



Off-Highway Vehicle Route Restoration Project

EA# CA-170-06-26

BLM Bishop Field Office
351 Pacu Lane
Bishop, CA 93514

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FINDING OF NO SIGNIFICANT IMPACT/DECISION RECORD

EA#CA-170-06-26

Off-Highway Vehicle Route Restoration Project

I have reviewed this environmental assessment to affirm the disposition and potential resolution of any potentially significant environmental impacts. The proposed project to implement OHV route restoration actions has been designed to incorporate protective measures and implementation requirements that substantially reduce the occurrence of significant environmental impacts. I have determined that the proposed action with the project implementation requirements described below will not have any significant impacts on the human environment and that an Environmental Impact Statement is not required.

There would be no negative effect on threatened or endangered species as a result of the action.

I have determined that the proposed project is in conformance with the Bishop Resource Management Plan, which was approved March 25, 1993. This plan has been reviewed, and the proposed action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5.

It is my decision to implement the project with the proposed project measures identified in the proposed action and below:

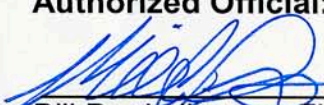
Project Implementation Requirements:

The following protective measures will be applied during restoration project implementation to reduce the probability of residual impacts and the need for subsequent mitigation:

1. Prior to any ground disturbing activity required for route maintenance, route re-route, or route closure and restoration, the site will be surveyed for archaeological and sensitive plant and animal resources. A Class III inventory standard within the Area of Potential Effect (APE) will be used. Project design would be adjusted to avoid any identified resources and ensure their protection. If previously undiscovered surface or subsurface cultural resources are found during project implementation, the project will be stopped and the Bishop Field Office Archaeologist notified. All cultural resource evaluations and determinations will be carried out pursuant to the State Protocol Agreement between the California BLM State Director and the California State Historic Preservation Officer (2004), BLM 8100 Manual guidance, and the National Historic Preservation Act.

2. Construction activities required for project implementation will follow RMP seasonal protection criteria designed to avoid disturbance to wildlife during critical seasonal use periods (BLM, 1993).
3. The Bishop Field Office Weed Coordinator will approve the source of any road base or fill required for project implementation as "weed free" to avoid noxious weeds proliferation.
4. All vehicles, tools and material used during project implementation will be washed prior to transport to the project site to avoid noxious weeds proliferation.
5. All improvements required for project implementation will be limited to the least intensive method required to meet project objectives. Within designated Wilderness/WSA's, the "minimum tool" criteria will be applied.
6. A project orientation will be provided to all construction personnel to educate them on project specific mitigation measures to minimize the potential impacts of construction activities.
7. Biological monitors will be present at the project site during construction related activities.
8. Staging areas will be clearly flagged to prevent equipment from damaging sensitive resources, archaeological resources or sensitive plant and animal species and associated habitats.
9. Improvements to designated routes and adjacent parking areas and undeveloped campsites will be completed before redundant access routes to sites are closed to ensure recreational access.
10. Surveys for invasive weed infestations will be completed prior to and the completion of the project. If any invasive weeds are identified within or adjacent to the project areas, the weeds will be removed to reduce the risk of an invasive soil seed bank developing.
11. Vehicular access to the proposed project area will occur on an existing road/vehicle track.

Authorized Official:



Bill Dunkelberger, Field Office Manager

Date:



ENVIRONMENTAL ASSESSMENT, FONSI AND DECISION RECORD

**BLM, Bishop Field Office
351 Pacu Lane, Suite 100
Bishop, CA 93514**

EA Number: CA-170-06-26

Lease/Serial/Case File No.: 8340 – Off Highway Vehicle Program

Proposed Action Title/Type: Off-Highway Vehicle Route Restoration Project

Location of Proposed Action: BLM Bishop Field Office

I. PROJECT INFORMATION

1. Purpose and Need for the Proposed Action

The BLM Bishop Field Office has identified a resource need to design and implement management/restoration projects using a suite of different restoration techniques at an area-wide level. The specific management actions identified in the Description of the Proposed Action are standard measures and best management practices BLM has applied in the past two decades throughout the area as per the High Desert OHV Management Strategy (1993) and the Interagency Vehicle Access Strategy (1997) direction.

In the past, BLM would typically prepare separate environmental documentation, public coordination/involvement activities, implementation, monitoring and maintenance for each project. Often these projects and processes were redundant. By analyzing the impacts of standard restoration techniques at an area-wide level a more comprehensive, timelier and less duplicative project implementation process occurs. It is expected that approximately 2 to 6 field actions would be identified annually as a “project package” for implementation using these techniques.

The proposed action would apply to the nine management areas designated in the Bishop Resource Management Plan (BLM, 1993) and their commensurate plant and wildlife communities.

2. Need for the Proposed Action

Recovery of vegetation and associated wildlife habitat in arid and semi-arid systems following disturbance is a dynamic process that is influenced by the intensity/area of disturbance, micro-site heterogeneity, climate, and life history attributes of plant species including seed bank dynamics. Even moderate disturbance in a desert scrub dominated site can take 60 years to reach predisturbance biomass and 180 years for

reasonable recovery of species diversity even on non-compacted soils (Webb et al., 1983). Loss of plant cover exacerbates harsh conditions such as increased wind velocities, water loss, and increases in solar radiation.

These changes affect the ecological function of the site including the ability of the soil to receive and store moisture and provide favorable conditions for the development of beneficial soil organisms. Such areas are also at increased risk of weed invasion which limits the ability of native plant species to re-establish due to increased competition for soil moisture and nutrients. Once areas are subjected to disturbance, the natural re-establishment of native species is inhibited and often active measures are necessary to assist in the recovery of most impacts, especially on more arid sites. Proactive identification and early restoration of sites before they lose their capacity for recovery is crucial in the success of restoration efforts and maintaining long-term site productivity.

Example of site type (alkali meadow) where restoration would be a resource priority.



Pre-boardwalk and causeway (1998)-
Long Valley Management Area



Post-project implementation (2001)

3. Plan Conformance and Relationship to Other Planning Documents

The proposed action is in conformance with the Bishop Resource Management Plan (RMP), approved March 25th, 1993. The proposed action was developed to implement RMP guidance and designed to conform with General Policies, Area Manager's Guidelines, Valid Existing Management, Standard Operating Procedures, Decisions and Support Needs prescribed in the Bishop RMP.

RMP Decisions and Standard Operating Procedures that support the proposed action include:

1. Manage the resource area to provide for a variety of dispersed recreation opportunities. Emphasize primitive, semi-primitive motorized, semiprimitive non-motorized and roaded natural experiences (BLM, 1993, p.17).

2. Yearlong Protection of endangered, threatened, candidate, and sensitive plant and animal habitats (BLM, 1993, p.17).
3. Yearlong Protection within 1/3 mile of sage grouse leks (BLM, 1993, p.17).
4. Seasonal Protection within 2 miles of active sage grouse leks from 5/1 to 6/30 (BLM, 1993, p.17).
5. Yearlong Protection of aspen groves, meadows and riparian areas (BLM, 1993, p.17).
6. Manage candidate species, sensitive species and other species of management concern in a manner to avoid the need for listing as state or federal endangered or threatened species (BLM, 1993, p.12).
7. Relocate existing roads out of riparian areas where feasible or necessary to restore watershed stability (BLM, 1993, p.13).
8. Mitigation, where needed, will be applied to eliminate or reduce resource problems caused by OHV use (BLM, 1993, p.14).
9. Manage all activities to conform to Visual Resource Management (VRM) standards (BLM, 1993, p.17).
10. Identify and implement closure or seasonal closure of vehicle routes impacting sensitive plant habitats or areas where mule deer or sage grouse concentrate (BLM, 1993, p.33).

The proposed action also tiers to the High Desert Off-Highway Vehicle Strategy (1993) and the Interagency Vehicle Access Strategy (1996) the themes of which are to ensure resource protection while providing OHV opportunities.

In addition, the proposed action is consistent with BLM's "National Sage-Grouse Habitat Conservation Strategy" (BLM, 2004) which identifies the need to develop and implement conservation actions to mitigate sage grouse impacts from recreation. The proposed action would also implement habitat conservation actions identified in the U.S. Fish and Wildlife Service Owens Basin Aquatic Species Recovery Plan (1998).

4. Description of the Proposed Action

The proposed action would implement a suite of restoration/management prescriptions at an area-wide level, while maintaining semi-primitive access that currently comprises most of the BLM public lands in the area. The project area would encompass the nine management areas identified in the Bishop Resource Management Plan (BLM, 1993) (Figure 1) and 10 major vegetation types (Figures 2, 3, and 4).

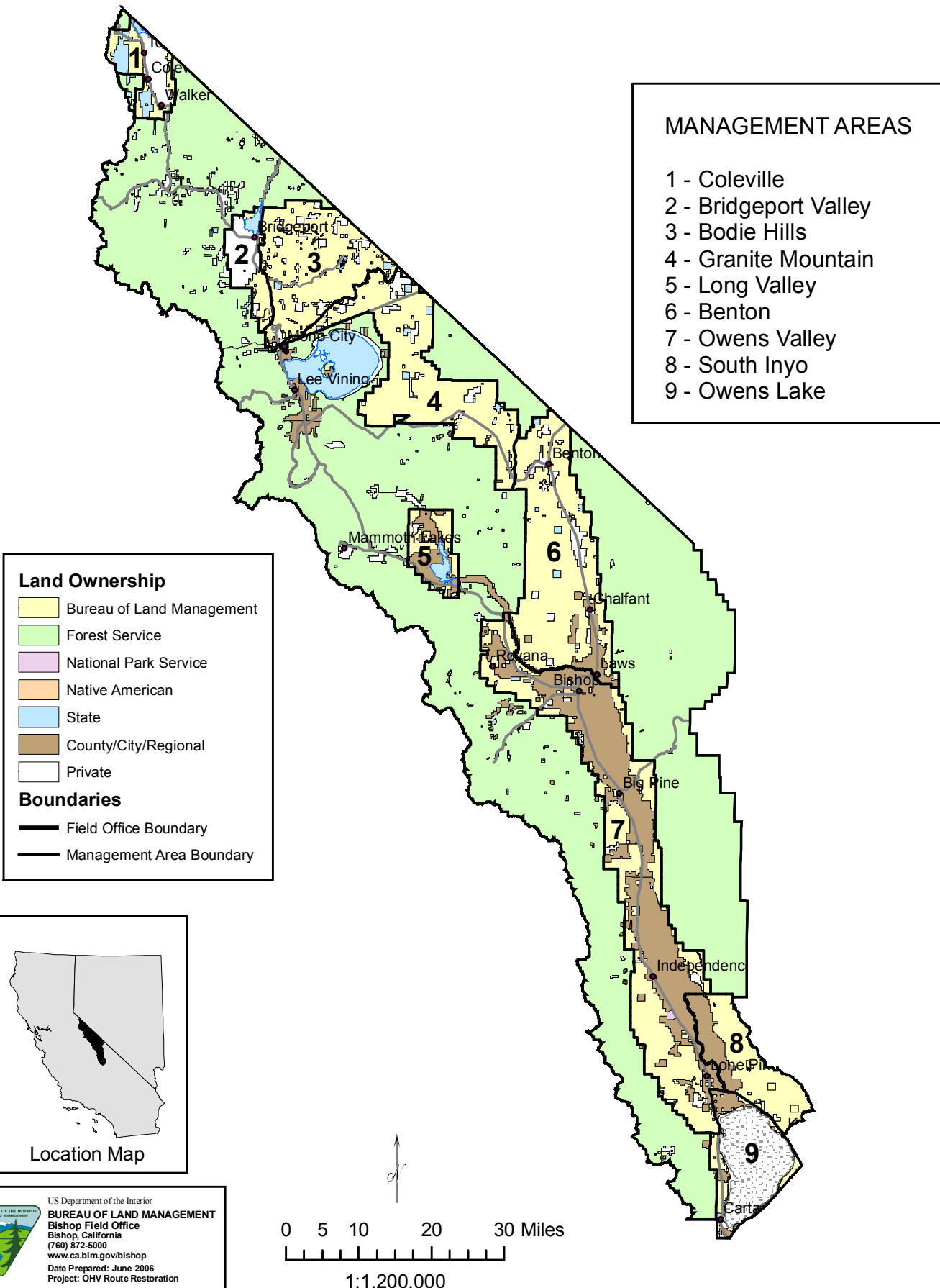


Figure 1. Bishop Field Office Management Areas.

