. The construction of small exclosures at developed springs would have reduce the undeveloped quality of small locations within wilderness areas. The protection of aspen and cottonwood seedlings in restoration areas would result in a reduction in the undeveloped quality of the sites until the protections were removed after tree establishment.

Use of motorized vehicles and equipment for access and maintenance of authorized range developments would have a minor reduction on wilderness character in the short term. However, these actions have historically been authorized on a case-by-case basis and the total amount of motorized use is not anticipated to increase with a programmatic level decision. The level of mechanized use for access and maintenance of existing authorized range developments is not expected to affect the number or severity of routes and two-tracks within wilderness.

The presence of historically significant structures and developments would continue to negatively impact the undeveloped quality of the wilderness areas but would contribute to the historic character of the areas.

Pop-up hunting blinds in place would have temporary negative impacts during the season of use.

Outstanding Opportunities for Solitude or Primitive and Unconfined Forms of Recreation
Visitor encounters in these areas would be infrequent. However, during hunting season encounters could occur more frequently.

The presence of crews involved in the control of invasive non-native species, fire and fuels management, Emergency Stabilization and Rehabilitation following wildland fires, restoration of small scale disturbances and other "on the ground" actions may result in a temporary reduction in opportunities for solitude in small locations during short periods.

Use of motorized vehicles and equipment for access and maintenance of authorized range developments would have intermittent, short-term decreases in opportunities for solitude. However, these actions have historically been authorized on a case-by-case basis and the total amount of motorized use is not anticipated to increase with a programmatic level decision.

Additional Affected Resources

4.2.10 Fire Management

Affects would be the same as the No Action Alternative except for the identification of areas for priority consideration to manage suppression response to meet multiple objectives and prescribed fire. Fire suppression objectives would be clearly defined and taken into consideration in the WFDSS process. Specific guidance for fuels management such as prescribed burns in High Rock Canyon could facilitate the restoration of natural ecosystem functions, which would benefit wilderness characteristics. There would be no new affects from those described under the No Action Alternative.

4.2.11 Paleontological Resources

Inventories are expected to discover further valuable resources within the wildernesses found at few other locations. However in past discoveries, these remains have not been completely fossilized and once exposed to the elements quickly become brittle and disintegrate—with any value completely lost. Inventories and potential excavation would preserve the information value of the fossils.

4.2.12 Recreation

The retention of historically significant structures or those eligible for the National Register of Historic Places would enhance opportunities for learning about the historic uses of the wilderness and NCA through off site interpretation and publications. Stabilization efforts would ensure the opportunity to experience historic properties, which would help instill an increased appreciation for the area's significant cultural history.

Monitoring of changes to wilderness character would help retain or manage toward desired conditions and would facilitate the attainment of targeted recreation experiences and beneficial outcomes.

Evaluating the citizen-proposed Desert Trail and designating the most appropriate trail corridor would prevent impacts such as the creation of multiple trails, erosion of unstable slopes and disturbance to cultural and wildlife resources.

Improving public outreach efforts would improve visitors' understanding of use regulations, recreation opportunities and sensitive resources. Improving user ethics would have the potential to improve current physical and social conditions at campsites, along road corridors and in the wilderness. Improved ethics could also prevent future restrictive actions that diminish opportunities for unconfined recreation by preventing unacceptable impacts.

Establishing a six (6) guide threshold for the number of commercial outfitters authorized to conduct operations in the planning area would provide for traditional levels of commercial services offered for the area.

Developing public access routes around private lands where public easements cannot be obtained would maintain recreation access and the resulting opportunities. Providing motorized (outside wilderness) and non-motorized access routes would ensure continued public access to several desirable recreation use areas.

4.2.13 Social Values and Economics

When compared with the more limited number of commercial guides and outfitters proposed under the Action Alternative, this alternative would have greater beneficial effects on the local economy through established criteria to maintain quality services and potential for additional businesses. It is not anticipated that thresholds for the number of commercial guides and outfitters would be reached over the next 10-15 years (the life of this plan). If these thresholds are reached, economic effects would be similar to those described under the Action Alternative.

In the Proposed Action access and maintenance standards for authorized range developments would be more specific and could be implemented without further analysis thereby improving the livestock owner and operator's ability to plan for maintenance of range development projects.

4.2.14 Soils

The identification of the Category B lands for priority consideration of less than full suppression tactics would directly affect soils on at most a few thousand acres during the life of the plan. During the short term there would be an increased potential for soil erosion due to loss of vegetation after the passage of a fire. The past fire history and operational restrictions on when and how suppression can be implemented would be expected to result in few fires within the identified area. Soil erosion would return on most areas to pre-burn levels within three (3) to five (5) years.

Prescribed burning of up to 300 acres of dry meadow habitats in the High Rock area would have both direct and indirect impacts on soils. The passage of fire would result in the immediate loss of vegetation consumed by the fire and increased potential for soil erosion. Fire also has a direct

impact on the nutrient loads in soils, increasing the carbon and nitrogen, providing for a flush of new growth. The following year after the fire, native bunchgrasses, forbs and sprouting shrubs would regrow and decrease soil erosion potential.

The construction of a few small springhead exclosures to protect the spring source and headbox would decrease the potential for soil erosion associated with spring meadows on less than one acre.

4.2.15 Vegetation

The identification of the Category B lands for priority consideration of less than full fire suppression tactics would affect native vegetation communities on at most a few thousand acres during the life of the plan. The past fire history and operational restrictions on when and how limited suppression can be implemented would be expected to result in few fires within the identified area and few opportunities to implement modified suppression tactics. In the mid to long term, the additional burned area would increase diversity due to changes in vegetation composition, structural layers, and productivity on at most a few thousand acres.

The establishment of thresholds for visitor numbers and encounters and the closure and rehabilitation of campsites along Jackson and High Rock creeks would locally decrease human uses on several hundred acres of sensitive riparian vegetation and restore less than an acre of vegetation. Actions associated the establishment of a new primitive road in the Slumgullion area would locally remove vegetation on up to four acres due to surface disturbance.

Prescribed burning of up to 300 acres of dry meadow habitats in the High Rock area would have both direct and indirect impacts on vegetation. The passage of fire would result in the immediate loss of vegetation consumed by the fire. The following year after the fire, native bunchgrasses, forbs and sprouting shrubs would regrow converting the burned sites from tall sagebrush stands to ryegrass, forb, and silversage/rabbitbrush sites. During the short-term the burned sites would be dominated by ryegrass. As sprouting shrubs grow and sagebrush seedlings become established there would be a long-term trend for the burned sites to return to a sagebrush dominated site.

The construction of small springhead exclosures to protect the spring source and headbox would improve vegetation associated with spring meadows. Authorization of motorized access to one parcel of private land in the North Jackson Wilderness would prevent the restoration of native vegetative communities on the existing access route due to compaction associated with the passage of motorized vehicles into the private parcel.

4.2.16 Wild Horses and Burros

The Proposed Action allows for a moderate increase in recreation use. Recreation use thresholds would act to disperse, contain or limit human use patterns over the landscape. Disturbance/harassment and displacement impacts are expected to be less with this alternative compared to the No Action Alternative, but not as favorable as compared to the Action Alternative.

Direct impacts to wild horses of constructing small temporary exclosures around water sources associated with authorized range developments (GRAZ-14D) would be the temporary displacement of animals from watering sites during construction. Displacement impacts could be minimized by limiting construction to non-peak watering periods. Potential indirect impacts could include a loss of access to water if range developments become non-functional. Routine monitoring and maintenance of developments are critical to assure water remains available outside the exclosures for wild horses as a loss of water accessibility could result in the death or suffering of animals.

Indirect impacts associated with fence repairs (GRAZ-14E) are entanglement injuries and the loss of free-roaming movement, especially in areas where fences are historically breached by wild horse movements. Fences are generally effective at restricting wild horse movements. Long-term impacts may include a decrease in the genetic diversity of herds as less genetic mixing with other horses is possible due to fences restricting movement. The installation of gates at locations where wild horses repeatedly breach fences and keeping gates open at all times except when livestock are present would allow for increased wild horse movement and genetic diversity.

4.2.17 Wildlife and Wildlife Management

The identification of the Category B lands for priority consideration of less than full fire suppression tactics would affect wildlife populations and habitats on at most a few thousand acres during the life of the plan. The past fire history and operational restrictions on when and how limited suppression can be implemented would be expected to result in few fires within the identified area and few opportunities to implement modified suppression tactics. On those areas where modified suppression tactics would be implemented, it would be anticipated that a small number of additional individuals of a number of non-mobile surface dwelling species lost during burning would be lost when compared to the No-Action Alternative. In the mid to long term, the additional burned area would increase habitat diversity due to changes in vegetation composition, structural layers, and productivity on at most a few thousand acres.

The establishment of monitoring of wilderness character changes for visitor numbers and encounters and the enforcement of the prohibition of rock climbing in High Rock would locally decrease human uses in several hundred acres wildlife habitat

Prescribed burning of up to 300 acres of dry meadow habitats in the High Rock area would have both direct and indirect impacts on wildlife populations and habitats. A short-term impact would be the loss of small, relatively immobile surface dwelling individuals of mammal, invertebrate and reptile species due to the passage of fire. After the passage of the fire, brush dwelling species would be reduced or eliminated from the burned areas due to the removal of brush by the fire. Species that favor grassy habitats or species with habitat flexibility would be expected to maintain or increase their populations. Indirectly, species that avoid tall brushy sites would also be more likely to use or pass through the burned sites. One example is bighorn sheep that pass through the target burn sites to reach water in High Rock Creek. Passages through tall stands of brush subject the sheep to increased risk of predation because they are away from their natural

escape cover and their ability to see predators is reduced. Removal of tall brush by burning increases the sheep's ability to see predators. The construction of small springhead exclosures to protect the spring source and headbox would improve spring meadow habitat.

4.3 Action Alternative

In addition to the items described under the No Action and Proposed Action Alternatives, the Action Alternative would implement the following actions. Only new or modified strategies are included in the Action Alternative discussion.

Supplemental Authorities

4.3.1 Air Quality

The identification of 266,263 acres of the Category B lands for priority consideration of less than full suppression techniques would be expected to result in a slight increase in the amount of smoke produced during wildland fire events. Implementation of modified suppression activities would lead to a few instances where fire size and duration would be greater than under full suppression tactics. During the life of the plan the resulting impact to air quality would be production of smoke from up to several hundred additional burned acres.

4.3.2 ACEC

The viewscape would be restored to a condition more closely resembling what early emigrants would have encountered on the Applegate Trail. Other effects on the High Rock Canyon ACEC are analyzed in sections 4.3.6, 4.3.8, 4.3.10, 4.3.14, 4.3.15, and 4.3.17. The effects of prescribed burning on the High Rock Canyon ACEC were also analyzed in the High Rock-Little High Rock Canyon Restoration Burns Environmental Assessment # CA-370-02-07 (2002). The analysis concluded that small fires would restore vegetation communities to a more natural condition which would provide long-term benefits to wildlife.

4.3.3 Cultural Resources

Providing additional protection to structures and developments that are determined to be eligible for the National Register of Historic Places would ensure the presence of these structures that enhance the historic qualities of the planning area. The ability to restore structures eligible for the National Register of Historic Places would further ensure the endurance of the historic characteristics of the wilderness areas.

4.3.4 Invasive Non-Native Species

Identification of 266,263 acres of Category B lands for priority consideration for less than full suppression tactics would slightly increase risks of non-native invasive plant species invasion on additional areas burned due to adoption of modified suppression tactics. Due to the operational constraints, the limited number of fires and the types of vegetation communities identified the potential invasion area would be a maximum of several hundred acres and the risks of invasion considered low.

4.3.5 Native American Religious Concerns

Impacts to Native American religious concerns would be the same as the Proposed Action Alternative.

4.3.6 Surface Water Quality

Impacts to surface water quality would be the same as the Proposed Action.

4.3.7 Threatened and Endangered Species

Impacts to LCT and LCT recovery streams for the herbicide application action, prescribed fire/mechanical/chemical treatment action, and public access on North Fork Battle Creek action would be the same as the Proposed Action.

The 266,263 acres of Category B lands for priority consideration of less than full fire suppression tactics could impact some LCT recovery streams. The priority acres include portions of the following LCT recovery streams: Mary Sloan Creek, Happy Creek, and Bottle Creek. With less than full fire suppression tactics, impacts to LCT recovery stream habitat could include a loss of riparian vegetation cover which could allow for an increase in stream temperature that could last for many years (Dunham et al 2007). However, when wildfires threaten LCT streams within areas classed as Category B, they would continue to be fully suppressed to minimize potential LCT habitat degradation.