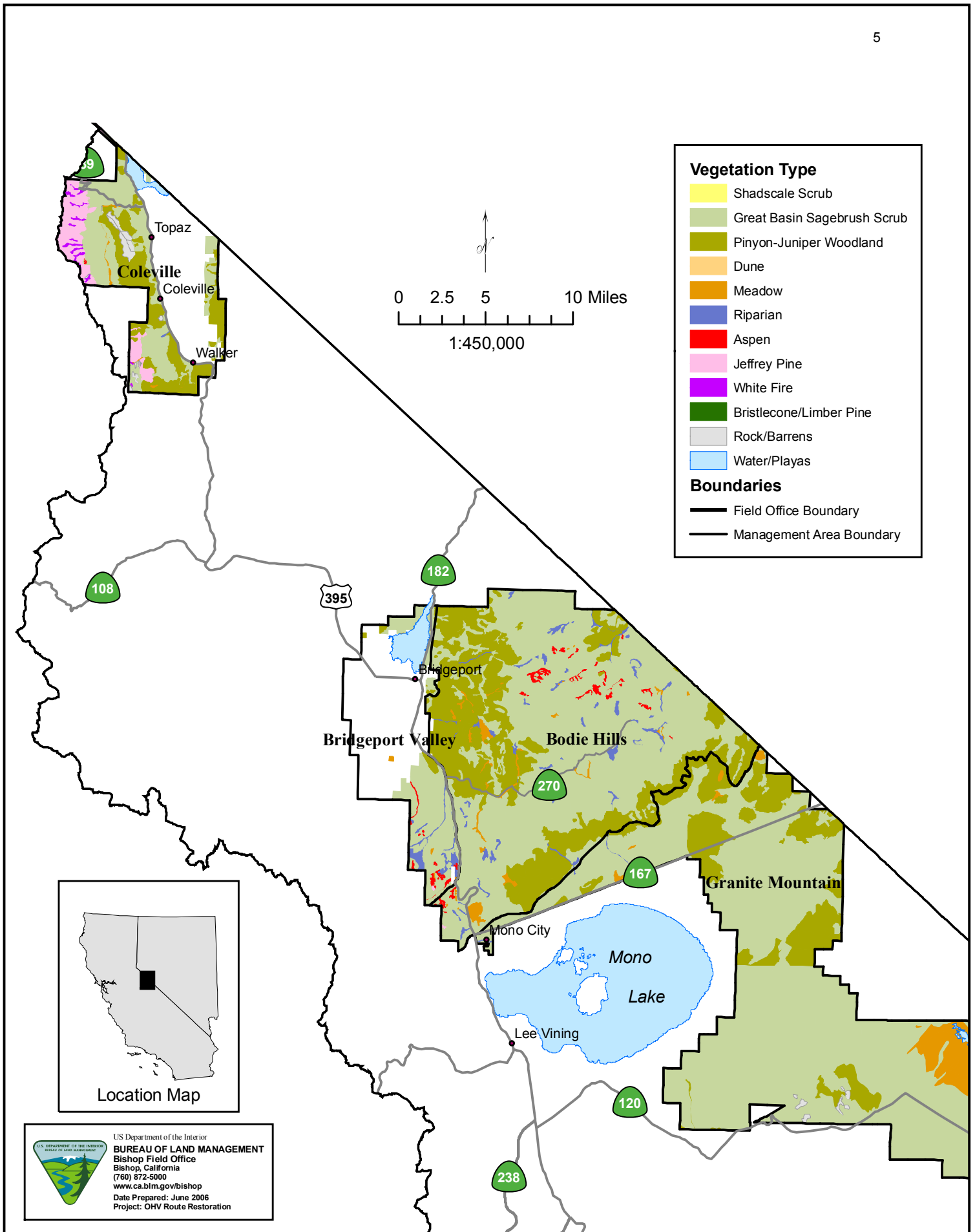


Figure 2. Generalized vegetation map of the northern portion of the Bishop Field Office.

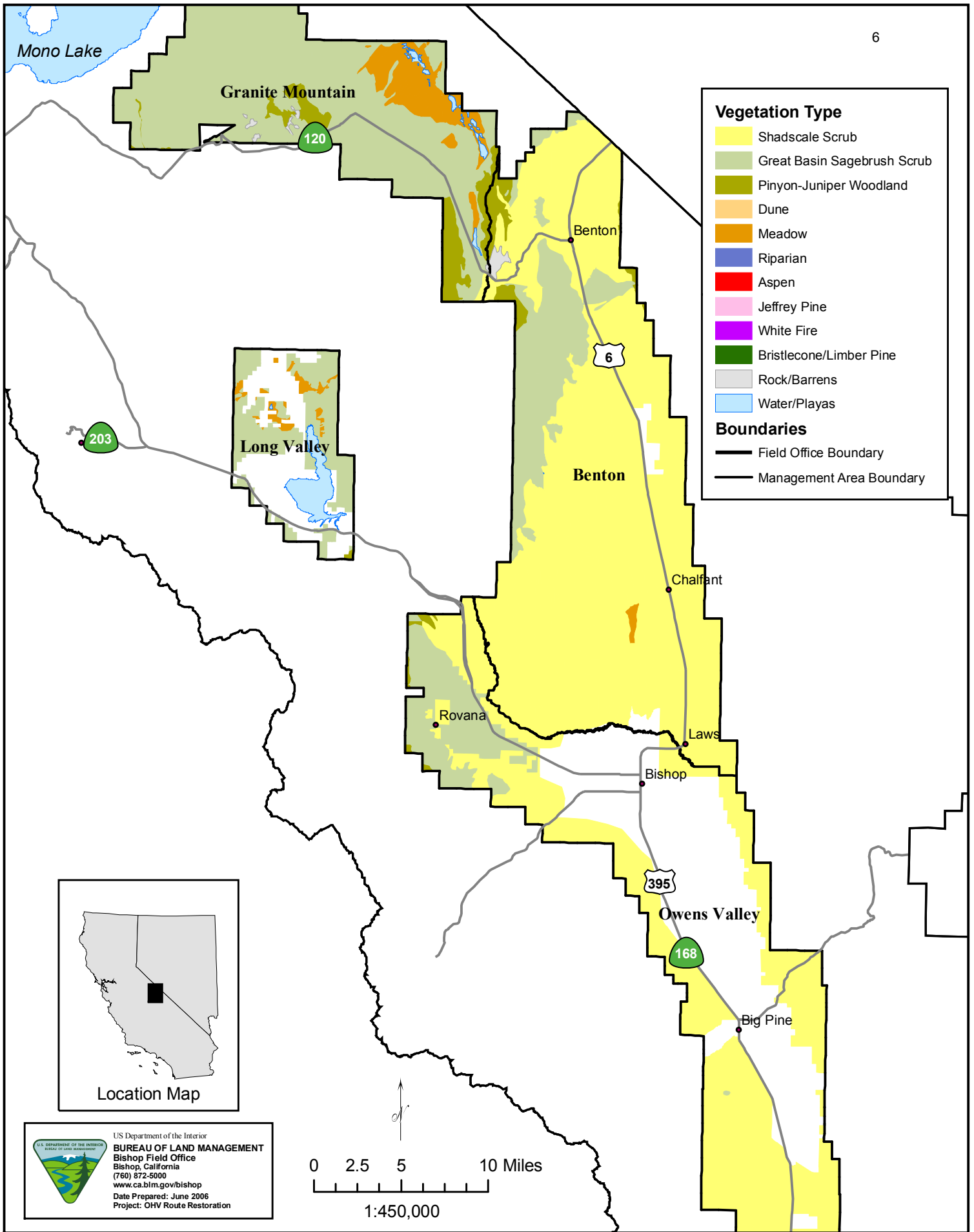


Figure 3. Generalized vegetation map of the central portion of the Bishop Field Office.

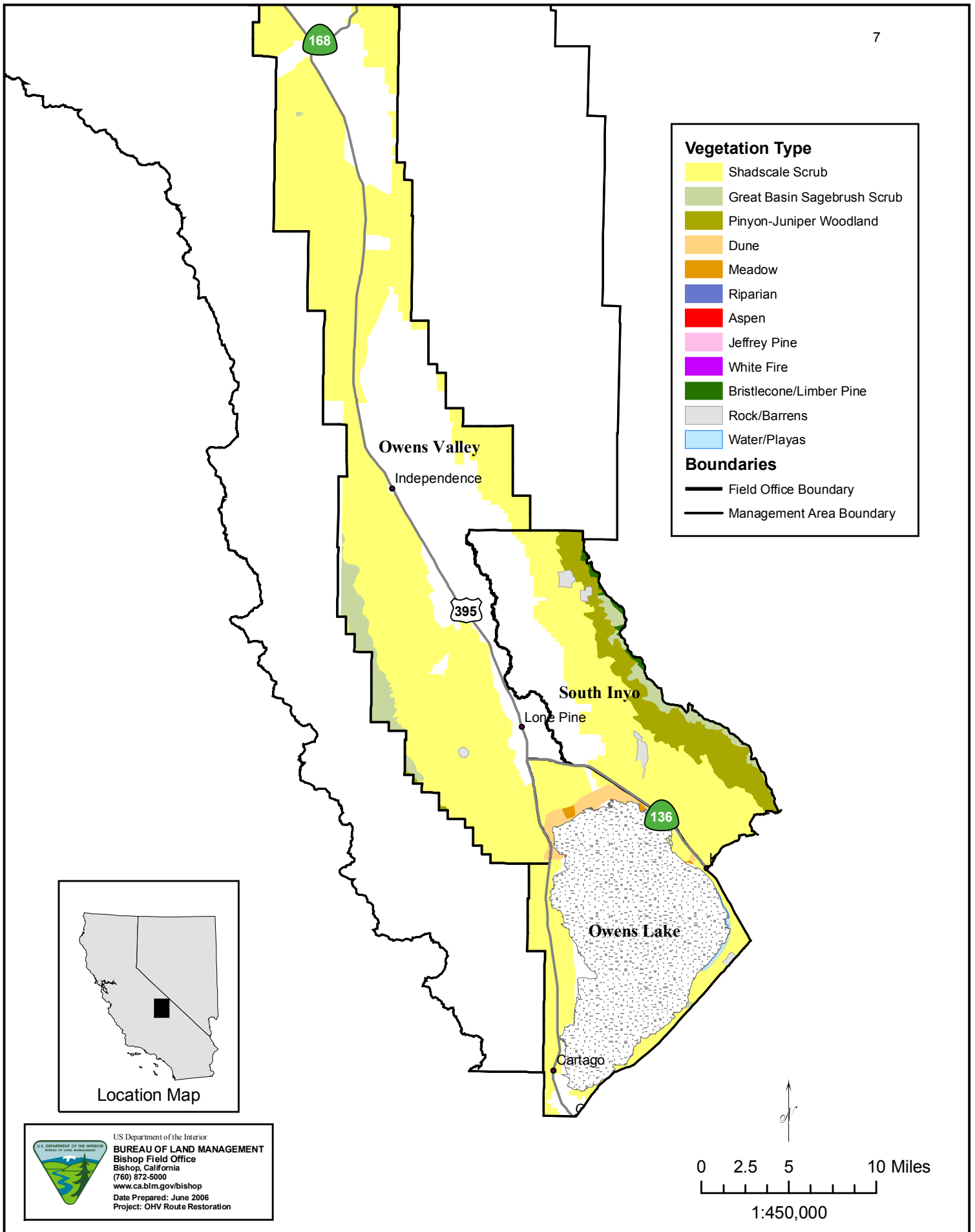


Figure 4. Generalized vegetation map of the southern portion of the Bishop Field Office.

Table 1. BLM Bishop Field Office Management Areas and Associated Occurrence of key vegetation types.