4.3.8 Wetlands and Riparian Zones

The identification of 266,263 acres of Category B lands for priority consideration of less than full fire suppression tactics would affect wetlands and riparian zones on at most a few tens of acres during the life of the plan. The past fire history, lack of fuels in the Black Rock Desert Wilderness and operational restrictions on when and how limited suppression can be implemented would be expected to result in few fires within the identified area and few opportunities to implement modified suppression tactics in wetland or riparian zones.

4.3.9 Wilderness

Untrammeled

An emphasis for fire suppression, fuels and ES&R on natural processes with minimal control or manipulation and more restrictive standards for the maintenance of range developments would decrease impacts to the untrammeled quality of the wilderness areas.

Naturalness

Impacts to naturalness would be the same as in the Proposed Action except that removal of the agricultural trespass from the Calico Mountains Wilderness would result in an immediate removal of an unnatural area.

Outstanding Opportunities for Solitude or a Primitive and Unconfined type of Recreation

Lower thresholds for visitor numbers and encounters could increase opportunities for solitude within the planning area while at the same time decreasing opportunities for unconfined recreation.

Maintenance of range developments by non-mechanized means only would substantially increase the number of days permittees work in wilderness, decreasing opportunities for solitude.

Undeveloped
Restoration of damaged structures eligible for the National Register of Historic Places would ensure that those structures continue to negatively impact the undeveloped natures of the wilderness areas.

Additional Affected Resources

4.3.10 Fire Management

Affects would be the same as the No Action Alternative except for the identification of 266,233 acres would be identified for priority suppression to meet multiple objectives and prescribed fire. Fire suppression objectives would be clearly defined and taken into consideration in the WFDSS process. There would be no new affects from those described under the No Action Alternative.

4.3.11 Paleontological Resources

Inventories are expected to discover further valuable resources within the wildernesses found at few other locations. However in past discoveries, these remains have not been completely fossilized and once exposed to the elements quickly become brittle and disintegrate—with any value completely lost. Inventories and potential excavation would preserve the information value of the fossils.

Better information concerning the location of sensitive resources would enhance scientific knowledge and allow BLM to better manage these resources.

4.3.12 Recreation

The proposed future social conditions and the anticipated impacts are the major differences proposed under the Action alternative when compared to the other alternatives. The Action Alternative would establish social encounter thresholds consistent with maintaining the existing condition (i.e. no increases in visitation).

Maintaining current visitation levels would likely require the use of permit systems, seasonal closures or a combination of tactics. These management actions would be necessary much sooner than under the Proposed Action. Visitors' freedom of choice in times and locations would likely be diminished during high use periods, when restrictions to limit use would be most necessary.

4.3.13 Social and Economic Values

Under this alternative the number of commercial operators would be maintained or slightly reduced (depending upon actual guide use figures from 2002-2007). Due to the low number of operators this change would have a small or negligible effect on the local economy over the short-term. Over the long-term, effects would likely increase with guides and outfitters assigned to designated areas thereby ensuring consistent demand.

4.3.14 Soils

The identification of 266,263 acres of Category B lands for priority consideration of less than full fire suppression tactics would affect soils on at most a few hundred acres during the life of the plan by slightly increasing the potential for soil erosion. The past fire history and lack of fires in the Black Rock Desert Wilderness would be expected to remain the same. In the mid to long term, the additional burned area would return to pre-burn levels of soil erosion as vegetation cover returns.

4.3.15 Vegetation

The identification of 266,263 acres of Category B lands for priority consideration of less than full fire suppression tactics would affect native vegetation communities on at most a few hundred acres during the life of the plan. The past fire history and lack of fires in the Black Rock Desert Wilderness would be expected to remain the same. In the mid to long term, the additional burned area would increase native vegetation diversity due to changes in vegetation composition, structural layers, and productivity on at most a few hundred acres.

4.3.16 Wild Horses and Burros

In general, the Action Alternative sets recreation/visitor use threshold based on current use levels. Recreation use thresholds would act to disperse, contain or limit human use patterns over the landscape. This alternative is most likely to minimize recreation/visitor use compared to the No Action and Proposed Action alternatives and would be the most beneficial to wild horses and burros.

Management actions that would limit, reduce or minimize the number or density of visitors, duration of stay, access routes, motorized vehicles, campsites, developments, human encounters, activities near/at water sources (especially when limited seasonally), etc. would decrease human-caused disturbance and/or harassment of wild horses and burros. Impacts include displacement of animals from site-specific habitat (water sources) to repeated escape responses from human encounters. Wild horse and burro populations would undergo less stress (flight or fight response) and benefits would include better health in the long-term.

4.3.17 Wildlife and Wildlife Management

The identification of 266,263 acres of Category B lands for priority consideration of less than full fire suppression tactics would affect wildlife populations and habitats on at most a few hundred acres during the life of the plan. The past fire history, lack of fuels in the Black Rock Desert Wilderness and operational restrictions on when and how limited suppression can be implemented would be expected to result in few fires within the identified area and few opportunities to implement modified suppression tactics. On those areas where modified suppression tactics would be implemented, it would be anticipated that additional individuals of a number of non-mobile surface dwelling species lost during burning would be lost when compared to the No-Action Alternative. In the mid to long term, the additional burned area would increase habitat diversity due to changes in vegetation composition, structural layers, and productivity on at most a few hundred acres.

5 Cumulative Impacts

A cumulative impact is defined under federal regulations as follows:

> "… the impact on the environment which results from the incremental impact of the action when added to the 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).

This section identifies past present and reasonably foreseeable future actions so that their contribution to cumulative impacts can be considered. Past actions are those that have been completed to date, present actions may have been started in the past but are ongoing and are not yet completed, and future actions are those for which there is a reasonable belief they would occur and are not merely speculative. This chapter identifies those effects on the environmental resources in the Cumulative Effects Study Area (CESA) which could result from the implementation of the Proposed Action and alternatives. The timeframe for analysis, which is the projected life of this Wilderness Management Plan, is ten (10) years.

5.1 Assumptions for Analysis

Direct and indirect consequences of the Proposed Action and alternatives were evaluated previously in Chapter 4 for the various environmental resources. Analyzed in this chapter are those resources from Chapter 4 that have the potential to be incrementally impacted by the Proposed Action and alternatives within the identified CESA. Based on the preceding analysis on Chapter 4, no cumulative impacts are expected for the following resources: air quality, paleontological resources, soils, social and economic values, and visual resources.

Description of CESA Boundaries

The geographical area considered for the analysis of cumulative effects encompasses the ten wilderness areas covered by this plan and the approximately 343 miles of wilderness access routes (cherry stems) and routes defining wilderness boundaries as identified in the Transportation Management section of the NCA RMP.

5.2 Past Actions

A variety of activities and actions took place on lands within CESA prior to wilderness designation in 2000. These actions included the authorization of range developments and motorized access routes to those developments for maintenance purposes. Livestock grazing by domestic sheep as well as cattle has occurred for about 150 years in the region, with stocking rates at very high levels during portions of this period. Historic homesteading and mining also resulted in a number of structures, developments, and disturbances which are gradually deteriorating through natural processes of erosion, decay, and wildfire. At the time of wilderness designation, a number of routes were closed to motorized use, and most have been actively rehabilitated and naturalized in the following years. Other activities which have occurred in the CESA are wildland fire, fire suppression actions, fuels treatments, ESR treatments, and installation of wildlife water developments. In 2004 a Resource Management Plan was completed for the NCA and covers the lands in the CESA. Cultural and paleontological

resources have been affected by visitors, continuing cattle grazing, and natural processes, but the remote location of these wilderness areas has minimized the non-natural effects.

5.3 Present Actions

Current actions which are directly affecting the CESA include management of wildlife populations by the Nevada Department of Wildlife primarily through issuing hunting licenses and tags for recreational hunting and the gather and relocation of wildlife populations. Livestock grazing is currently authorized within portions of each of the wilderness areas. Grazing management practices includes the continued harvest of vegetation by cattle under specified stock rates and seasons of use, and use and maintenance of a number of constructed fences and water developments. A variety of monitoring activities associated with rare, sensitive, or threatened fish, wildlife, and plants; with rangeland health related to livestock and wild horses and burros; and with post-fire vegetation and habitat conditions are ongoing and are expected to continue. Other actions which are affecting the CESA and are expected to continue are wildland fire suppression, fuels treatments, ESR treatments, and treatments of non-native invasive species. Recreation activities are popular within the CESA. Cultural resources are continuing to be affected by visitors, continuing cattle grazing, and natural processes, but the remote location of these wilderness areas protects cultural and paleontological resources from significant non-natural effects.

5.4 Reasonable Foreseeable Future Actions

Management actions to monitor, control, and manipulate wild horse and burro populations with the use of aircraft and helicopters and through gather and removal of individuals have occurred in the past and are planned to continue. These activities are anticipated to occur within the CESA on several occasions over the life of this plan. Livestock grazing will continue to be permitted in the allotments associated with the planning area at current use levels. Use and maintenance of authorized fence and water development projects used in support of livestock grazing will continue. Cultural resources will continue to be affected by visitors, continuing cattle grazing, and natural processes, but the remote location of these wilderness areas will help protect cultural and paleontological resources from significant non-natural effects. One action that has potential to negatively affect cultural resources, specifically Cave E, is the construction of the Paiute Meadows Access Road which is currently underway between the Black Rock Desert Wilderness and the Pahute Peak Wilderness. After access to the southern part of the Black Rock Range was blocked by a private landowner, BLM received funds to construct a motorized trail around the blocked area. The completion of this project will allow motorized traffic closer to the cave site. This site is sensitive for both cultural resource and Native American values. Possible measures to protect this site include excavation of existing deposits to remove the attraction of looters, site monitoring by site stewards from the State of Nevada Site Stewardship Program, or erection of a barrier in front of the cave. These measures would be evaluated under separate, site-specific NEPA evaluations.

Growing recreation demand from population centers such as Reno, NV and Sacramento, CA, construction and development of BLM authorized utility corridors, wind energy developments, gas pipelines, and energy projects near the wilderness areas, participation in major BLM permitted events occurring near the wildernesses (i.e. Burning Man, organized rocket launch events), and increasing membership with interested groups and BLM sponsored organizations are all expected to continue and to indirectly contribute to slightly increased visitation and recreational use of the wildernesses.

In compliance with the Council of Environmental Quality Regulations at 40 CFR 1502.20, this cumulative impact analyses tiers into the Black Rock-High Rock Canyon Emigrant Trails National Conservation Area RMP/EIS cumulative impact analysis. The cumulative effects analysis tiered to and referenced in the RMP/EIS includes; cumulative impacts from Alternative D (section 4.3.1.5), Irreversible and Irretrievable Commitment of Resources (Section 4.4), Unavoidable Adverse Impacts (Section 4.5) and Relationship Between Local Short Term Uses and Long Term Productivity (Section 4.6). The Black Rock-High Rock Canyon Emigrant Trails National Conservation Area RMP/EIS is available at the BLM Winnemucca District Office upon request.

5.5 Cumulative Impacts

The cumulative impacts of this wilderness management plan when considered in combination with past, present, and reasonably foreseeable future actions would result in the maintenance of, or slight improvement over, current levels of wilderness qualities with minimal user regulations.

6 Mitigation and Monitoring

No mitigation or monitoring beyond that proposed in Chapter Two would occur.

7 List of Preparers

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BLM and Great Basin Institute Employees Who Provided Periodic Contributions or Expertise
Marla Kirschbaum, Recreation/GIS Technician, Great Basin Institute

List of Agencies and Persons Notified of Intent to Prepare Plan
Sierra Front-Northwestern Nevada Resource Advisory Council (RAC)
NE California-NW Nevada Resource Advisory Council (RAC)
Nevada Department of Wildlife
Nevada State Clearinghouse – Department of Administration, Budget, and Planning Division
Summit Lake Paiute Tribe
Susanville Indian Rancheria
Cedarville Rancheria Tribal Office
Pyramid Lake Paiute Tribe
Reno-Sparks Indian Colony
Fort Bidwell Indian Community Council
U.S. Fish & Wildlife Service
Bureau of Indian Affairs, Western Nevada Agency
Grazing Permittees
All individuals and organizations on the District's 2006 Wilderness Mailing List

8 Consultation and Coordination

A letter was sent to tribes inviting comments on the plan on February 12, 2009. The Proposed Wilderness Management Plan was presented at a Tribal Coordination Meeting at the Summit Lake Reservation on May 16, 2009. Section 7

A public notification will be posted on the Winnemucca District Office website when this Environmental Assessment is completed, a decision is reached, and a 30-day appeal period initiated.

9 Public Involvement

The first internal scoping meeting was held at the Winnemucca District Office on December 15, 2005. A letter requesting public input was sent to individuals and organizations on the Winnemucca District Office wilderness mailing list, advising of the BLM's intention to prepare a Wilderness Management Plan for the Black Rock High Rock Area. The 30 day scoping period which ended on March 30, 2006 was announced to the general public in a press release as well as in the letter to the mailing list. The first interdisciplinary meeting held on October 10, 2007. A letter was sent to appropriate grazing permittees asking for input on the BLM's assessment of access needs for range developments on December 17, 2008. A letter was sent to tribes inviting comments on the plan on February 12, 2009. The Proposed Wilderness Management Plan was presented at a Tribal Coordination Meeting at the Summit Lake Reservation on May 16, 2009. The preliminary EA was made available to the public for review April 25, 2011 through June 1, 2011. Public meetings will be held in Winnemucca, Lovelock, Gerlach, and Reno, NV the week of May 23, 2011.

10 Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level (Wild Horses and Burros)
AML	Abandoned Mine Lands
AMR	Appropriate Management Response (Fire)
ARPA	Archaeological Resources Protection Act of 1979
AUM	Animal Use Month
BLM	Bureau of Land Management
EA	Environmental Assessment
ES & R	Emergency Stabilization and Rehabilitation
FLPMA	Federal Land Policy and Management Act
FMP	Fire Management Plan
FMU	Fire Management Unit
FRCC	Fire Regime Condition Class
GPS	Global Positioning System
HMA	Herd Management Area (Wild Horses and Burros)
HMAP	Herd Management Area Plan
ISA	Instant Study Area
LCT	Lahontan Cutthroat Trout
MIST	Minimum Impact Suppression Tactics
MOU	Memorandum of Understanding
MRDG	Minimum Requirements Decision Guide
NAGPRA	North American Grave Protection and Repatriation Act
NCA	National Conservation Area
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
OHV	Off Highway Vehicle
RAMP	Recreation Area Management Plan
RAWS	Remote Automated Weather System
RIP	Range Improvement Project aka Range Development Project

RMP	Resource Management Plan
SHPO	State Historic Preservation Office
SRP	Special Recreation Permit
WHB	Wild Horse and Burro
WILDCAD	Wild Land Computer Aided Dispatch
WMP	Wilderness Management Plan
WSA	Wilderness Study Area

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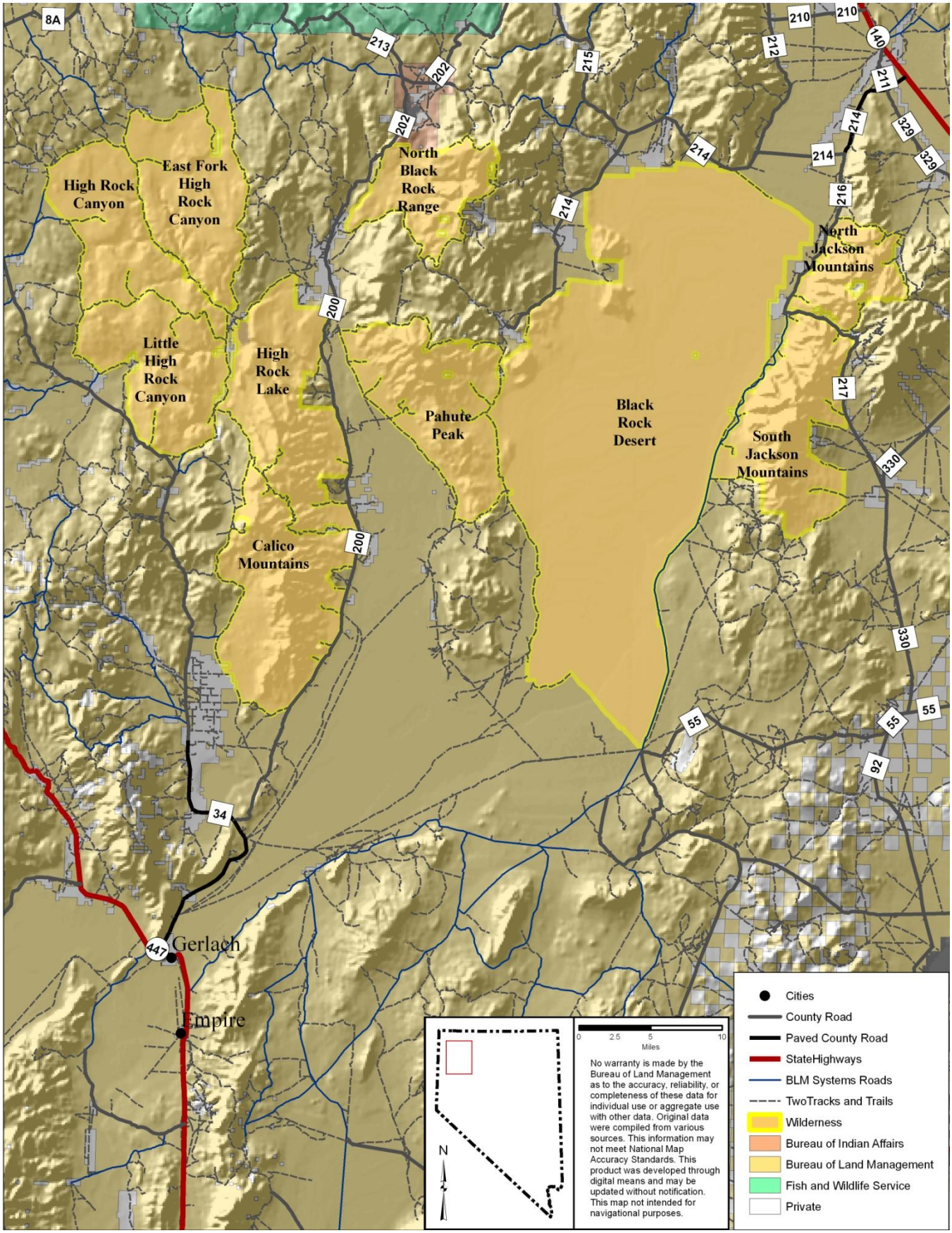
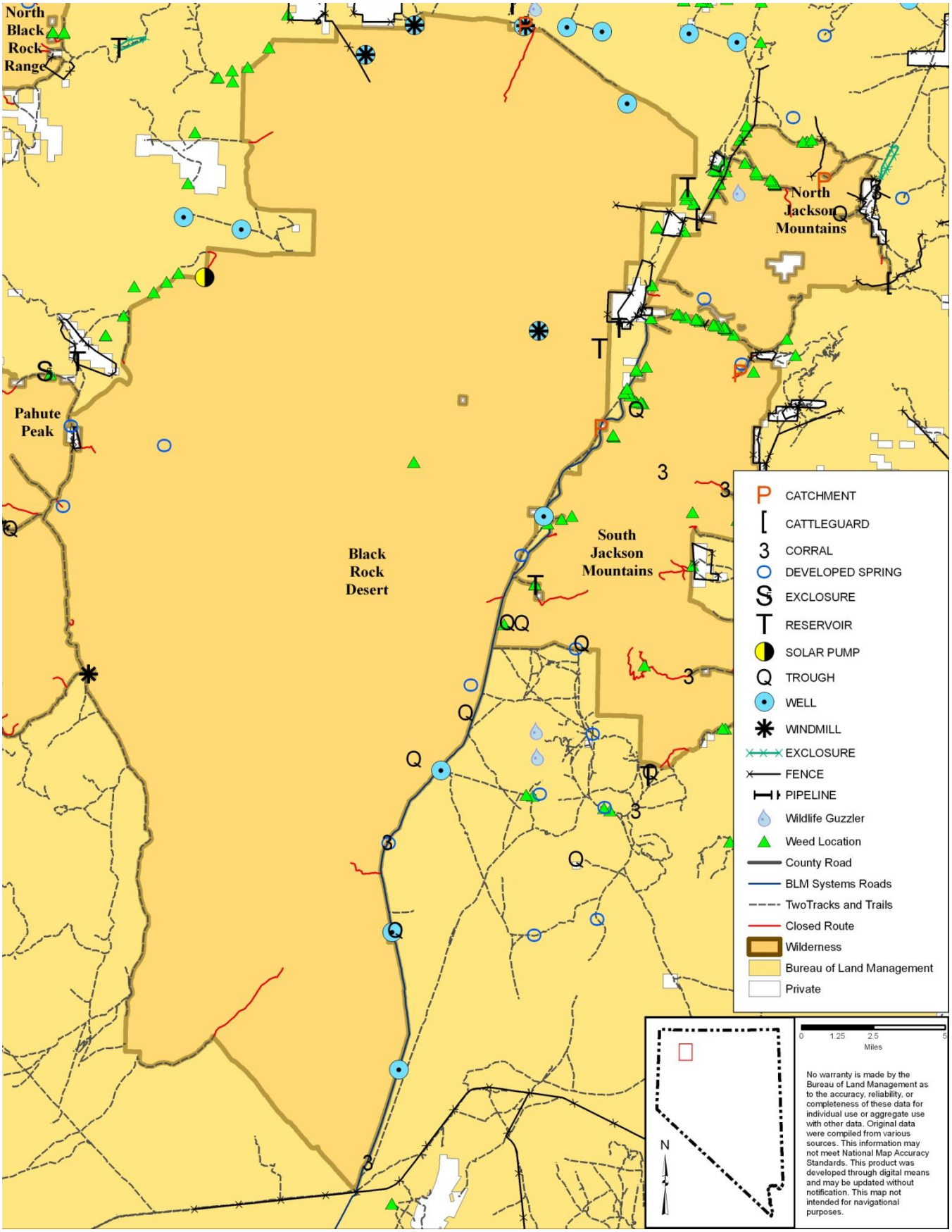
12 Maps

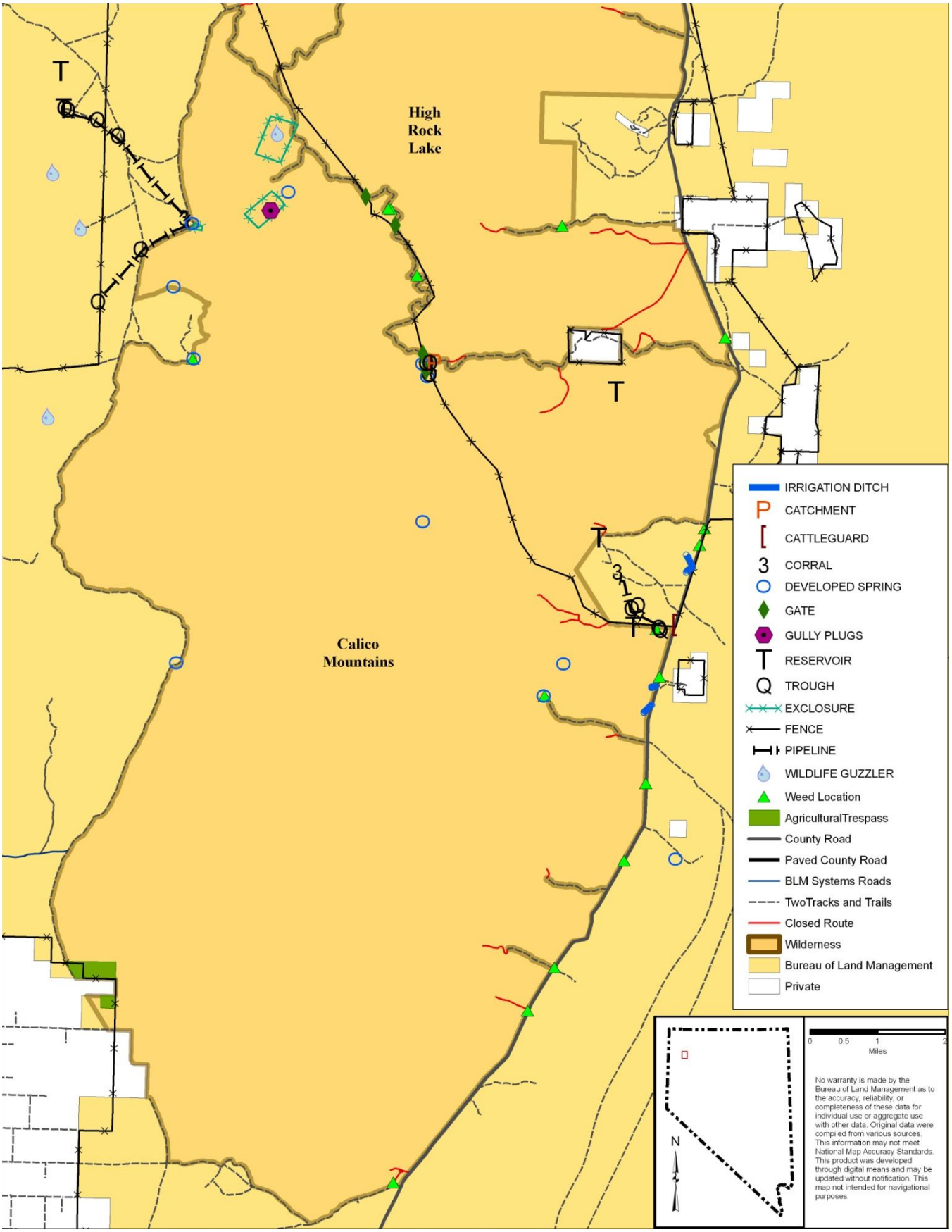
The following maps show the planning area and specific areas of interest.