BLM Management Areas	Key Vegetation Types that occur within these Management Areas
Coleville	Great Basin sagebrush scrub, pinyon/juniper woodland, meadow, riparian, aspen, white fir, Jeffrey pine.
Bridgeport Valley	Great Basin sagebrush scrub, pinyon/juniper woodland, meadow, riparian, aspen.
Bodie Hills	Great Basin sagebrush scrub, pinyon/juniper woodland, meadow, riparian, aspen
Granite Mountain	Great Basin sagebrush scrub, pinyon/juniper woodland, Jeffrey pine
Long Valley	Great Basin sagebrush scrub, Jeffrey pine, meadow, riparian
Benton	shadscale scrub, Great Basin sagebrush scrub, pinyon/juniper, meadow, riparian
Owens Valley	shadscale scrub, Great Basin sagebrush scrub, pinyon/juniper, meadow, riparian
South Inyo	shadscale scrub, Great Basin sagebrush scrub, pinyon/juniper, bristlecone/limber pine
Owens Lake	shadscale scrub, dune

The remaining sections describe the practices and protocols the Bishop Field Office would use to implement the Proposed Action:

5. Project Identification and Prioritization

Yearly prioritization and implementation of restoration activities would occur through the following process. Identification of which routes warrant restoration/rehabilitation would occur through press releases and yearly meetings with various local interest groups, agencies, and interested individuals where the BLM would present the routes where specific resource triggers would have been met. These resource triggers would include one or more of the following impacts:

- Soil erosion
- Invasive weeds site occupation
- Disruption of wildlife during key seasonal use periods
- Physical alteration of key wildlife or rare plant habitats
- Impacts to archaeological resources

Additional factors that could warrant road/route restoration would also include duplicate route access and dead-end routes.

6. Public Involvement

The public would have the opportunity to provide comment regarding the routes that have been identified for restoration/rehabilitation and management. These comments would become part of the public record and help finalize the exact routes to be restored annually. A Determination of NEPA Adequacy (DNA) would be completed to fully and publicly disclose BLM's intent and environmental considerations of its proposals.

If a specific route or treatment surfaces substantive issues that have not been adequately addressed in this analysis or is determined by the field manager to be controversial, a separate Environmental Assessment would be prepared for that particular project providing the public with an additional in depth review of that proposal.

7. Description of Restoration and Management Techniques

The suite of restoration treatments we would prescribe within the identified plant communities and management areas include:

Road Re-alignment - This technique would involve re-routing an existing route to avoid a sensitive resource or an environmentally sensitive area. The new route would be placed in a more favorable environmental location following standard operating procedures specified in the Bishop RMP (BLM, 1993).

Seasonal Road Closure - This technique would involve temporarily closing, via a gate or other barrier, an existing route where vehicle use during a specific time period is negatively affecting a sensitive resource, an environmentally sensitive area, or conflicts with seasonal protection criteria specified in the RMP (BLM, 1993). The route would be open to vehicle use outside of the designated seasonal closure period.

Permanent Road Closure - This technique would be used if a route has been identified through the public review process as having impacts to sensitive resource(s) that cannot be mitigated, is a duplicate route, or is not meeting specific resource criteria identified in the RMP (BLM, 1993).

Route Barricades - This technique would be used to implement seasonal and permanent closures described above. Barricades might include a gate, rocks, telephone poles or other applicable method to discourage vehicle use on a closed route.

Route Hardening - This technique would involve bringing in rock material (e.g. shale, tuff, decomposed granite, etc.) to armor an existing route where travel during wet conditions causes excessive soil erosion or vehicle use outside the existing route

footprint. Any road material would come from a source assessed as “weed free” by the BLM weed program coordinator.

Route Maintenance – This technique would involve using road grading equipment to periodically smooth and grade an existing route to maintain access and encourage users to remain in the existing route footprint.

Vertical Mulching – This technique would involve randomly placing vegetation litter (e.g dead plants, branches etc.) to camouflage the route and discourage use. Native plant litter would be used adjacent to the site or brought in from a similar site where native vegetation was removed for a specific project such as road maintenance.

Surface Manipulations –

- A. **Decompaction:** This technique would involve either manual or mechanical means to break a compacted soil surface and improve water infiltration. Manual techniques might include a shovel and rake while mechanical means would require a small backhoe with a ripping attachment or a Rota Tiller. The selected methodology would be chosen based on the specific resource need, access considerations, and success potential.
- B. **Terracing:** This technique would create small slopes and berms to divert runoff water to planting basins.

Seeding – Although seeding is generally considered the least effective method of revegetation in arid lands, it is the most economical and least labor intensive method. Success for seeding projects depends on creating a favorable microclimate through roughing the soil surface and increasing soil moisture (Yamashita 1993). In 1996, the California State Office developed a Policy on the Use of Native Plant Materials in California (CA-97-34, Appendix 1) which outlines the importance of using native, site-adapted species in restoration for maintaining the genetic diversity of native plant communities. Target plant species material would be selected based on pre-disturbance composition as well as species that stabilize soils and meet wildlife habitat needs.

- A. **Broadcast Seeding:** Broadcast seeding involves spreading seeds on the soil surface. Seeds can be dispersed by hand or mechanical spreaders. A high seeding rate of 500 pure live seed (PLS) /m² is recommended. To increase germination potential and reduce seed herbivory, seeding would be followed by raking or dragging a small chain over the surface to cover the seed.

- B. **Drill Seeding:** Drill seeding requires the use of specially designed implements pulled by a tractor to rip soil, drop seeds and cover them at a desired depth. Seeding rates are 125-250 PLS/m². Drill seeding provides even seed coverage, reduced seedling rates and accurate seed metering.
- C. **Spot Seeding:** Spot seeding involves placing seeds in prepared spots. This technique is used to revegetate small areas or sites where use of heavy equipment is inappropriate. Advantages to this method are the ability to create more of a random seeding pattern. Bainbridge and Virginia (1990) suggest digging to a depth of 25-30 cm, back-filling to leave a small depression, then planting seeds in the depression.
- D. **Imprinting/Pitting:** Imprinting and pitting would involve creating small depressions on the soil surface to catch seeds, rainwater, topsoil and plant litter. Land imprinting consists of towing a patterned cylinder behind a tractor to “imprint” the soil surface. **Pitting** consists of using implements to dig basins rather than create impressions on the soil surface. Pitting is more appropriate on sandy soils. Pit size varies from 1.5 to 2.4 m long (5 to 8 ft.) and 0.15 m deep (0.5 ft.) with a sloped bottom.

Situational Signing – This technique seeks to identify the specific or general users of an area. Signs are subsequently developed with specific language appropriate to the user group(s). BFO employs a user friendly signing strategy to educate users about the area’s resources, teach appropriate behavioral outdoor ethics, and maintain traditional access.

Increase BLM Law Enforcement - This method involves the field presence of federal law enforcement officers (Rangers). Rangers enforce laws and provide a deterrent to illegal activities. Officers respond to many emergency incidents and crime scene investigations. They often times act as first responders to urgent situations and call for additional resources if needed. Rangers carry tools and supplies to make minor field repairs such as replacing signs, raking out cross country vehicle tracks and picking up trash. Additionally, Rangers hand out educational brochures, maps, answer questions, and provide public assistance.

Improve Educational/Visitor Services Outreach – This program, (visitor services) uses BLM recreation staff and non-paid volunteers. Volunteers and BLM recreation technicians patrol public lands or make site visits to popular recreational areas to make available informational and educational materials and provide general assistance to public land visitors. They report to BLM staff specialists on resource conditions, potential safety issues and possible user conflicts, or illegal events. Visitor services personnel frequently perform trail maintenance duties as well as remove litter, rake out cross country vehicle tracks, and maintain kiosks and signs.



Fish Slough Road Relocation
Project - 2006

8. Project Implementation Requirements

The following standard operating procedures would apply to future restoration/management project implementation. By design, they are a comprehensive range of proactive and preventive actions to preclude mitigation measures and associated residual impacts consideration in this environmental analysis.

- A. Prior to any ground disturbing activity required for route maintenance, route re-route, or route closure and restoration, the site would be surveyed for archaeological and sensitive plant and animal resources. A Class III inventory standard within the Area of Potential Effect (APE) would be used. Project design would be adjusted to avoid any identified resources and ensure their protection. If previously undiscovered surface or subsurface cultural resources are found during project implementation, the project would be stopped and the Bishop Field Office Archaeologist notified. All cultural resource evaluations and determinations would be carried out pursuant to the State Protocol Agreement between the California BLM State Director and the California State Historic Preservation Officer (2004), BLM 8100 Manual guidance, and the National Historic Preservation Act.
- B. Construction activities required for project implementation would follow RMP seasonal protection criteria designed to avoid disturbance to wildlife during critical seasonal use periods (BLM, 1993).
- C. The Bishop Field Office Weed Coordinator would approve the source of any road base or fill required for project implementation as “weed free” to avoid noxious weeds proliferation.
- D. All vehicles, tools and material used during project implementation would be washed prior to transport to the project site to avoid noxious weeds proliferation.

- E. All improvements required for project implementation would be limited to the least intensive method required to meet project objectives. Within designated Wilderness/WSA's, the "minimum tool" criteria would be applied.
- F. A project orientation would be provided to all construction personnel to educate them on project specific mitigation measures to minimize the potential impacts of construction activities.
- G. Biological monitors would be present at the project site during construction related activities.
- H. Staging areas would be clearly flagged to prevent equipment from damaging sensitive resources, archaeological resources or sensitive plant and animal species and associated habitats.
- I. Improvements to designated routes and adjacent parking areas and undeveloped campsites would be completed before redundant access routes to sites are closed to ensure recreational access.
- J. Surveys for invasive weed infestations would be completed prior to and the completion of the project. If any invasive weeds are identified within or adjacent to the project areas, the weeds would be removed to reduce the risk of an invasive soil seed bank developing.
- K. Vehicular access to proposed project areas would occur on an existing road/vehicle track.

9. Description of the No Action Alternative

Under the no action alternative fewer priority restoration treatments would be applied which would increase the risk of sites losing their capacity for ecological recovery and long-term site productivity. Because many projects are often time sensitive and require immediate resource protection, the no action alternative would increase the sites' risk to lose their capacity for ecological recovery and long-term site productivity.

II. AFFECTED ENVIRONMENT

1. General Environmental

Setting

The Bishop Field Office encompasses 750,000 acres of diverse plant and animal communities that span a large range of elevational gradients and three distinct physiographic regions, the northern Mojave, Sierran, and Great Basin. The BLM Bishop Field Office area is bounded by the Sierra Nevada Mountains to the west and the Walker River to the north. The eastern boundary is along the Adobe Hills to the north, the White Mountains in the central part, and the Inyo Mountains to the south. Elevations range from 1,080m (3,600ft.) at Owens Dry Lake to 3,300m (11,000ft.) in the Inyo Mountains.

Natural vegetation within the Bishop Field Office area is classified in ten major vegetation types (Holland, 1986, Sawyer and Wolf, 1995). These vegetation types are Mojave creosotebush scrub; Great Basin saltbush scrub; shadscale scrub; mixed desert scrub; blackbrush scrub; Great Basin sagebrush scrub; pinyon -juniper woodland; montane and subalpine coniferous forest; meadow and marshland and riparian woodland. Specific Desired Plant Community Descriptions as per the Bishop RMP (BLM, 1993) exist for the following plant communities and associations that occur in these broader vegetation types. They include; Jeffrey pine, bristlecone pine, sand dunes, big sagebrush/low sagebrush, big sagebrush/bitterbrush, old growth fir, springs and associated wetlands, aspen, riparian and pinyon/juniper.

The climate of the area is characterized by hot dry summers and cold moist winters and is greatly influenced by the Sierra Nevada Mountains to the west. The average annual precipitation varies greatly from the lower elevations of the Owens Valley to the northern, higher elevations of the Field Office Area. Annual precipitation in Bishop averages 34cm (5.37in) and in Mono Basin 90.3cm (14in) and occurs between November and March.

Soils are comprised of granitic, sedimentary, lacustrine, mixed alluvium and volcanic parent material. Most are rocky to sandy loam in texture and well-drained. Key landforms these soils occur on include stream terraces, lake terraces, floodplains, valley floors, alluvial fans, lava flows and mountain ridges.

2. Resources

The following describes relevant resource issues that are affected by the proposed action and require impact analysis in the environmental consequences section that follows. Several resource areas such lands, minerals, grazing, etc. are not addressed because internal scoping identified that valid minerals, grazing, and lands access would be continued and maintained.

Vegetation

The following is discussion of general road related impacts within specific vegetation types within Bishop Field Office area. A more detailed description of these plant communities occurs in Appendix 4.

Desert Scrub

Desert scrub comprises the dominant vegetation within the Owens Valley Management area. Inclusions of sagebrush scrub and sagebrush/bitterbrush communities also occur along the eastern escarpment of the Sierra Nevada. Riparian communities are restricted to major drainages along the west side of the valley and alkali meadow communities are small, scattered areas occurring around the Alabama Hills. OHV use currently is greatest with proportionate surface impacts in key focal areas such as the

Volcanic Tableland, Tungsten Hills, the alluvial fans of the White Mountains, and the Alabama Hills. Impacts such as route proliferation, parking, etc., effect loss of vegetation cover, shrub and grass compaction, and increased exposure of sites to upland soil erosion.

Sagebrush Steppe and Sagebrush/Bitterbrush

Sagebrush Steppe and Sagebrush/Bitterbrush comprise the dominant vegetation within 7 of the 9 management areas excluding the Owens Valley and Owens Lake Management areas. Current OHV use and impacts within this vegetation type are scattered and infrequent except in the Long Valley Management area where high intensity use to access hot tub spring sites and obtain landscape material (i.e. volcanic tuff) has created numerous ancillary routes around seasonally wet roads. Related impacts include upland soil erosion and compaction, loss vegetation cover, and compaction of shrub and grass species.

Conifer Communities

Pinyon communities comprise the most dominant conifer type within all the Management Areas except Owens Lake. Appendix 2 refers to other conifer species that occur within the Bishop Field Office area. OHV use and impacts within this vegetation type are infrequent and are associated with either hunting camp establishment, primarily in the South Inyo Management Area or access to fuelwood gathering sites within the Bridgeport and Bodie Hills Management Areas. Impacts are confined to soil compaction and removal and crushing of understory vegetation associated with this plant community

Aspen

Aspen communities are restricted to the Coleville, Bridgeport and Bodie Hills Management Areas. OHV related use impacts are infrequent and occur in association with campsite establishment, primarily around Virginia Creek and Green Creek (Bridgeport MA). Impacts include compaction and removal of understory vegetation associated with Aspen communities.

Riparian/Meadow

Riparian and meadow communities occur throughout all of the Management Areas. OHV use and impacts to these vegetation types occur most frequently in the Long Valley Management Area where vehicles drive off main roads to access hot tub spring sites. Impacts include compaction, removal and crushing of riparian and meadow vegetation which have resulted in increased soil erosion, and changes in run-off patterns.

Soils

OHV impacts to soil resources are a direct result of vegetation removal and alteration. Loss of plant cover increases the effects of the desert environment on soils. As shade, wind protection, and organic litter are lost on a site, wind velocities over the soil surface increase, water infiltration is reduced and microorganisms naturally found in the soil may be impacted. This process leads to poor soil structure and loss of topsoil, soil fertility and water retention properties (Bainbridge and Virginia 1990). These soil impacts are exacerbated when OHV routes occur on steep, topography, especially in desert scrub plant communities.

Biological Soil Crusts

Biological crusts are a complex mosaic of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria. Their structure and biological function are essential to maintain soil productivity, stability and general plant community function as well as potentially suppressing annual weed growth. Biological soil crusts occur within all the management areas but are most ubiquitous on calcareous and granitic substrates. Most of the biological crust organisms grow during cool, moist conditions. Impacts to these soils are identified in the Soils section of the Environmental Consequences.

Cultural Resources

The Bishop Field Office administered public lands are centered within the Owens Valley and Bodie Hills regions of the western Great Basin physiographic province. The area is known to contain the highest density of archaeological sites in the Great Basin (Grayson 1993, Liljeblad and Fowler 1986, Steward 1933, 1938) and perhaps in California. This is due to the region's environmental setting, the area's rural nature, and an intact land ownership pattern has preserved many cultural resources. The quality and quantity of the area's archaeological resources attracts considerable academic and cultural resource management research to the Owens Valley and eastern Sierra As a result many type sites have been identified. It has led to improved understanding of the region and Great Basin's prehistoric hunter-gatherer behavior and provided a foundation for scientific inquiry through theory development, testing, and validation or rejection.

The Owens Valley history is also superlative and reflected by the many historic mining, ranching, agricultural and support industry sites that occur extensively. The Bodie National Historic Landmark, Conway Ranch, and the Saline Salt Tram National Historic Site are examples of the area's rich history.

Threatened and Endangered Species (T&E)

The BLM Bishop Field Office manages habitats for six species currently listed as threatened or endangered under the Endangered Species Act of 1973 (ESA). The ESA requires Federal agencies to protect and ensure endangered species habitats. It

further requires agencies to consult with U.S. Fish and Wildlife Service to identify significant adverse impacts to habitats and species.

The six T&E habitats include Owens pupfish (*Cyprinodon radiosus*), Owens tui chub (*Siphateles bicolor synderi*), bald eagle (*Haliaeetus leucocephalus*), Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), Sierra Nevada Bighorn Sheep (*Ovis canadensis californiana*), and the Fish Slough milk-vetch (*Astragalus lentiginosus* var. *piscinensis*) which since 6/9/05 has also had critical habitat designated (Appendix 1 and 2).

Affected plants are most likely to be adversely impacted by OHV ancillary route establishment where these new surface disturbances provide weed infestation opportunities as well as fugitive dust emissions and plant pollinator habitat alteration.

Current impacts to related wildlife habitat from improper road development and vehicle use occur to stream channels, natural springs, and outflow channels that endangered/threatened fish species occupy. High or incidental vehicle use can also affect bald eagles or bighorn sheep by displacing them from their habitats.

Special Status Plant Species

Special Status Plant Species are species listed by the California Native Plant Society as List 1 B species, which includes plants designated as rare, threatened or endangered in California and elsewhere. All the plants constituting List 1 B meet the definition of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. The Bishop Resource Management Plan (RMP, 1993, p. 17) stipulates yearlong protection of sensitive plants (Special Status Plants) and their associated habitats.

Invasive, Non-Native Species (Weeds)

Density of invasive, non-native plant species is variable within each management area with the highest concentrations (cheat grass, *Bromus tectorum*) occurring in association with past fires, e.g. Mt. Tom (Owens Valley) and in Walker and Coleville. Higher cheat grass densities are also associated with historic sheep bedding and trailing locations on the eastern Sierra Nevada foothills from Conway summit south to McGee Creek. In general, volcanic substrates especially in the southern Owens Valley Management Area have higher annual weed densities, e.g. *Bromus madritensis* var. *rubens* and *Bromus tectorum* that are related to higher levels of phosphorus, potassium, calcium and magnesium (Woodward and Ustin, 1988).

Non-Native Invasive Species Known to Occur in the Bishop Field Office Area

Bassia hyssopifolia – Bassia
Bromus tectorum – cheat grass
Bromus madritensis ssp. *rubens* – red brome
Halogeton glomeratus – Halogeton

Lactuca serriola – prickly lettuce
Lepidium latifolium – perennial pepperweed
Medicago sativa - alfalfa
Melilotus alba – sweet clover
Poa bulbosa – bulbous blue grass
Salsola tragus – Russian thistles
Shismus arabicus –Mediterranean grass
Sisymbrium altissimum – skeleton weed
Tamarix ramosissima – salt cedar
Tribulus terrestris – puncture vine

Water Quality

There is little water quality data available for the planning area. Most water sources in the form of streams and natural springs have been sampled on one or two occasions over the past 20+ years.

In general, diminished water quality in the form of sediment transport and deposit in streams and natural springs as well as soils compaction to alkali/meadow soils is the most common form of pollution in the Coleville, Bodie Hills, Bridgeport Valley and Long Valley management areas. Proximity of roads within 20 feet of these water sources contributes to sediment loading and soils compaction. One creek, Aurora Canyon Creek, has a chronic problem with sediment being deposited in the channel from Mono County road maintenance work. Bodie Creek and Clearwater Creek are other examples where a similar problem exists.

The majority of streams in the Granite Mountain, Benton, Owens Valley, South Inyo and Owens Lake management areas do not exhibit sediment pollution problems to any serious degree. A few streams are notable for their unique water quality problems. Historical mining activities and recreational use on some streams have created some impact to water quality. Water quality has historically been adversely affected by mining and associated road construction and milling activity. In these management areas, the water in most streams and natural springs are suitable for most uses (irrigation, fisheries and macroinvertebrates, wildlife, livestock and general recreation).

Wildlife

The diverse plant communities in the Bishop Field Office area support many wildlife species who rely upon a particular plant community for habitat, and several wide-ranging species who use various plant communities for different habitat needs (Appendix 3). The Bishop Resource Management Plan (RMP, BLM 1993) recognizes the value of several of these by specifying Desired Plant Community goals to benefit wildlife. The RMP also identifies several locations for Yearlong or Seasonal Protection (managing uses to prevent disturbance that would affect the target resource) due to their importance for wide-ranging wildlife species during key reproductive periods and as seasonal habitats.

Sage-grouse leks (strutting grounds) are specific locations with low and/or open vegetation where sage-grouse traditionally return annually to mate; hens usually nest nearby. Leks are found in the Bodie Hills, Granite Mountain and Long Valley Management Areas (MAs). The RMP specifies Yearlong Protection within 1/3 mile of leks and Seasonal Protection (3/1 to 6/30) within 2 miles.

Sage-grouse wintering areas are given Seasonal Protection in the Long Valley and Bodie Hills MAs from 11/15 to 5/1, and in the Benton MA from 12/1 to 5/1.

Mule deer migration corridors are given Yearlong Protection in the Owens Valley and Long Valley MAs.

Mule deer winter ranges receive Seasonal Protection from 11/1 to 4/30 in the Long Valley and Benton MAs, and Yearlong Protection in the Coleville MA.

Tule elk calving areas are found in the Owens Valley and Owens Lake MAs and are designated for Yearlong Protection.

Raptor nesting and roosting sites are found in all MAs and the need for protection would be evaluated as they are identified. The RMP specifies one location in the Granite Mountain MA for Yearlong Protection and another in the South Inyo MA for Seasonal Protection.

The RMP also supports wildlife values in specific plant communities and habitat types by providing Yearlong Protection for riparian and aspen communities throughout the field office area, old growth white fir in the Coleville MA, Owens Valley vole habitat in the Benton MA, and Great Basin springsnail and Owens speckled dace habitat in the Benton and Long Valley MAs.

In general, wildlife populations are susceptible to direct disturbance and habitat impacts from motorized recreation use and easy vehicle access. Disturbances cause wildlife displacement, abandonment of territory and their immediate habitat where they forage, reproduce, and seek protection from predators. This increases their stress and reduces their survival capability. Occasionally, direct vehicle and wildlife collisions occur.

The range of habitats occupied by any given species contain specific niche requirements such as food/water quality and quantity, cover, wetlands, etc. that are affected by motorized use and ease of access. Cross-country vehicle use resulting in new unauthorized routes creates the greatest direct impacts to habitat and wildlife.

Recreation

BLM lands in the Eastern Sierra provide recreational opportunities including off-highway vehicles (OHV) use. Under its current OHV planning and strategies BLM land is designated as Limited Use, Open, or Closed.

Table 2. Permitted Motorized Access under Use Designations

Designation	Motorized Access	Total Acres	Total Miles
Limited Use	Motorized use includes all types of vehicles. Use is limited to designated roads and trails. Use of State, Federal and County roads which pass through BLM lands require the vehicle to be licensed for highway use. No cross country travel is permitted.	710,000	2,475 miles
Open	Motorized use includes all types of vehicles. Use is not limited to designated road or trails. Vehicles must, at a minimum, be registered as Off-Highway Vehicles in California or their home state.	1,300	25 miles
Closed	Inyo Wilderness Area - motorized use is prohibited.	40,000	none

In addition, the BLM classifies recreational opportunities on public land using the Recreational Opportunity Spectrum (ROS). The ROS identifies recreational opportunities based on the area's setting and activities. Most BLM lands in the project area are managed under Semi-Primitive Motorized classification of the ROS (Bishop 1993). This management theme emphasizes the following: predominantly natural appearing environment, moderate degree of solitude, low concentration of users, minimum on-site controls and restrictions present but subtle, vegetation alterations are small in size and widely dispersed.

Motorized access is a significant part of the recreation experience in the Eastern Sierra. Often, the vehicle is a means of access for a related recreational activity by utilizing backcountry routes for camping, hunting, wildlife viewing, bouldering, photography, etc. The region's natural beauty plays an important role in the recreation experience. Under the Semi Primitive Motorized concept, visitors use the routes for access or play while recognizing the resource values as part of the experience.