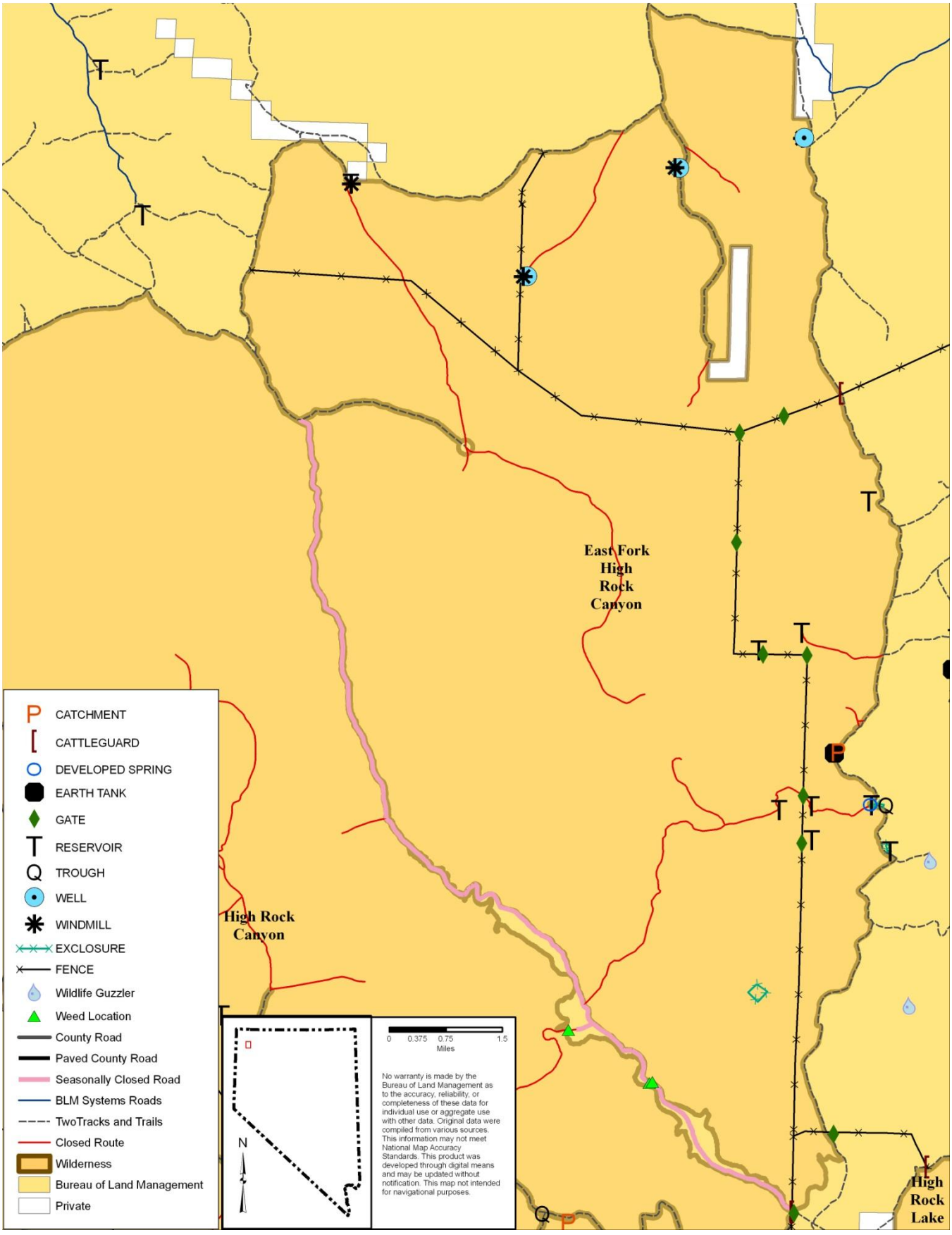
Map 1. Planning Area



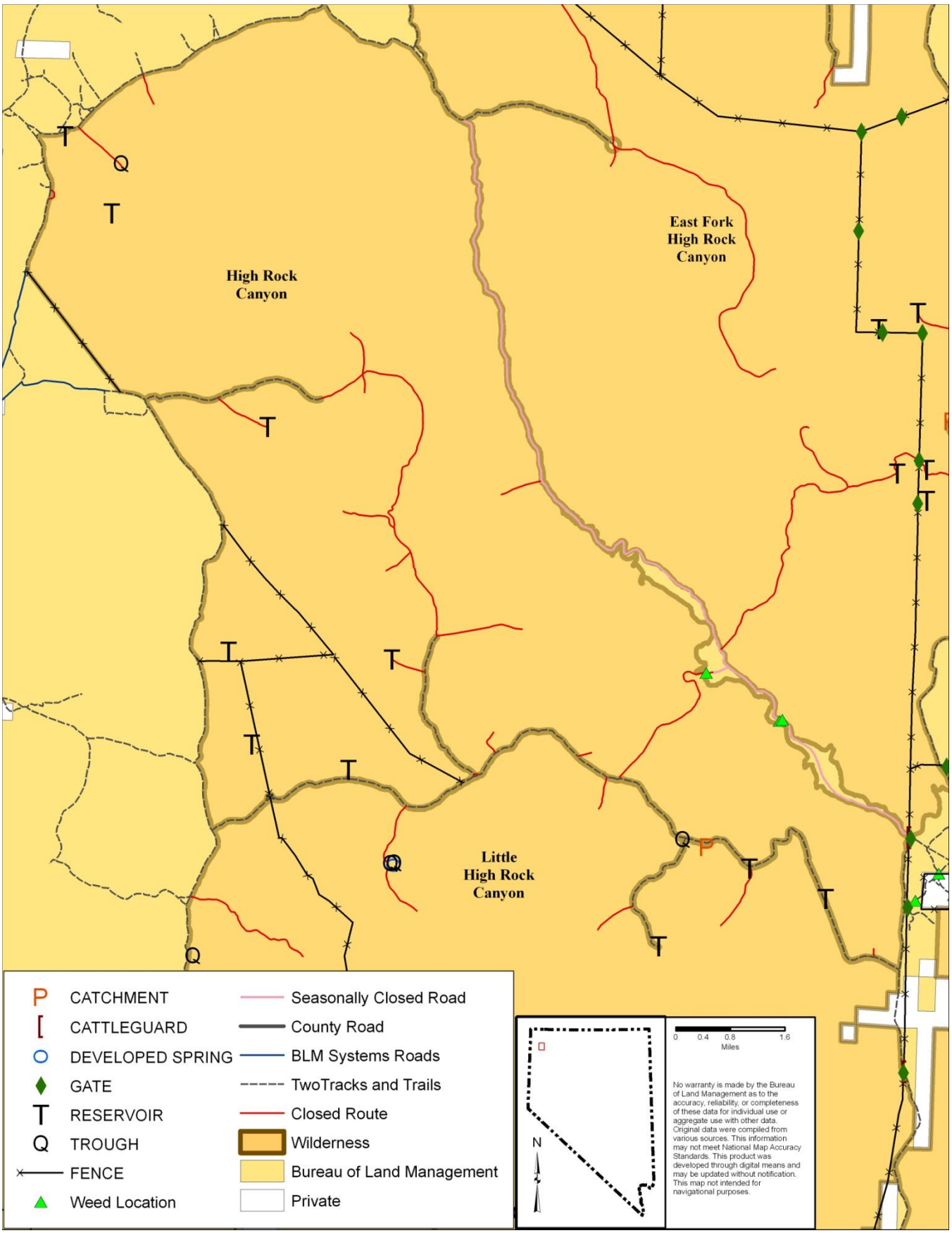
Map 2. Black Rock Desert Wilderness



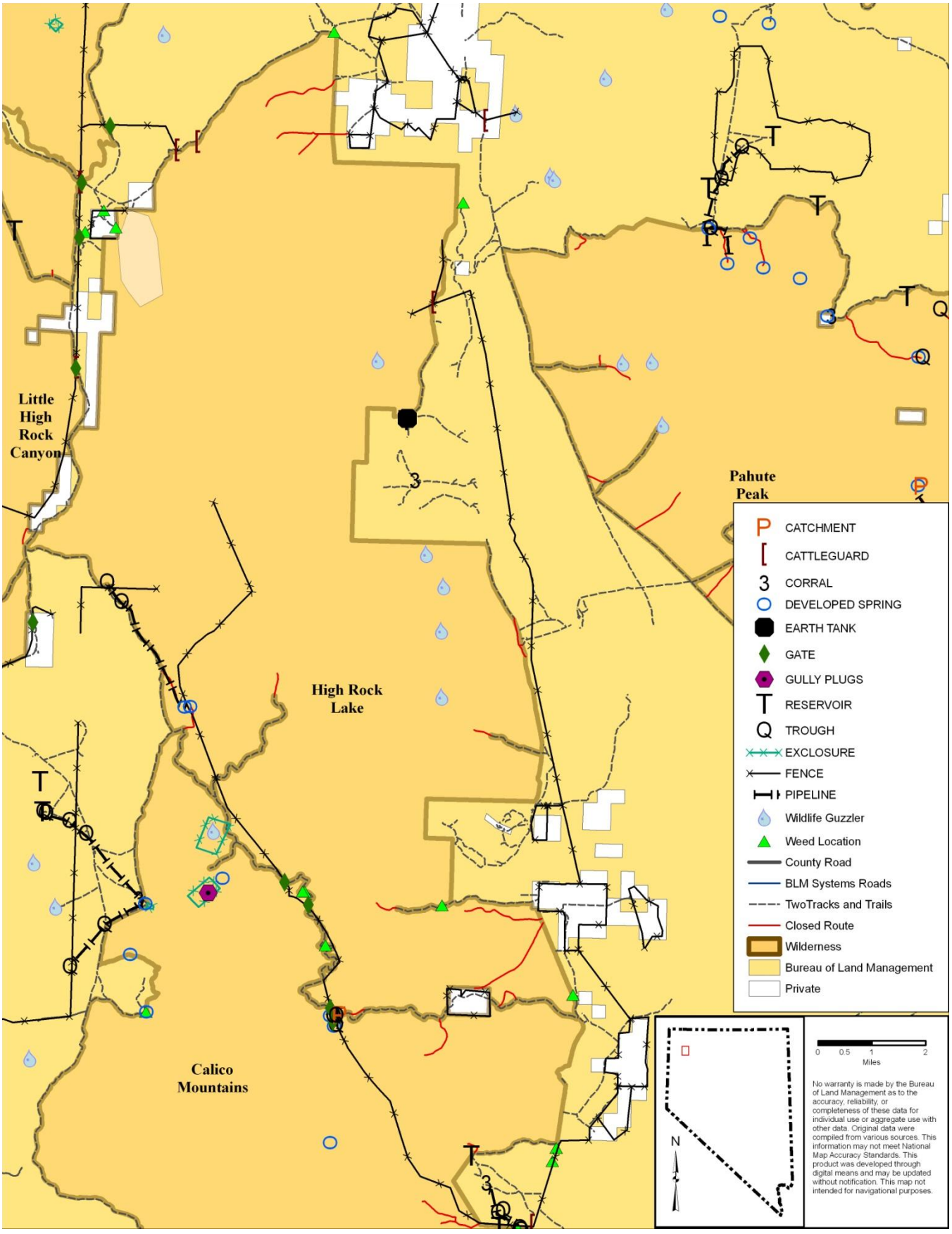
Map 3. Calico Mountains Wilderness



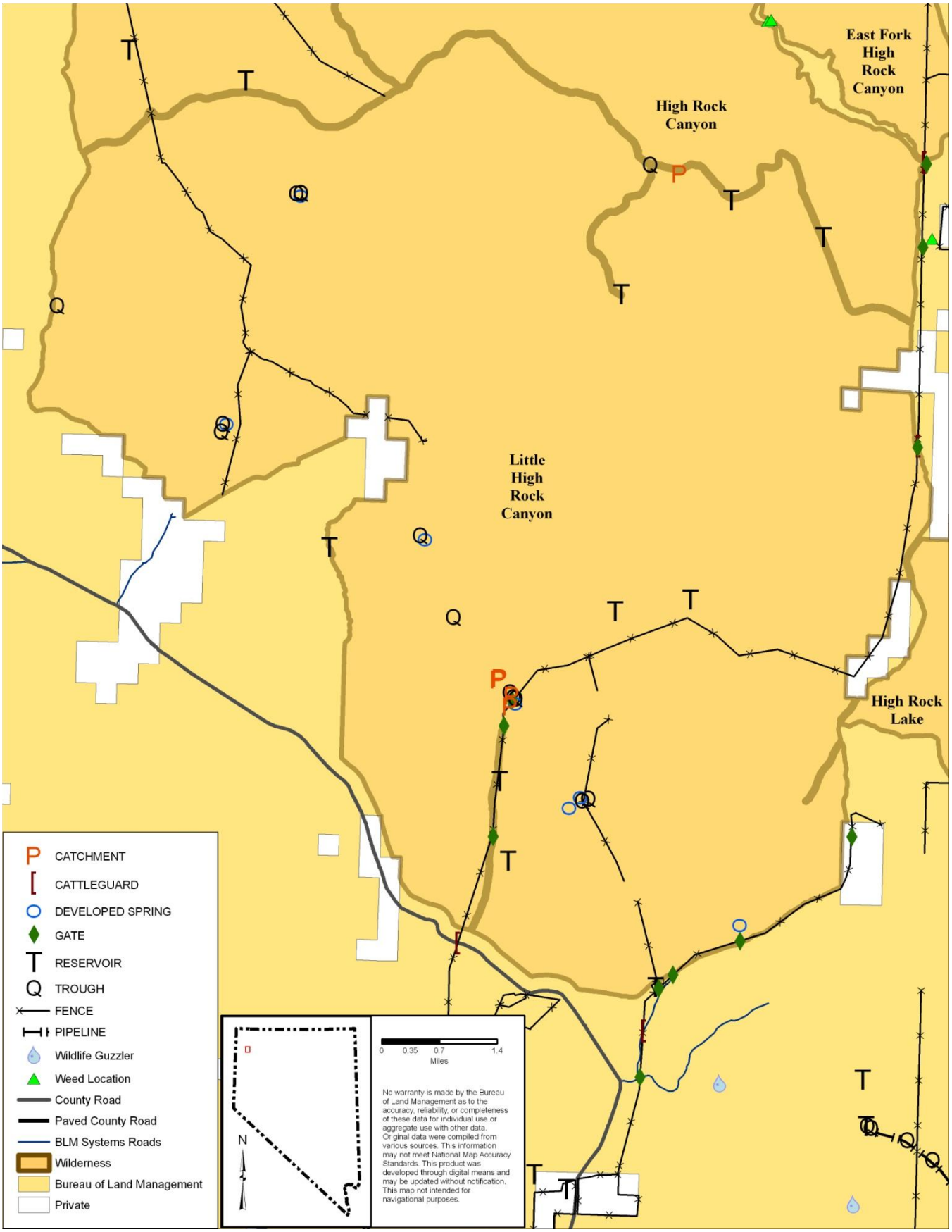
Map 4. East Fork High Rock Canyon Wilderness