The system of roads and trails in the Bishop Field Office area totals approximately 2,500 miles and provides numerous opportunities for outdoor recreation. The access network is predominantly an interlacing of multiple two track roads, often crossing large public land blocks of natural appearing landscapes and view sheds. These two tracks are bounded by state/county maintained roads, providing easy access to backcountry vehicle touring opportunities, camping, climbing, etc. Tangential or secondary routes, diverging from these two tracks, are often short terminal roads, dubbed "spur routes" where they usually dead end at a hunter's camp, turn around, scenic overlook, mining prospect, or old sheep camp. The Poleta Canyon Open OHV Area, originally established in the 1970's, provides motorized vehicle opportunities off existing roads and trails. Most uses occur on existing route systems. The area was designated open

to vehicle use in the 1980's. Many of the routes consist of hill climbs and steep downhill runs.

Small stretches (up to 120 miles total) of single track trails used by dirt bikes, all terrain vehicles, horses, and mountain bikes also exist, primarily around Bishop and Lone Pine.

Intensive vehicle use, seismic activity, or major rain events on the routes can result in widening, rutting, bypasses, and erosion. These routes then require maintenance, signing, redesign, or relocation to maintain traditional vehicle access opportunities. About a half-dozen widening hill climbs totaling 1-2 miles occur on public lands outside the Poleta Canyon Open OHV Area. In the past, some hill climb routes outside the open area have been closed when resources were threatened or impacted.

BLM uses partnerships and cooperative efforts with California Off-Highway Motor Vehicle Recreation Division and numerous organized groups and private citizens to help with visitor management and resource conservation programs throughout the field office area.

BLM maintains about 3 miles of routes annually to facilitate vehicle passage and protect adjoining resources. Corrective maintenance to washed out roads, etc. is performed as needed.

Wilderness

The California Desert Protection Act of 1994 (CDPA) designated the Inyo Mountains Wilderness. The Bishop Field Office manages 40,000 acres of this Wilderness (205,020 acres total). An access road corridor (Swansea and Cerro Gordo Ridge Roads) was cherry-stemmed from the Wilderness at the time of designation in order to allow continued motorized access to the area. When it was designated in 1994, the Congressional wilderness boundary required closure of approximately 20 miles of vehicle routes. These routes were posted with closure signs and barricaded with native material i.e. rocks from the area, but some roads have insufficiently rehabilitated on their own. There is an occasional vehicle trespass on closed routes within wilderness causing some surface disturbance.

The Inyo Mountains' management emphasis focuses primarily on maintaining the area's primitive wilderness character as it existed upon designation and promoting self-inquiry, self-exploration and self-discovery. The BLM is currently using public education, boundary signing, and law enforcement patrols to deter illegal vehicle use.

The Wilderness Act of 1964 prohibits permanent and temporary roads, motor vehicles, motorized equipment, and forms of mechanical transport. BLM is required to prevent unauthorized use of motorized vehicles and motorized equipment within designated wilderness. No motorized equipment or mechanical transport would be used within wilderness for restoration purposes. Other applicable laws, regulations, and policies would continue to guide wilderness management and any restoration therein.



Inyo Wilderness Cherry-Stemmed Road
Corridor Brush Maintenance - 2005

Wilderness Study Areas

The Bishop Field Office manages 18 Wilderness Study Areas (WSAs) (Appendix 5), comprising approximately 234,000 acres (31 % of the resource area). They are described in the 1979 Final Wilderness Intensive Inventory Report, while existing roads, routes and other improvements are identified in the 1990 California Statewide Wilderness Study Report (1990). WSA's are managed for non-impairment – so Congress' ability to designate them as wilderness is not impaired. This direction is provided in BLM Interim Management Policy (IMP) for Lands under Wilderness Review. The IMP's objective is to maintain the WSAs' existing primitive character until Congress decides to release them to multiple use or designate as wilderness. Vehicle travel is limited to existing routes. The BLM attempts to deal with emergent impacts as they occur, typically with signing, closure, barriers, law enforcement or raking out illegal tracks. A few problems consist of random individualized cross-country vehicle use where these solitary tracks disappear in a week or two, or route widening in isolated instances, where impacts are appropriately mitigated. The IMP gives BLM the authority to remediate new surface impacts as they occur. All proposed projects within WSAs would be required to conform with the IMP.

Wild and Scenic Rivers (WS&R)

Eleven wild and scenic river segments were identified in the Bishop RMP as eligible for further study for inclusion in the national Wild and Scenic River System. Wild and scenic river values for these areas are described in Appendix 2 of the draft Bishop RMP and EIS (September 1990). Like WSAs, the eligible W&SR segments are to managed under interim management to protect its' free flowing water and associated riparian values.

Visual Resources

Visual Resource Management (VRM) Classes were identified in the Bishop RMP (see Appendix 5 - VRM Classes). VRM class management dictates that visual contrasts will be brought into VRM class conformance to the extent practicable when the need or

opportunity arises. The enforcement emphasis for VRM classes 2 through 4 is along key observation points throughout the field office area. Wilderness and WSAs are managed for VRM class 1 standards, as are Conway Summit and Slinkard Valley Areas of Critical Environmental Concern.

Current vehicle use impacts to visual resources generally are located along key observation points and consist of hillclimbs or widening hillclimbs readily observable from nearby highways, roads, or other use areas.

All projects would be implemented to conform with prescribed VRM Classes. Potential restoration sites may currently have a high visual contrast with the surrounding vegetation or viewshed. This draws the observer's attention to the surface disturbance, thus compromising VRM class objectives for different locales.

III. ENVIRONMENTAL CONSEQUENCES

Table 3. Critical Element Table. This table describes resources or elements affected by either alternative described in this Environmental Assessment.

Critical Element	No Impact	May Impact	Not Present	Rational
Air Quality	X			The proposed action is not within a federal air quality non-attainment area. The actions would not result in the emission of PM ₁₀ .
Cultural		X		Any identified archaeological resources would be identified and avoided prior to project implementation.
Environmental Justice	X			No minority or low income groups would be affected by disproportionately high & adverse human health or environmental effects because these proposed actions would not cause adverse health or environmental impacts nor would these actions take place in the vicinity of any such groups.
Farmlands, Prime or Unique			X	Resource is not present as per Bishop RMP (BLM, 1993).
Invasive, Non-native Weed Species		X		Addressed in Environmental Assessment
Native American	X			Native American consultation would occur prior to project implementation.
T&E Fauna/Flora	X			Any identified T&E plant or animal species would be surveyed and avoided prior to project implementation. Projects would be designed to reduce impacts to such identified resources.
Waste – Hazardous/Solid			X	Resource is not present nor will be created by the proposed action or alternative.
Water Quality/surface/ground water		X		Projects would be designed to ensure no additional opportunity for sediment (the major water quality pollutant) transport in to streams, springs and shallow pond locations.
Wetlands/Riparian		X		Addressed in Environmental Assessment
Wild and Scenic Rivers		X		Projects would conform to Wild & Scenic IMP for eligible rivers
Wilderness/Wilderness Study Areas		X		Projects would conform to BLM wilderness management policy and IMP direction in the case of WSAs.
ACEC's	X			Projects would conform to BLM ACEC management policy, including conformance with existing ACEC plans.

Vegetation

Proposed Action

Implementation of the proposed action would increase the expediency and number of implemented projects to ameliorate current vehicular induced impacts such as soil compaction, erosion, and associated loss of soil stability and vegetation cover by restoring routes where these impacts exceed RMP standards and/objectives. Over the long-term, implementation of the proposed action would protect and improve soil and vegetation conditions within the identified plant community types that occur in the Bishop Field Office Management Areas.

No Action Alternative

The no action alternative would reduce the number and timeliness of project implementations and allow for continued exposure of sites to erosion and increases in vegetation cover loss. These sites would also be vulnerable to weed invasion and native plant capacity for recovery would be compromised. By not restoring a larger percentage of routes, RMP (BLM, 1993) vegetation objectives would take longer to meet.

Soils

Proposed Action

Implementation of the proposed action would increase the expediency and number of implemented projects and reduce the impacts of soil erosion which affect long-term site recovery and site susceptibility to weed invasion. Key positive impacts would include soil stabilization, maintenance of biotic soils resources, rill reduction and soil surface texturing which would reduce wind erosion.

No Action Alternative

Under the no action alternative, soil resources would continue to be susceptible to erosion and structural alteration leading to a long-term loss of overall soil productivity.

Cultural Resources

Proposed Action

The proposed action could have long-term beneficial affects to cultural resources by rehabilitating more routes or related surface disturbances that cross through or near significant and threatened sites. Route rehabilitation would also reduce the threats of illicit vandalism of sites by decreasing site accessibility. Project actions would benefit, protect, and avoid all cultural properties as defined by the Section 106

of the National Historic Preservation Act of 1966, as amended (NHPA) and the implementing regulations found at 36 CFR §800 and 36 CFR §60.4

No Action Alternative

The no action alternative would allow impacts to cultural sites to continue and expand along existing routes more quickly since route restoration would occur on a case by case basis. In some instances, adverse affects to significant cultural properties could occur from continuing OHV activity on routes crossing through or near sites.

Threatened and Endangered Species (T&E)

Proposed Action

Implementation of the proposed action would reduce the following risks to existing rare plant populations: ancillary route establishment, invasive weed migration, fugitive dust effects and alteration of plant pollinator habitat.

The proposed action would benefit T&E wildlife species' habitats by improving the BLM's administrative ability to reduce sediment in stream channels, natural springs, and outflow channels endangered/threatened fish species occupy. Additionally, endangered/threatened land animals would also benefit by the agency's ability to identify and correct management issues on a collective basis.

No Action Alternative

The no action alternative would allow for continued exposure of rare plant populations to ancillary route establishment, invasive weed migration, fugitive dust effects, and alteration of plant pollinator habitat. This alternative would reduce implementation of RMP (BLM, 1993) rare plant year-long protection guidelines.

The no action alternative would address threatened/endangered wildlife species management issues on a case by case basis, ultimately correcting problems individually, and extending the timeframe of corrective action when multiple issues arise.

Invasive, Non-Native Species (Weeds)

Proposed Action

Implementation of the proposed action would help reduce the spread of invasive weeds in disturbed landscapes by increasing native plant cover and reducing the amount of exposed soil available for non-native plant species to colonize.

No Action Alternative

The no action alternative would cause longer time intervals between project identification and implementation which would expose sites to weed invasion in and around OHV routes. Other potential long-term impacts of the no action alternative would be an increase in weed densities causing commensurate decreases in native plant cover and vigor (below and above ground production), greater erosion leading to increased germination of invasive weed seed (Evans and Young 1972), and a reduction in mycorrhizal populations.

Water Quality

Proposed Action

Implementing the proposed action would have the greatest benefit to water quality for streams and springs where offsite sediment transport occurs due to improper road location/design and increased vehicle use. The proposed action's design to comprehensively develop and implement projects would speed up water quality improvement. Natural springs and alkali/meadow soils within 20 feet of frequently traveled roads would likely benefit from restoration actions by reducing compacted soils in the immediate area of spring discharge. Reducing soil compaction on alkali/meadow soils would improve water holding capacity and improve spring flow where restoration actions have remediated the compaction.

No Action Alternative

The no action alternative would continue to allow greater diminished water quality in streams and springs currently altered by transport and deposition of sediment from surrounding sites. This alternative would slow down the BLM's ability to improve water quality on a more comprehensive, efficient basis where it's needed. In some locations, like Aurora Canyon Creek, the sediment load deposited in the stream from road maintenance may lead to larger problems like erosion of the steep embankment along channel portions and loss of aquatic habitat attributes negatively influencing downstream fish habitat. Bodie Creek and Clearwater Creek are other examples where a similar problem would continue.

Wildlife and Wildlife Habitat

Proposed Action

The proposed action would allow effective implementation of RMP actions to protect wildlife species and their associated habitats. Route realignment, barricades, and vertical mulching in areas where habitat is improved would be benefit local wildlife. The proposed action would also assist in implementing RMP actions to maintain and enhance Desired Plant Community (DPC) goals directed towards wildlife.