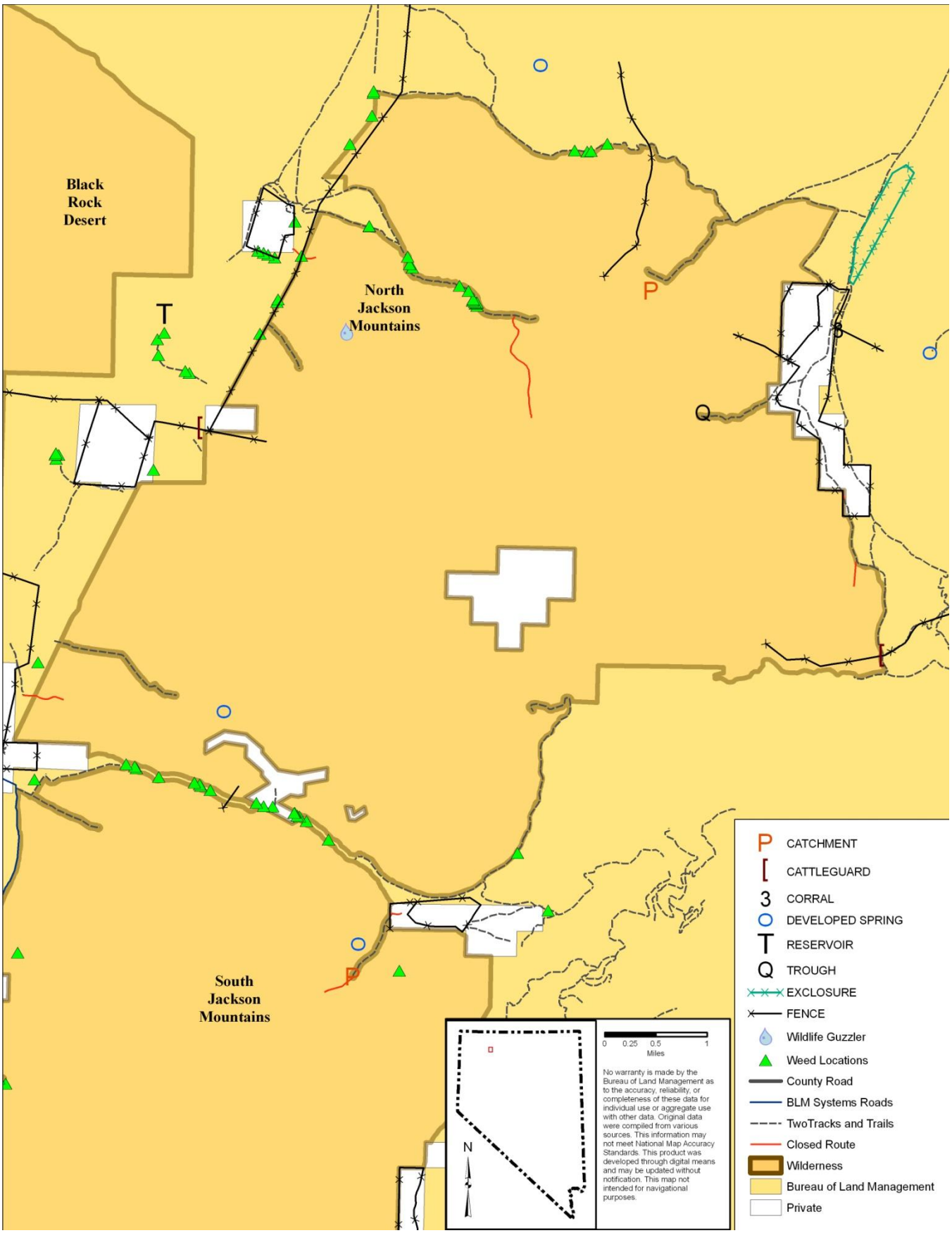
Map 5. High Rock Canyon Wilderness



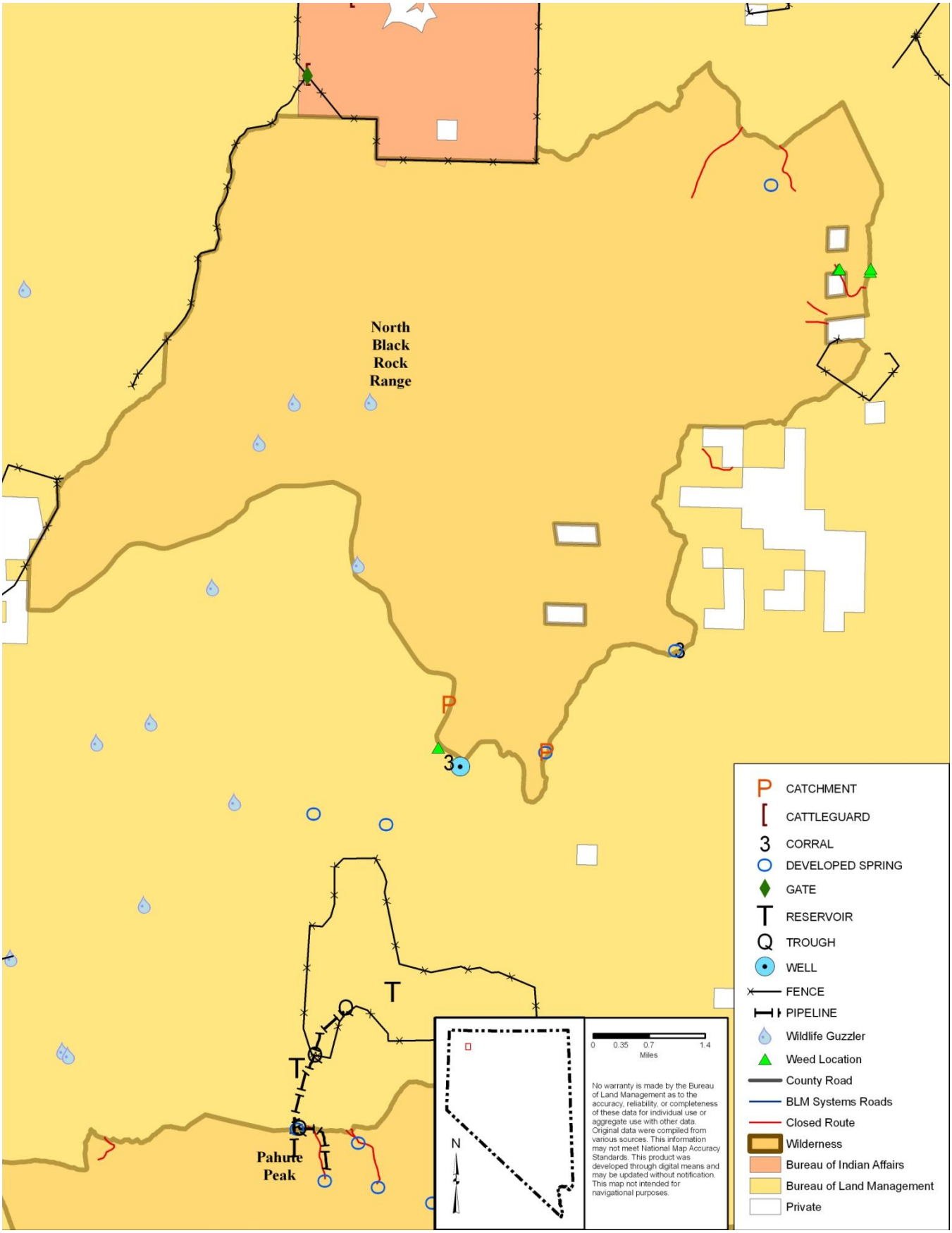
Map 6. High Rock Lake Wilderness



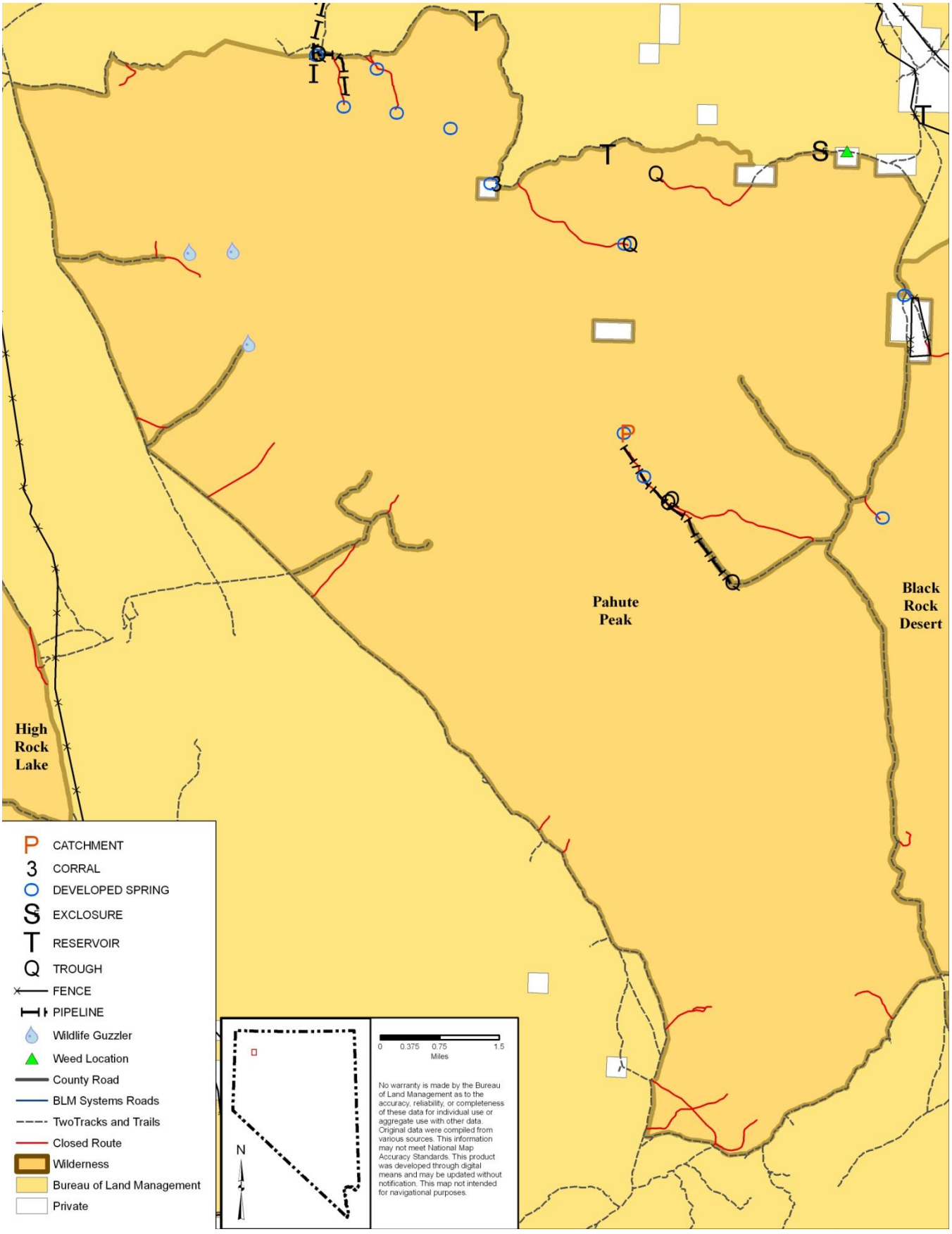