No Action Alternative

Under this alternative, it would be more difficult to effectively implement Seasonal and Yearlong Protection for critical wildlife habitats identified in the RMP, or to monitor OHV activities and identify where impacts are occurring. The ability to address problems rapidly and effectively as they arise may be diminished. Wildlife may be subject to greater disturbance and habitat quality may decline.

Recreation/OHV Opportunities

Proposed Action

This alternative would benefit OHV recreation by maintaining, redesigning or relocating motorized access routes and/or correcting related resource disturbances by applying a range of management considerations to improve environmental values and facilitate motorized access. In localized areas, some decrease would occur to motorized use or access when routes would be closed after all other alternatives have been exhausted and other motorized access considerations made. Hill climb closures, outside the Poleta Canyon Open OHV Area, would reduce this motorized recreation opportunity and limit available alternatives to the open area.

The proposed action would also allow the BLM to respond more quickly to repair smaller problems before they become bigger and more complex. By restoring and maintaining damaged areas under this alternative as well as incorporating proactive measures such as route maintenance, education, visitor services, volunteer use and law enforcement presence, RMP and semi-primitive motorized objectives would met more readily. This would result in a more sustainable OHV program in the long term, improving environmental values for motorized access enthusiasts who seek these values. It would also facilitate vehicle passage for visitors seeking semi-primitive motorized recreation experiences.

No Action Alternative

The no action alternative would allow areas of environmental impact to remain in their present state for longer periods of time. This alternative would maintain the BLM's present administrative capability to repair, maintain, or rehabilitate areas, trails, and roads on a individual project by project basis. Individual projects would continue to be implemented, however, each would require a separate environmental assessment. The increased cost would result in fewer projects per fiscal year. Additionally, uncorrected surface damage would tend to grow in size, whether from natural occurrence such as poor drainage and rutting to driving off-route to avoid wet areas. This could result in additional or extended OHV prohibitions as well as diminish the semi primitive motorized recreation experience as a consequence of route proliferation, reduction of wildlife habitat, and deterioration of localized visual resources.

Wilderness

Proposed Action

The proposed action would generally benefit wilderness by actively restoring previously disturbed areas such as closed vehicle routes, to a primitive character commensurate with the surrounding wilderness character. This would reduce the visibility of the disturbed area and restore the area's naturalness. Restoration of segments of closed vehicle routes visible from the wilderness boundary would create a 'visual barrier' and reduce illegal vehicle use on closed routes by making them less conspicuous.

Rather than completing repetitive environmental assessments for potentially multiple projects in the wilderness, substantial time savings and improved impact analysis could occur through an annual NEPA restoration analysis where the projects are addressed concurrently. By improving analysis and administrative efficiency, this would allow the BLM to address existing or emergent impacts, restoring wilderness character and naturalness to the area as soon as was possible.

No Action Alternative

The no action alternative would benefit wilderness values because the existing management and use of the Inyo Mountains would continue subject to applicable statutes, regulations, policy and land use plans with the BLM preparing an EA for each individual project. Wilderness values of naturalness would not be maximized in as timely a manner under this alternative.

Wilderness Study Areas

Proposed Action

Although the proposed action would benefit WSA values, the impacts would be similar to those in the present management situation. Because the IMP is overriding policy to safeguard the areas' wilderness values when new impacts occur, BLM under both alternatives has authority to act expediently when new impacts emerge, thus creating little differentiation in benefits between either alternative. The proposed action may reduce some administrative time, at best, but is required to conform with the IMP similar to the no action alternative. Restoring surface disturbance as soon as possible would reduce the visibility of new routes and enhance wilderness naturalness more effectively. Emergent impacts would be readily treated as they occur, restoring and maintaining wilderness character.

No Action Alternative

The no action alternative would protect WSA values expediently under IMP direction, applicable statutes, regulations, policy and land use plans. Signing of illegal vehicle routes would continue, as would law enforcement and public education. New disturbances would require a separate and immediate EA or prompt corrective rehabilitation to reduce proliferating impacts. Surface disturbance would be immediately abated under applicable policies. More immediate attempts to physically barricade or rehabilitate problem areas, if necessary, would take place in compliance with IMP.

Wild and Scenic Rivers (WS&R)

Proposed Action

The proposed action would impact eligible Wild and Scenic River segments minimally when compared to the no action alternative as the segments are already managed under interim direction. BLM under the proposed action and the no action alternative has the interim direction policy to guide actions, thus creating little distinction in benefits between either alternative. Both the proposed action and no action would likely benefit wild and scenic river values by eliminating/repairing possible sources of erosion, sedimentation and surface disturbance which could affect water quality, fish species, riparian, etc. It is the time savings from assessing multiple river segment projects as a package and increased administrative efficiency that would result from this document that would most directly benefit eligible wild and scenic river segments.

No Action Alternative

The no action alternative would protect wild and scenic river segments expediently under applicable statutes, regulations, policy and land use plans. Existing management of wild and scenic river values would remain as is.

Visual Resources

Proposed Action

The proposed action would tend to improve the landscape's visual quality. Restoration would allow native vegetation to recover and better conform to the prescribed VRM standard. VRM objectives would be met under this proposal because of the attempt to reduce landscape visual contrasts more expediently, thus better maintaining the public land's scenic quality.

No Action Alternative

The no action alternative would have positive impacts to visual resources due to BLM's obligation to comply with VRM class standards. However, existing management under this alternative would occur on an individual project basis with

associated environmental analysis and implementation requiring more time and possible expense.

IV. Cumulative Effects

Since the High Desert OHV Plan (1993), cumulative past actions have consisted of about 30 restoration projects improving up to 30 acres of public land including annual maintenance of about 25-30 miles of motorized routes. These actions have occurred across 750,000 acres of public land in the eastern Sierra. Some motorized access opportunities have been lost with access use shifting to the remaining 2,400+ miles of routes on public lands.

BLM is currently implementing between 2 and 4 restoration projects totaling about 0.5 acres of surface area with annual route maintenance totaling about 3 miles per year.

These past and present projects have cumulatively improved cultural resources, vegetative and wildlife habitat, visual resources, etc. Additionally, annual maintenance has kept motorized access opportunities available and protected adjacent resources for public appreciation and use.

Although it is uncertain what projects would be identified as reasonably foreseeable future actions, past and present restoration/management practices lead us to believe that between 2 and 6 projects would be targeted annually for implementation, totaling possibly 2 - 4 acres of surface restoration. Several miles of annual route maintenance would continue to have beneficial effects for motorized access use.

Over the next ten years, the aggregate value of all expected future projects would expand the benefits to more modest levels of up to 40 acres of public land restoration and improvement. The proposed action would create several positive future effects from multiple and small incremental project accomplishments. This overall improvement would have commensurate benefits to wildlife populations including water, wetlands, air quality, and soils. Native vegetation would recover better with a corresponding decline in weed infestation. Soil compaction and erosion would lessen while fugitive dust emissions and sediment deposition in water would also decrease.

Similar applications would affect cultural resources cumulatively where it is expected that individual positive benefits to correct access related impacts would culminate to an overall regional improvement in archeological integrity and record preservation.

The additive value of up to 60 miles of expected route maintenance, repair, or redesign would facilitate motorized recreation opportunities regionally. The impacts would cumulatively benefit the broad public land base in the eastern Sierra from Olancha north to Topaz Lake.

Recreation opportunities in some circumstances would be lost when some routes i.e. hill-climbs would be closed after other restoration alternatives and considerations have been exhausted. At most, 1-2 miles of hillclimb routes would be affected.

The emphasis to deploy restoration actions more efficiently than under present management would maintain and, in some cases, improve existing opportunities. Restored or better maintained areas would improve localized visual resources, improve environmental values visitors' enjoy, and contribute to better user compliance through improved site design, education, and visitor services. The expected 40 acre improvement of localized opportunities and environmental values contributes to an additive recreation enhancement over all the public lands.

The proposed action's design and intent to streamline project administration would improve allocation of personnel resources and time annually, thus creating opportunities to improve long term productivity and reduce administrative costs. It is expected that approximately a 10-20% administrative cost savings may occur annually.

The restoration of impacted sites would also positively offset ancillary impacts that occur outside the BLM's land jurisdiction and may include such impacts as development, and highway construction/maintenance.

Finally, the proposed action's complimentary relationship to past and present restoration/management forms a progression to improve resources administration with little to no individual or cumulative negative impacts to other resources. As a result, the proposed action's cumulative effects anticipated over the next decade within the context of past and present actions would not cause a significant environmental impact throughout the eastern Sierra region.

V. Description of Mitigation Measures and Residual Impacts

Protective measures were incorporated into the proposed project design and implementation requirements (Pages 7 and 8) to reduce the probability of residual impacts and the need for subsequent mitigation. No residual impacts are anticipated and no additional mitigation measures are needed or proposed.

VI. Implementation Monitoring

Bishop Field Office Staff would direct and monitor project implementation to ensure conformance with restoration techniques and implementation requirements identified in the proposed action.

VII. Effectiveness Monitoring

Post project monitoring would be conducted annually to assess the proposed action's effectiveness. Visitor use and compliance monitoring would be used to evaluate the

effectiveness of the proposed project at meeting RMP objectives.

Project monitoring would entail a range of methods to include, but not be limited to photo point establishment, plant cover measurement and recruitment, and wildlife surveys. Vegetation monitoring would be made using standard BLM monitoring methods (BLM Tech. Ref 1730-1). Monitoring report(s) would be attached to the original copy of this document.

VIII. Public Input

BLM employed several methods to seek public input about the proposed project. These consist of distributing local media press releases to television, radio, and newspapers; posting the project and environmental assessment on the BLM Bishop Field Office website, and conducting presentations to the following: Mammoth Off-Highway Vehicle Club, California Native Plant Society, Friends of the Inyo (Wilderness Society), Audubon Society, Sierra Club, the Bishop Chamber of Commerce, and Inyo Associates.

Persons/Agencies Consulted

Cal 4-Wheel Drive Club
 California Native Plant Society
 Chamber of Commerce
 Wilderness Society
 Audubon Society
 Sierra Club
 Inyo National Forest
 California Department of Fish and Game Quail
 Unlimited

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Appendix 1 (A-1). Special status wildlife species known or likely to occur on BLM Bishop FO lands

Species	FE	FT	BLMS	SE	ST	SFP	CSC
Lahontan cutthroat trout		X					
Owens tui chub	X			X			
Owens sucker							X
Owens pupfish	X			X		X	
Inyo Mountains slender salamander			X				X
Mount Lyell salamander							X
Northern sagebrush lizard			X				
Panamint alligator lizard			X				X
Cooper's Hawk (nesting)							X
Sharp-shinned Hawk (nesting)							X
Golden Eagle (nesting, wintering)						X	X
Ferruginous hawk (wintering)							X
Swainson's hawk					X		
Northern harrier							X
Bald Eagle (nesting, wintering)						X	
Merlin (wintering)							X
Prairie Falcon (nesting)							X
American Peregrine Falcon (nesting)				X		X	X
Greater Sage-grouse			X				X
Long-billed Curlew							X
Short-eared Owl							X
Long-eared Owl							X
Burrowing Owl			X				X
Loggerhead Shrike							X
Bank Swallow					X		
LeConte's Thrasher							X
Yellow Warbler							X
Virginia's Warbler							X
Pallid bat			X				X
Townsend's bigeared bat			X				X
Spotted bat			X				X
Small-footed myotis			X				
Long-eared myotis			X				
Fringed myotis			X				
Yuma myotis			X				
Pygmy rabbit			X				X
Sierra Nevada snowshoe hare							X
Western white-tailed jackrabbit							X
Sierra Nevada mountain beaver							X
Owens Valley vole							X
American badger							X
Sierra Nevada red fox					X		
Sierra Nevada bighorn sheep	X			X		X	
Desert bighorn sheep			X				

FE = Federal Endangered **FT** = Federal Threatened

BLMS = BLM Sensitive

SE = State Endangered **SE** = State Threatened

SFP = (DFG) State Fully Protected **SCS** = (DFG) California Special Concern

Appendix 2 (A-2). BLM Special Status Plant Species

Rare Plants that occur or have potential habitat on BLM, Bishop Field Office Lands. Note: California BLM, Policy. All CNPS list 1B species are considered BLM Special Status Plants. Other CNPS listed species are not considered Special Status Plants unless approved by the CA. BLM State Director.

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
scalloped moonwort <i>Botrychium crenulatum</i> Ophioglossaceae	perennial rhizomatous herb	CNPS List 2	freshwater marshes, bogs, fens, meadows, and seep, 1500 to 3280 m elevation	CNPS states that grazing and trampling threaten this species.	PH
Wheeler's skeletonweed <i>Chaetodelpha wheeleri</i> Asteraceae	perennial rhizomatous herb	CNPS List 2	sandy soils in desert dunes, Great Basin scrub, and Mojave Desert scrub, 850 to 1900 m elevation	CNPS states that motor vehicles threaten this species.	PH
Hall's hawksbeard <i>Crepis runcinata</i> ssp. <i>hallii</i> Asteraceae	perennial herb	CNPS List 2	mesic and alkaline soils in Mojave Desert scrub and pinyon-juniper woodland, 1250 to 1450 m elevation	CNPS states that grazing and groundwater drawdown threaten this species.	K
bald fleabane <i>Erigeron calvus</i> Asteraceae	perennial herb	CNPS List 1B	Great Basin scrub at 1200 m elevation	Known only from near Keeler.	PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
fernleaf fleabane <i>Erigeron compactus</i> Asteraceae	perennial herb	CNPS List 2	rocky and gravelly carbonate soils in pinyon-juniper woodland, 1300 to 2900 m elevation	Known only from the Inyo and White mountains.	K
lone fleabane <i>Erigeron uncialis</i> ssp. <i>uncialis</i> Asteraceae	perennial herb	CNPS List 2	carbonate soils in Great Basin scrub, 2100 to 2900 m elevation	Mining	K
Inyo rockdaisy <i>Perityle inyoensis</i> Asteraceae	perennial herb	BLMS CNPS List 1B	rocky carbonate soils in Great Basin scrub and pinyon-juniper woodland, 1800 to 2710 m elevation	CNPS states that this species has fewer than 10 occurrences and that proposed mining threatens this species.	K
fivefinger chickensage <i>Sphaeromeria potentilloides</i> var. <i>nitrophila</i> Asteraceae	perennial herb	CNPS List 2	alkaline soils in meadows, seeps, and playas, 2100 to 2400 m elevation	CNPS states that grazing and vehicles threaten this species.	PH
fourpart horsebrush <i>Tetradymia tetrameres</i> Asteraceae	perennial shrub	CNPS List 2	sandy soils in Great Basin scrub, 1200 to 2135 m elevation		K

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
cushion Townsend daisy <i>Townsendia condensata</i> Asteraceae	perennial herb	CNPS List 2	gravelly soils in alpine boulder and rock fields and subalpine coniferous forest, 2865 to 3675 m elevation		K
Tulare cryptantha <i>Cryptantha incana</i> Boraginaceae	annual herb	CNPS List 1B	gravelly or rocky soils in lower montane coniferous forest, 1430 to 2000 m elevation		P
bristlecone cryptantha <i>Cryptantha roosiorum</i> Boraginaceae	perennial herb	BLMS SR	Subalpine coniferous forest (carbonate, rocky – Bonanza King formation); elevation 2400-3230 meters		P
Parish's popcornflower <i>Plagiobothrys parishii</i> Boraginaceae	annual herb	CNPS List 1B	mesic alkaline soils in Great Basin scrub, Joshua tree woodland, 750 to 1400 m elevation		P
Bodie Hills rockcress <i>Arabis bodiensis</i> Brassicaceae	perennial herb	BLMS CNPS List 1B	Great Basin scrub and pinyon-juniper woodland, 2085 to 3530 m elevation		K

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
sagebrush rockcress <i>Arabis cobrensis</i> Brassicaceae	perennial herb	CNPS List 2	sandy soils in Great Basin scrub and pinyon-juniper woodland		K
pinyon rockcress <i>Arabis dispar</i> Brassicaceae	perennial herb	CNPS List 2	granitic gravelly soils in Joshua tree woodland, Mojave Desert scrub, and pinyon-juniper woodland, 1200 to 2400 m elevation		P
cliffdweller <i>Caulostramina jaegeri</i> Brassicaceae	perennial herb	BLMS CNPS List 1B	rocky carbonate soils in Great Basin scrub and pinyon-juniper woodland	CNPS states that this species has about 5 occurrences in the Inyo Mountains.	K
Bodie Hills cusickiella <i>Cusickiella quadricostata</i> Brassicaceae	perennial herb	BLMS CNPS List 1B	clay or rock soils in Great Basin scrub and pinyon-juniper woodland, 2000 to 2800 m elevation	CNPS states that motor vehicles, mining, and grazing threaten this species. BLM monitors this species.	K
sweetwater draba <i>Draba incrassata</i> Brassicaceae	perennial stoloniferous herb	CNPS List 1B	rhyolitic talus in alpine boulder and rock fields, 2500 to 3965 m elevation		P
Washoe combleaf <i>Polyctenium williamsiae</i> Brassicaceae	perennial herb	CNPS List 1B	marshes, alkali playas, and vernal pools, 1350 to 2700 m elevation	CNPS states that this species occurs in 4 locals in California and that grazing threatens this species.	K

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Masonic Mountain jewelflower <i>Streptanthus oliganthus</i> Brassicaceae	perennial herb	BLMS CNPS List 1B	rocky volcanic or granitic soils in pinyon-juniper woodland, 1980 to 3050 m elevation	CNPS states that this species has < 20 occurrences in California and that motor vehicles, grazing, and mining threaten this species.	K
entireleaved thelypody <i>Thelypodium integrifolium</i> ssp. <i>complanatum</i>	annual or perennial herb	CNPS List 1B	mesic alkaline or sub-alkaline soils in Great Basin scrub, meadows, and seeps, 1100 to 2500 m elevation	CNPS states that grazing and hydrologic alteration threaten this species.	PH
Many-flowered thelepody <i>Thelypodium milleflorum</i> Brassicaceae	perennial herb	CNPS List 2	sandy soils in chenopod scrub and Great Basin scrub, 1220 to 2500 m elevation	CNPS states that agriculture and sand mining threaten this species.	PH
spreading pygmyleaf <i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> Caryophyllaceae	annual herb	BLMS CNPS List 2	desert dunes and sandy Great Basin scrub, 700 to 1615 m elevation		K
silverleaf milkvetch <i>Astragalus argophyllus</i> var. <i>argophyllus</i> Fabaceae	perennial herb	BLMS CNPS List 2	alkaline or saline soils in meadows, seeps, and playas, 1240 to 2350 m elevation	CNPS states that grazing and trampling threaten this species.	K

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Cima milkvetch <i>Astragalus cimae</i> var. <i>sufflatus</i> Fabaceae	perennial herb	CNPS List 1B	rocky carbonate soils in Great Basin scrub and pinyon-juniper woodland, 1500 to 2075 m elevation	Known only from the Saline Valley area.	PH
Geyer's milkvetch <i>Astragalus geyeri</i> var. <i>geyeri</i> Fabaceae	annual herb	CNPS List 2	sandy soils in chenopod scrub and Great Basin scrub, 1160 to 1550 m elevation		PH
Long Valley milkvetch <i>Astragalus johannis-howellii</i> Fabaceae	perennial herb	BLMS SR CNPS List 1B	sandy loam soils in Great Basin scrub, usually in swales near hot springs, 2040 to 2530 m elevation	CNPS states that motor vehicles, grazing, and mining threaten this species.	K
Lemmon's milkvetch <i>Astragalus lemmonii</i> Fabaceae	perennial herb	CNPS List 1B	Great Basin scrub, meadows, seeps, marshes, and lake shores, 1280 to 2200 m elevation	CNPS states that land conversion and pipeline construction threaten this species.	PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Fish Slough milkvetch <i>Astragalus lentiginosus</i> var. <i>piscinensis</i> Fabaceae	perennial herb	FT CNPS List 1B	alkaline playas, 1130 to 1300 m elevation	CNPS states that this species occurs at 8 sites near Fish Slough and that motor vehicles, fisheries development, hydrological alteration, agriculture, grazing, and trampling threaten this species.	K
Mono milkvetch <i>Astragalus monoensis</i> Fabaceae	perennial herb	BLMS SR	gravelly or sandy soils in Great Basin scrub, 2110 to 3355 m elevation	CNPS states that this species has < 20 occurrences and that motor vehicles, road maintenance, and sheep grazing threaten this species.	K
Lavin's milkvetch <i>Astragalus oophorus</i> var. <i>lavinii</i> Fabaceae	perennial herb	CNPS List 1B	Great Basin scrub, 2450 to 3050 m elevation	This species is only known from the Bodie Hills.	K
broadkeel milkvetch <i>Astragalus platytropis</i> Fabaceae	perennial herb	CNPS List 2	rocky soils in alpine boulder and rock fields, pinyon-juniper woodland, and subalpine coniferous forest, 2345 to 3550 m elevation	CNPS states that motor vehicles, trampling, and grazing threaten this species.	PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Tonopah milkvetch <i>Astragalus pseudodanthus</i> Fabaceae	perennial herb	BLMS CNPS List 1B	Great Basin scrub and stabilized dunes, 2025 and 2075 m elevation	CNPS states that this species has < 20 occurrences and that grazing threatens this species.	K
Shockley's milkvetch <i>Astragalus serenoii</i> var. <i>shockleyi</i> Fabaceae	perennial herb	CNPS List 2	alkali granitic alluvium in chenopod scrub, Great Basin scrub, and pinyon-juniper woodland, 1500 to 2250 m elevation		PH
Mono Lake lupine <i>Lupinus duranii</i> Fabaceae	perennial herb	BLMS CNPS List 1B	volcanic pumice and gravel in Great Basin scrub, 2000 to 3000 m elevation	CNPS states that this motor vehicles threaten this species.	K
Panamint Mountain lupine <i>Lupinus magnificus</i> var. <i>hesperius</i> Fabaceae	perennial herb	BLMS CNPS List 1B	sandy soils in Great Basin scrub, 1260 to 1830 m elevation		K
Intermountain lupine <i>Lupinus pusillus</i> ssp. <i>intermontanus</i> Fabaceae	annual herb	CNPS List 2	sandy soils in Great Basin scrub, 1220 to 1600 m elevation	CNPS states that grazing and non-native plants threaten this species.	PH
Inyo phacelia <i>Phacelia inyoensis</i> Hydrophyllaceae	annual herb	CNPS List 1B	alkaline soils in meadows and seeps, 915 to 3200 m elevation	CNPS states that motor vehicles and grazing threaten this species.	K