Map 7. Little High Rock Canyon Wilderness



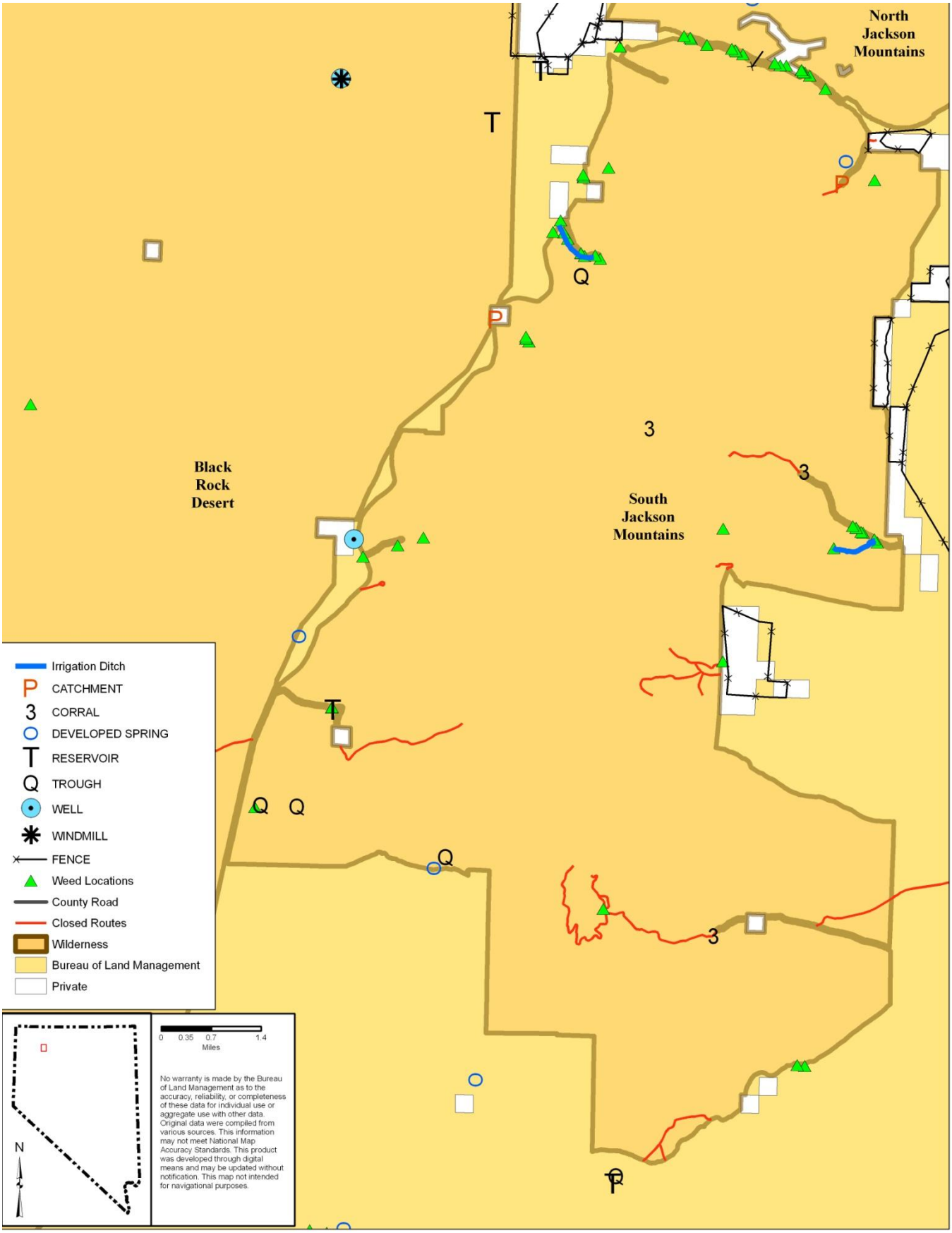
Map 8. North Jackson Mountains Wilderness



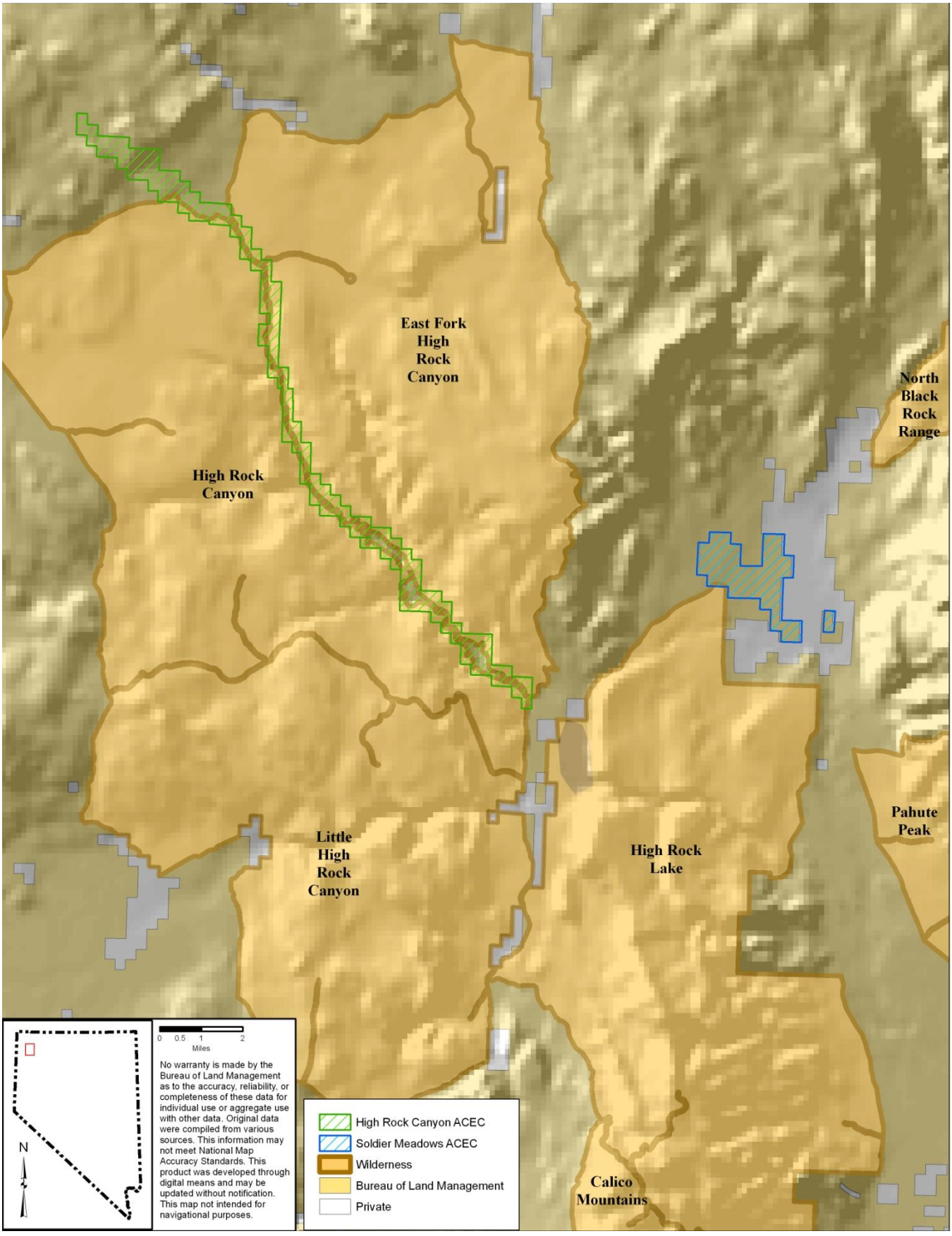
Map 9. North Black Rock Range Wilderness



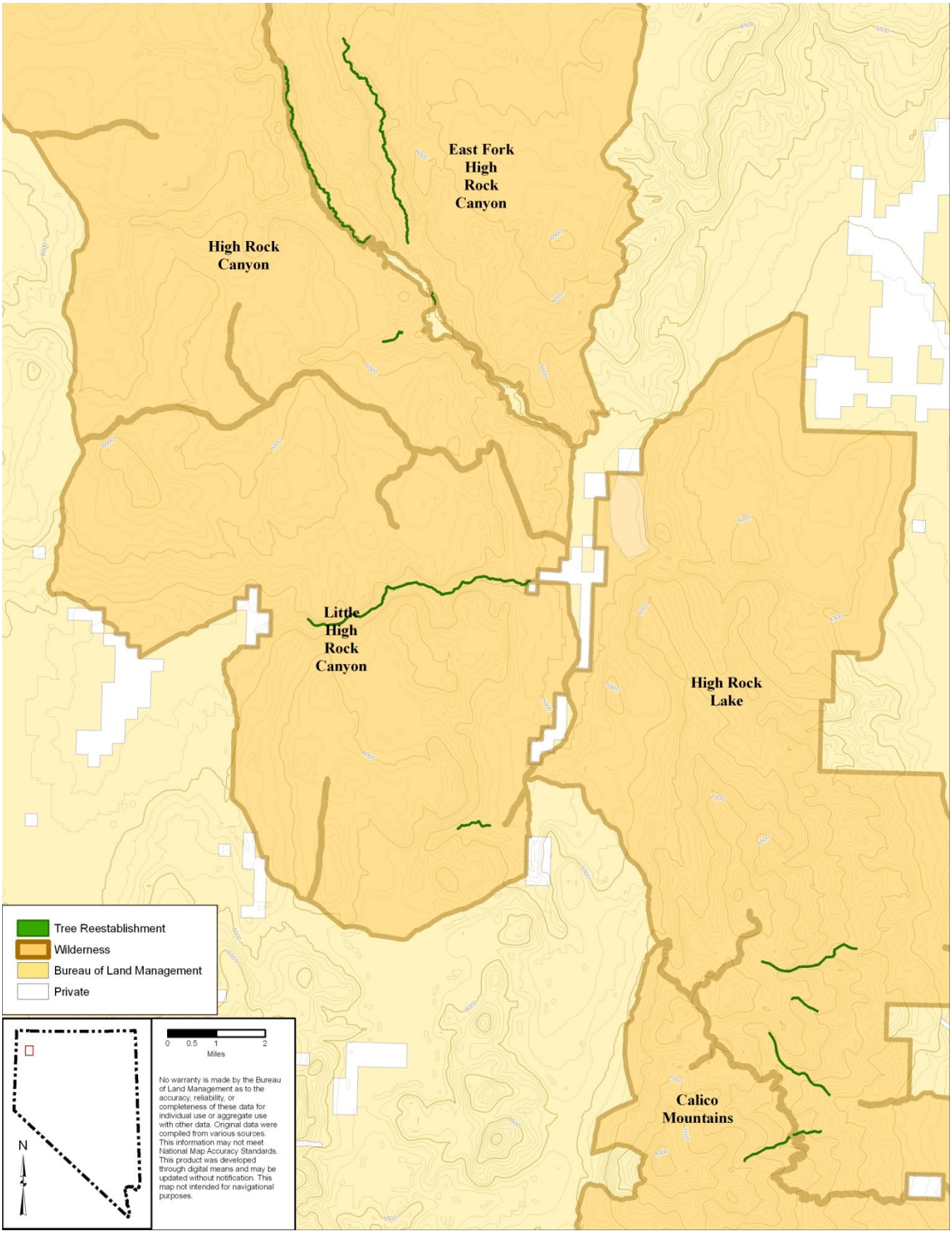
Map 10. Pahute Peak Wilderness



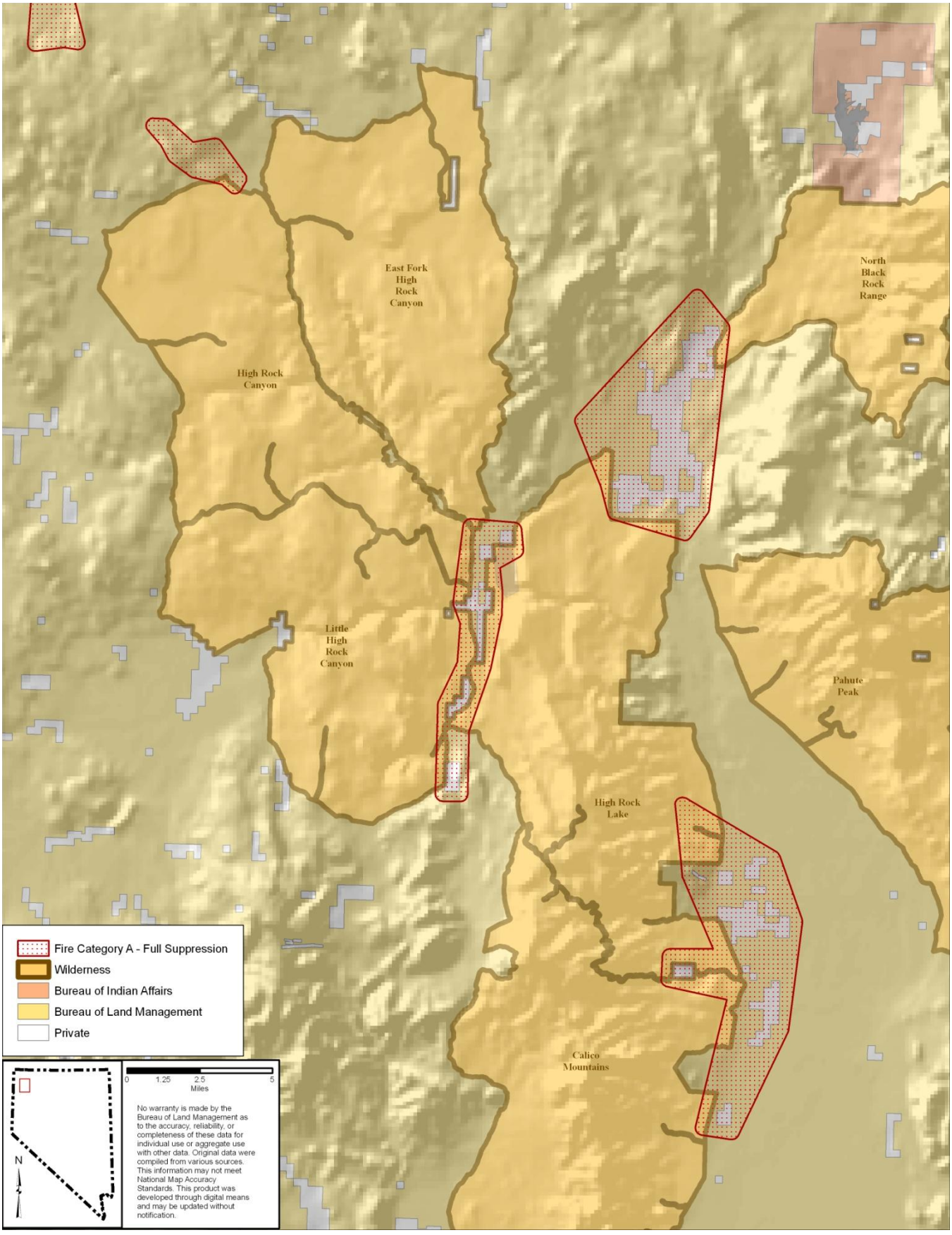
Map 11. South Jackson Mountains Wilderness



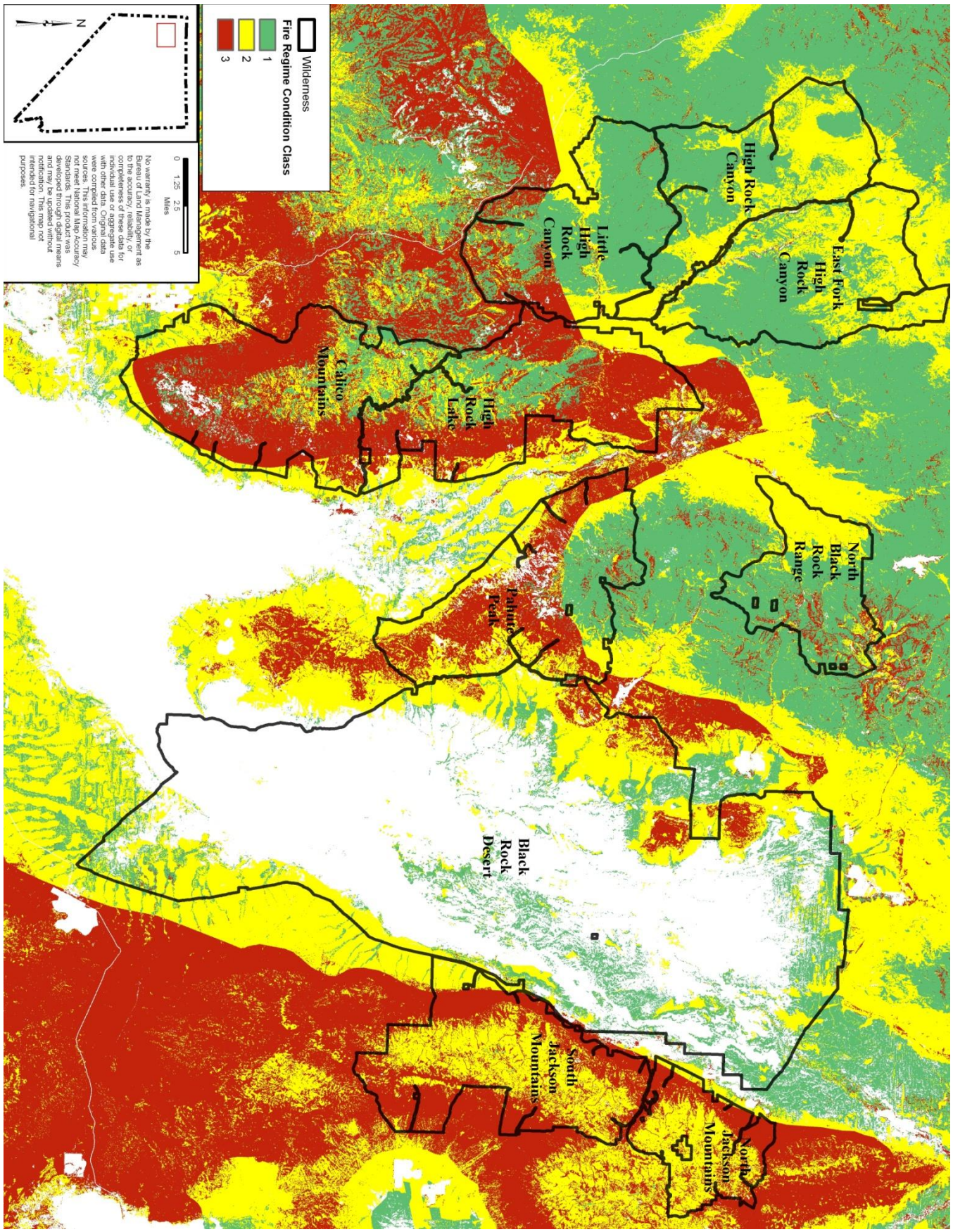
Map 12. Areas of Critical Environmental Concern (ACEC)



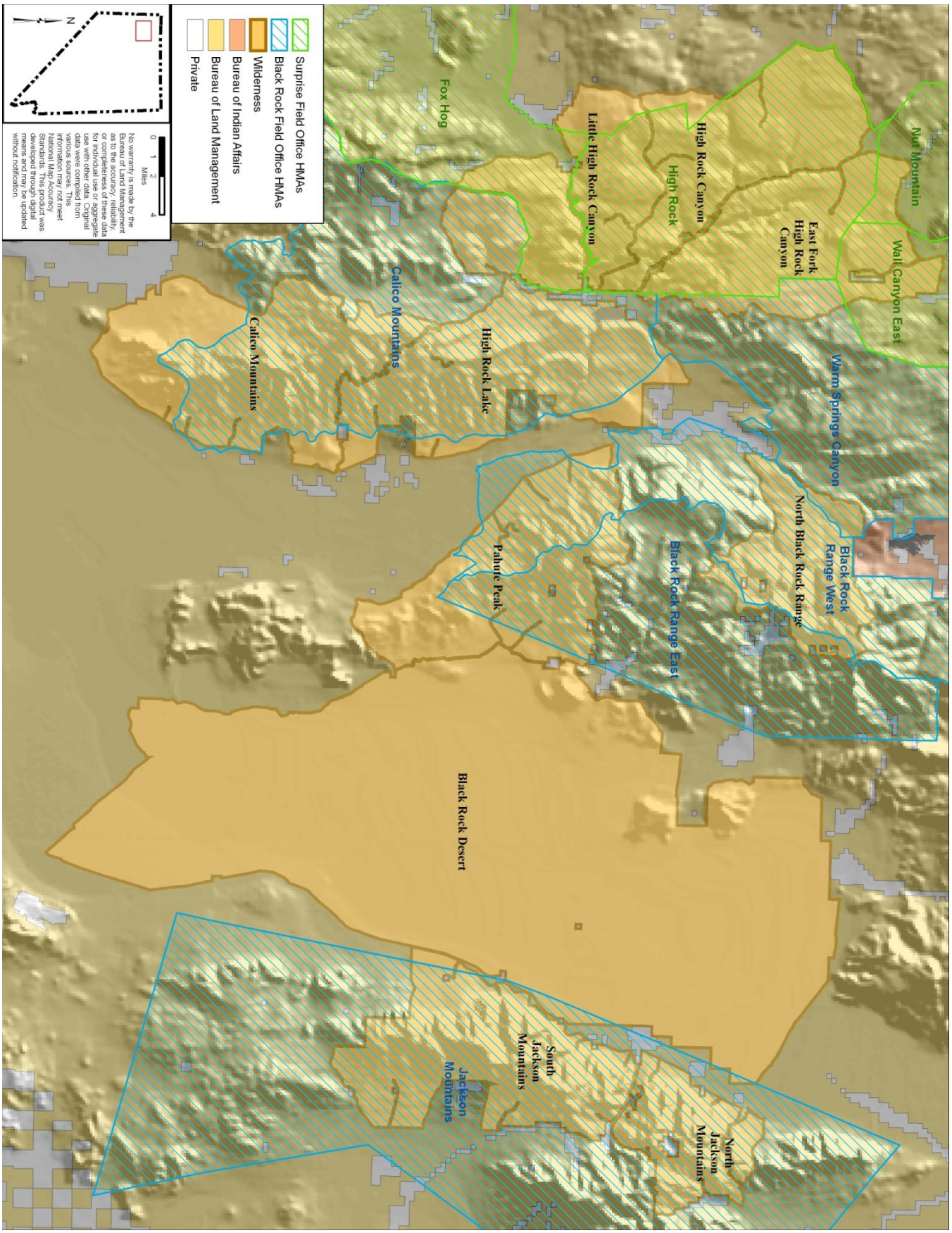
Map 13. Aspen and Cottonwood Reestablishment Sites



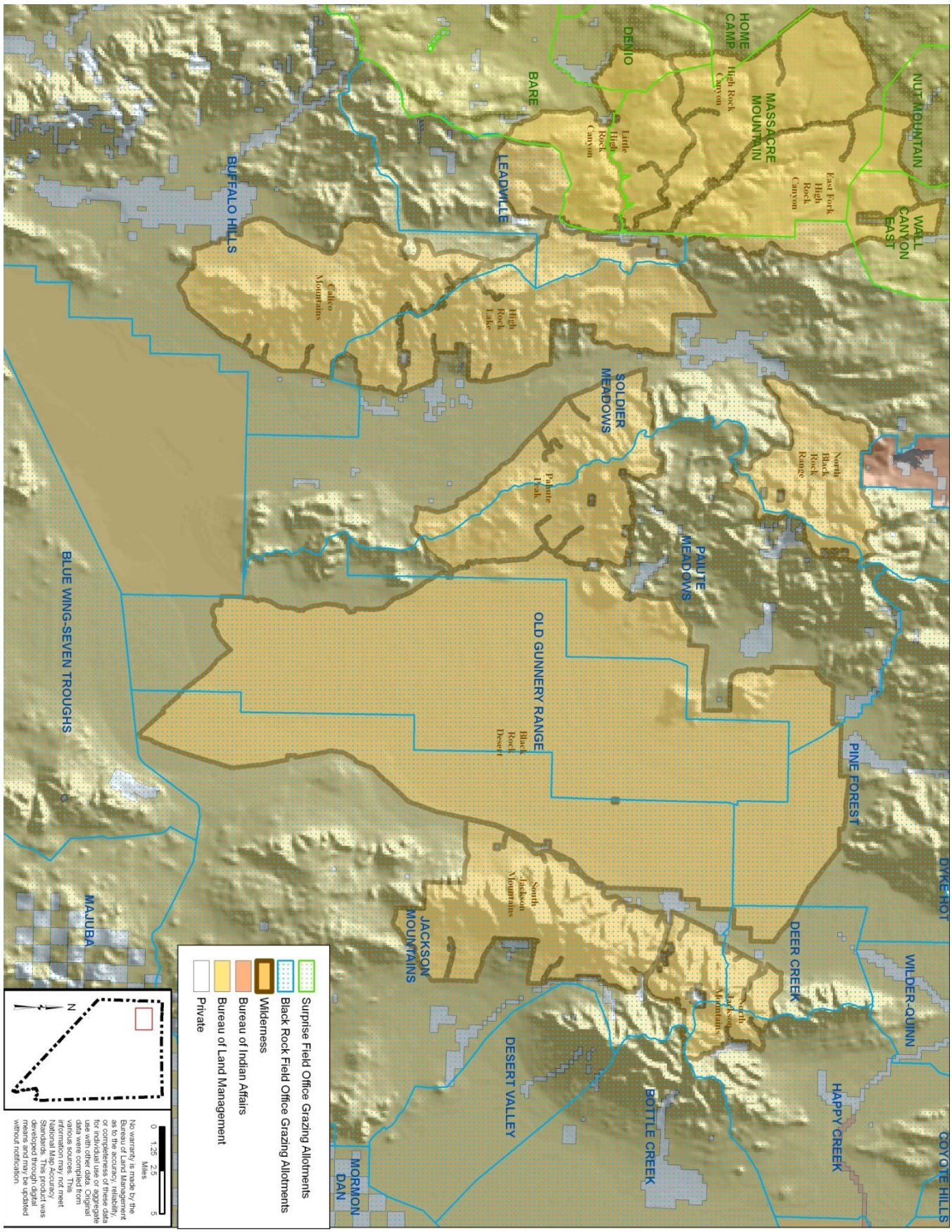
Map 14. Fire Category A: Full Suppression



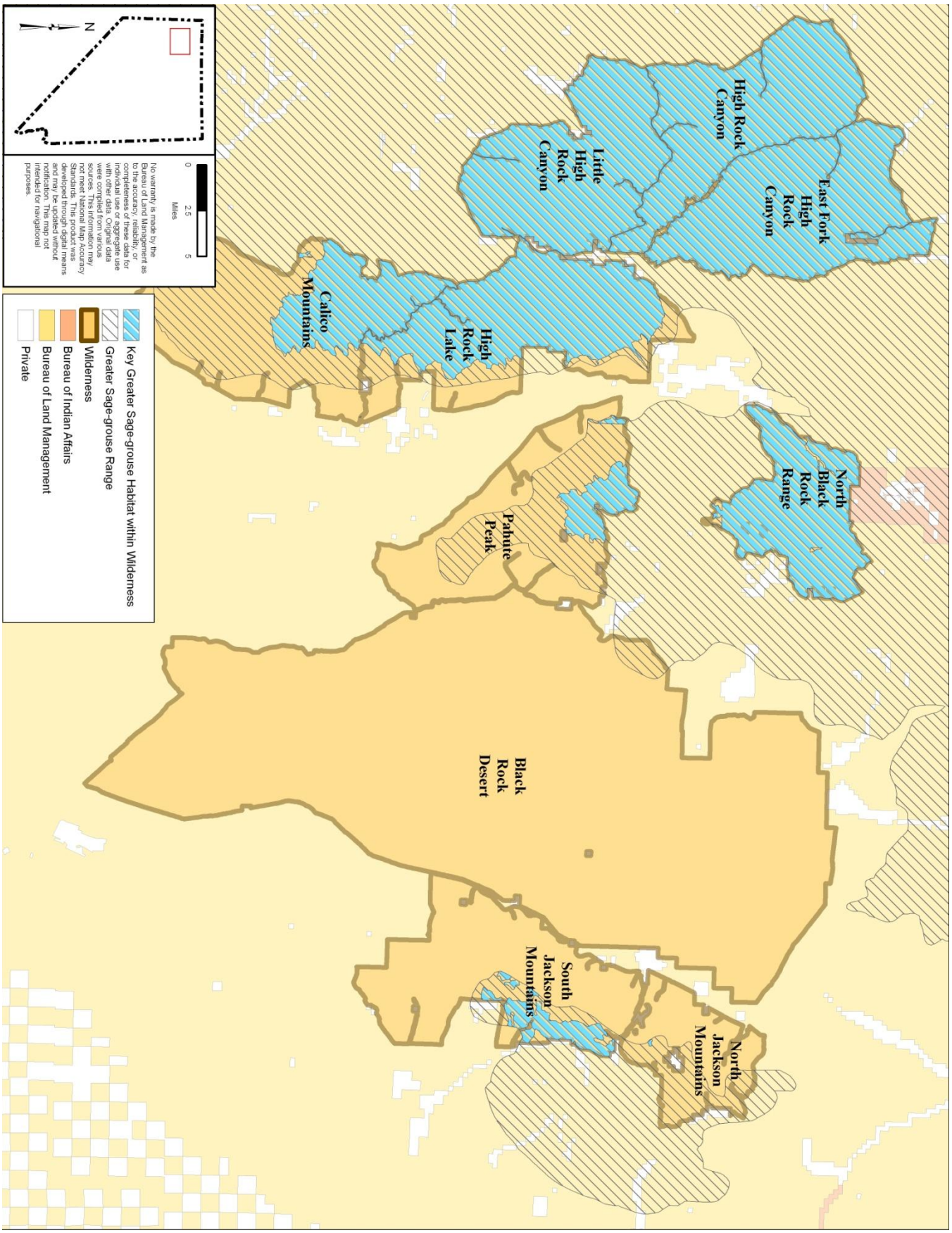
Map 15. Fire Regime Condition Class



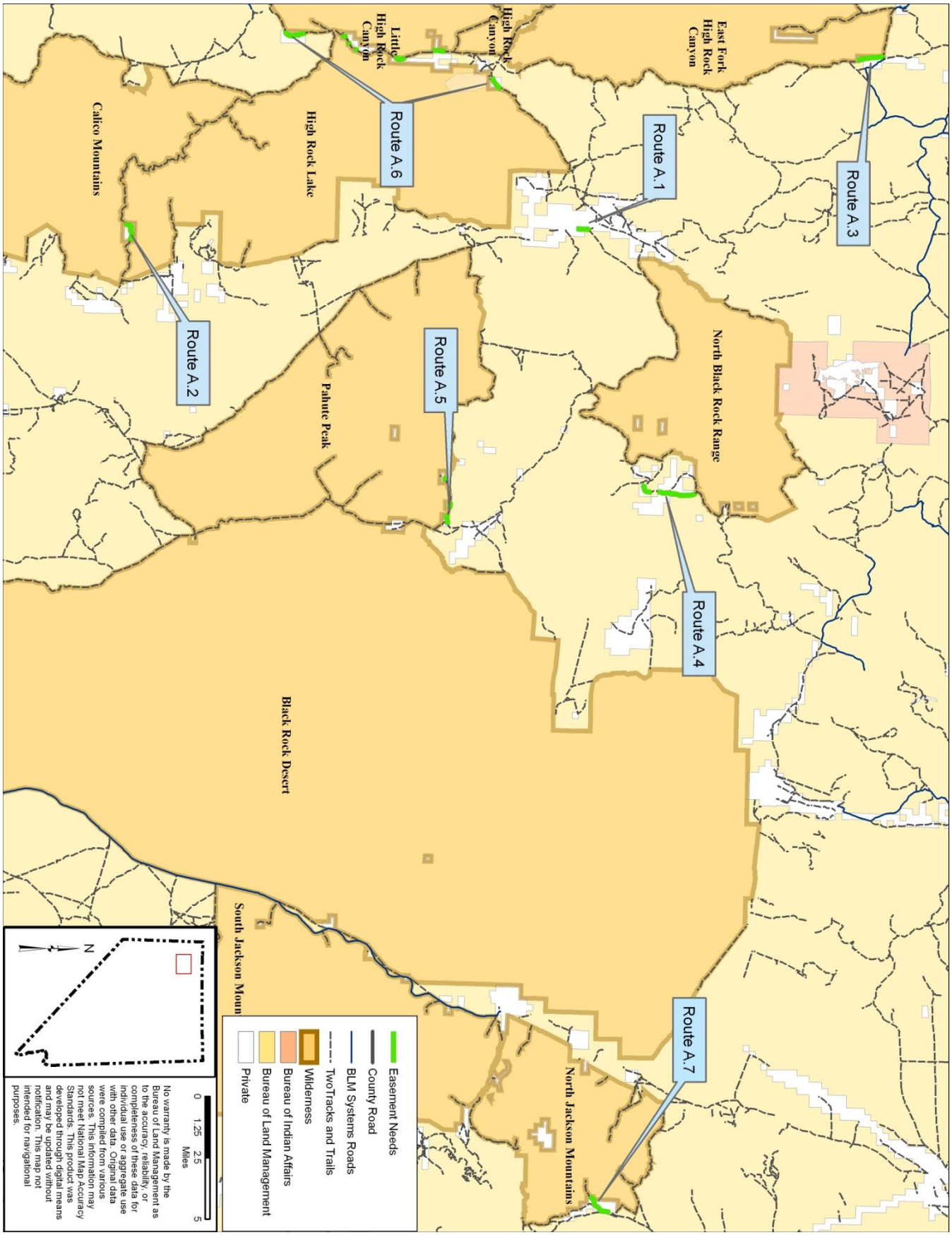
Map 16. Herd Management Areas (HMAs)



Map 17. Grazing Allotments



Map 18. Sage Grouse Habitat



Map 19. Easement Needs