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Mono phacelia <i>Phacelia monoensis</i> Hydrophyllaceae	annual herb	BLMS CNPS List 1B	clay soils, often along roads, in Great Basin scrub and pinyon-juniper woodland, 1900 to 2900 m elevation	CNPS states that species occurs on 13 sites and that motor vehicles, grazing, and trampling threaten this species.	K
Torrey's blazingstar <i>Mentzelia torreyi</i> Loasaceae	perennial herb	CNPS List 2	alkaline sandy or rocky soils, usually volcanic, in Great Basin scrub, Mojave Desert scrub, and pinyon-juniper woodland, 1170 to 2835 m elevation	CNPS states that motor vehicles, grazing, and trampling may threaten this species.	K
Owens Valley sidalcea <i>Sidalcea covillei</i> Malvaceae	perennial herb	FC SE	mesic alkaline soils in chenopod scrub, meadows, and seeps, 1095 to 1415 m elevation	CNPS states that groundwater drawdown, non-native plants, grazing, and meadow succession threaten this species.	K
Booth's suncup <i>Camissonia boothii</i> ssp. <i>boothii</i> Onagraceae	annual herb	CNPS List 2	Joshua tree woodland, pinyon-juniper woodland, 900 to 2400 m elevation	CNPS states that mining threatens this species.	PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Booth's evening-primrose <i>Camissonia boothii</i> ssp. <i>intermedia</i> Onagraceae	annual herb	CNPS List 2	sandy soils in Great Basin scrub and pinyon-juniper woodland, 1500 to 2150 m elevation		PH
Louisiana broomrape <i>Orobanche ludoviciana</i> ssp. <i>ludoviciana</i> (= <i>arenosa</i>) Orobanchaceae	achloro-phyllous perennial herb	CNPS List 2	Great Basin scrub, 1600 m elevation	CNPS states that this plant occurs in only 3 sites in California.	PH
Ripley's gilia <i>Gilia ripleyi</i> Polemoniaceae	perennial herb	CNPS List 2	carbonate soils in Mojave Desert scrub, 305 to 1770 m elevation		PH
Intermountain milkwort <i>Polygala intermontana</i> Polygalaceae	perennial shrub	CNPS List 2	pinyon-juniper woodland, 2010 to 3080 m elevation	Small site in Bodie Hills, Dry Lakes Plateau	K
July gold <i>Dedekera eurekaensis</i> Polygonaceae	perennial deciduous shrub	BLMS SR	carbonate soils in Mojavean desert scrub, 1220 to 2200 m elevation	CNPS states that this species at about 20 sites and that no juvenile plants or seedlings of this species are known at present	K
Telescope Peak buckwheat <i>Eriogonum eremicola</i> Polygonaceae	annual herb	BLMS CNPS List 1B	sandy or gravelly soils in pinyon-juniper woodland, 2200 to 3100 m elevation	CNPS states that this species occurs at just 5 sites.	PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Panamint buckwheat <i>Eriogonum microthecum</i> var. <i>panamintense</i> Polygonaceae	perennial deciduous shrub	BLMS CNPS List 1B	rocky soils in pinyon-juniper woodland, 1900 to 3250 m elevation	CNPS states that this species occurs at < 10 sites. Motor vehicles do not threaten this species. BLM Bishop Field Office monitors this species.	K
Dugway buckwheat <i>Eriogonum nutans</i> var. <i>nutans</i> Polygonaceae	annual herb	CNPS List 2	sandy or gravelly soils in chenopod scrub, 1220 to 3000 m elevation		PH
Alexander's buckwheat <i>Eriogonum ochrocephalum</i> var. <i>alexandrae</i> Polygonaceae	perennial herb	CNPS List 2	shale or gravelly soils in Great Basin scrub and pinyon-juniper woodland, 1300 to 2100 m elevation		PH
frogbit buttercup <i>Ranunculus hydrocharoides</i> Ranunculaceae	aquatic perennial herb	CNPS List 2	freshwater marshes, 1100 to 2700 m elevation	CNPS states that this species occurs at just 3 sites in California and that hydrological alteration threatens this species.	PH
King's mousetail <i>Ivesia kingii</i> Rosaceae	perennial herb	BLMS CNPS List 1B	mesic alkaline clay soils in Great Basin scrub, meadows, seeps, and playa, 1200 to 2130 m elevation	CNPS states that this species occurs at < 10 sites and that motor vehicles threaten this species.	K

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
annual redspot monkeyflower <i>Mimulus parryi</i> Scrophulariaceae	annual herb	CNPS List 2	Great Basin scrub, 1200 to 2600 m elevation		PH
Nevada oryctes <i>Oryctes nevadensis</i> Solanaceae	annual herb	BLMS CNPS List 2	sandy soils in Chenopod scrub and Mojave Desert scrub, 1100 to 2535 m elevation	CNPS states that this species occurs at < 10 sites in the Owens Valley and that motor vehicles, grazing, and trampling threaten this species.	PH
golden violet <i>Viola aurea</i> Violaceae	perennial herb	CNPS List 2	sandy soils in Great Basin scrub and pinyon-juniper woodland, 1000 to 1800 m elevation	CNPS states that grazing threatens this species.	PH
hot springs fimbry <i>Fimbristylis thermalis</i> Cyperaceae	perennial rhizomatous herb	CNPS List 2	alkaline soils near hot springs in meadows and seeps, 120 to 1340 m elevation	Fish Slough	K
dark red onion <i>Allium atrorubens</i> var. <i>atorubens</i> Liliaceae	perennial bulbiferous herb	CNPS List 2	rocky or sandy soils in Great Basin scrub and pinyon-juniper woodland, 1200 to 2315 m elevation	CNPS states that this species occurs at <10 sites.	PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
Inyo County startulip <i>Calochortus excavatus</i> Liliaceae	perennial bulbiferous herb	BLMS CNPS List 1B	mesic alkaline soils in chenopod scrub, meadows, and seeps, 1150 to 2000 m elevation	CNPS states that most occurrences are small remnants of former populations and that groundwater pumping, development, road maintenance, and grazing threaten this species.	K
King's eyelashes <i>Blepharidachne kingii</i> Poaceae	perennial herb	CNPS List 2	carbonate soils in Great Basin scrub, 1065 to 2135 m elevation		PH
American mannagrass <i>Glyceria grandis</i> Poaceae	perennial rhizomatous herb	CNPS List 2	bogs, meadows, seeps, marshes, stream banks, and lake edges, 15 to 1980 m elevation		PH
prairie wedgescale <i>Sphenopholis obtusata</i> Poaceae	perennial herb	CNPS List 2	mesic soils in cismontane woodland, meadows, and seeps, 300 to 2000 m elevation	CNPS states that grazing and hydrological alteration threaten this species. Silver Canyon	PH
Robbins' pondweed <i>Potamogeton robbinsii</i> Potamogetonaceae	aquatic perennial rhizomatous herb	CNPS List 2	deep water in marshes and lakes, 1585 to 3300 m elevation		PH

Common Name Scientific Name Plant Family	Life Form	Legal Status [†]	Habitat	Threats	Known to occur (K), Potential Habitat (PH)
fineleaf pondweed <i>Stuckenia filiformis</i> ssp. <i>alpina</i> (= <i>Potamogeton filiformis</i>) Potamogetonaceae	aquatic perennial rhizomatous herb	CNPS List 2	shallow freshwater marshes, 300 to 2150 m elevation		PH

Nomenclature for common and scientific names follows the USDA PLANTS database at [//:plants.usda.gov](http://plants.usda.gov), accessed on 5 March 2004
Information about plant habitats and threats comes from the BLM Bishop botanist and from the California Native Plant Society Rare Plant Database at <http://www.northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi> and accessed on 5 March 2004

[†]Codes for Legal Status of rare plants are as follows:

BLMS – BLM California Species of Concern

CNPS List 1B –

CNPS List 2 –

FC – Federally listed species of concern

FT – Federally listed threatened species

SE – State of California listed endangered species

SR – State of California listed rare species

ST – State of California listed threatened species

Appendix 3 (A-3). Plant Communities and Area Wide Soil Descriptions

The following are descriptions of the plant communities that occur throughout the 9 Management Areas addressed in this EA. Information is based on two baseline vegetation/soils inventories that were completed in 1997 by the BLM, in 1996 by the National Resource Conservation Service (NRCS) for Inyo County and a BLM Site Vegetation Inventory Method (SVIM) inventory that was completed for Mono County in 1984. Both inventories were completed to document plant cover and composition as well as develop ecological site descriptions.

Desert Scrub

Desert Scrub contains the following scrub vegetation types; Mojave creosotebush scrub, Great Basin saltbush scrub, shadscale scrub; mixed desert scrub and blackbrush scrub. Mojave creosotebush scrub is dominated by creosote (*Larrea tridentata*) with an understory of bur-sage (*Ambrosia dumosa*). Great Basin saltbush scrub is dominated by big saltbush (*Atriplex lentiformis*) and all-scale (*Atriplex polycarpa*). Shadscale scrub is dominated by shadscale (*Atriplex confertifolia*) and budsage (*Artemisia spinescens*) with a sparse (15% or less) understory of desert needlegrass (*Achnatherum speciosum*) and Indian rice grass (*Achnatherum hymenoides*) (Barbour and Major 1977). Mixed desert scrub includes additional species that include, but are not limited to: hop sage (*Grayia spinosa*), horsebrush (*Tetradymia canescens* and *T. axillaris*), Nevada ephedra (*Ephedra nevadensis*), winter fat (*Krashennikovia lanata*), yellow rabbitbrush (*Chrysothamnus naseosus*), green rabbitbrush (*Chrysothamnus teretifolius*), gold bush (*Ericameria cooperi*), and cheesebush (*Hymenoclea salsola*). Blackbrush scrub is dominated by blackbrush (*Coleogyne ramossissima*) with a sparse understory of desert needlegrass (*Achnatherum speciosum*).

Sagebrush Scrub and Sagebrush/Bitterbrush

Great Basin sagebrush scrub is dominated by *Artemisia tridentata* ssp. *tridentata* with inclusions of buck brush (*Ceanothus greggii* and *C. cordulatus*). Sagebrush/bitterbrush communities can be dominated by a wide variety of sagebrush species to include; (*Artemisia arbuscula*, *A. tridentata* ssp. *vaseyana*, *A. tridentata* ssp. *tridentata*, *A. tridentata* ssp. *wyomingensis* and *A. tridentata* ssp. *parishii*), and bitterbrush (*Purshia tridentata* var. *tridentata*). Wyoming sagebrush is generally restricted to lower elevation portions of the above-mentioned Management Areas. Understory grasses such as Indian rice grass (*Achnatherum hymenoides*), desert needlegrass (*Achnatherum speciosum*), needle and thread (*Hespirostipa comota*), western needlegrass (*Achnatherum occidentale*), and Thurber's needlegrass (*Achnatherum thurberianum*) can make up 15-20% of the overstory cover at the higher elevations of the allotments (Barbour and Major 1977). Additional species include, but are not limited to: oceanspray (*Holodiscus discolor*), snowberry (*Symphoricarpos rotundifolius*), currant and gooseberry species; (*Ribes cereum*, *R. inerme*, *R. velutinum*), service berry (*Amelanchier utahensis*), bittercherry (*Prunus emarginata*), spiny hop sage (*Grayia spinosa*), horsebrush (*Tetradymia canescens*), Nevada and green

ephedra (*Ephedra nevadensis*, and *E. viridis*), and yellow and curly-leaved rabbitbrush (*Chrysothamnus nauseosus* and *C. viscidiflorus*). During years of high precipitation annual forbs are abundant and include, but are not limited to, species from the following genera: Astragalus, Arabis, Cryptantha, Eriogonum, Gilia, Lupinus, Onagraceae, Phacelia, Phlox as well as genera in the Asteraceae Family.

Conifer Communities

Pinyon Woodland

Pinyon woodland communities occur throughout all the Management Areas and are dominated by an overstory (15-40% cover) of singleleaf pinyon pine (*Pinus monophylla*) with a sagebrush/bitterbrush understory. Perennial forbs include species from the following genera: Astragalus, Cryptantha, Eriogonum, and Phlox. Other conifer species include; western juniper (*Juniperus occidentalis* var. *australis*), Utah juniper (*Juniperus osteosperma*), and isolated stands of lodgepole pine (*Pinus contorta*), Jeffrey pine (*Pinus jeffreyi*), limber pine (*Pinus flexilis*) and white pine (*Pinus monticola*).

White Fir

White fir (*Abies magnifica*) stands are isolated to approximately 370 acres in the Coleville Management Area and consist of old-growth trees with a diverse shrub understory of bittercherry (*Prunus emarginata*), snowberry (*Symphoricarpos parishii*), wild rose (*Rosa woodsii* var. *ultramontana*), and yellow currant (*Ribes aureum*).

Bristlecone Pine

Bristlecone pine (*Pinus longaeva*) stands are isolated to approximately 1,200 acres in the Southern Inyo Management Area. Bristlecone co-occurs with limber pine and the understory is sparse and comprised of low sage (*Artemesia arbuscula*), black sage (*Artemesia nova*), gray horsebrush (*Tetradymia canescens*), curly-leaved rabbit brush (*Chrysothamnus viscidiflorus*) and associated species from the following genera: Astragalus, Arabis, Cryptantha, Eriogonum, Gilia, Lupinus, Onagraceae, Phacelia, Phlox as well as genera in the Asteraceae Family.

Aspen

Aspen groves are a unique and important plant community type within the Coleville, Bridgeport, and Bodie Hills Management Areas. They range in size from small scattered stands to large, >5 acre complexes. Age-class distribution within these complexes is generally even-aged with moderate to low juvenile (sucker recruitment). Understory vegetation is dominated by California brome (*Bromus carinatus*), *Hordeum jubatum*, hawksbeard (*Crepis acuminata*), *Descurania sophia*, currant (*Ribes velutinum*) and occasional snowberry (*Symphoricarpos rotundifolius*). In more impacted groves, understory vegetation is dominated by *Bromus tectorum*, mullein (*Verbascum thapsus*), Canada thistle (*Cirsium arvense*) and nettle (*Urtica dioica*).

Riparian

Low to mid elevation Riparian areas within the Granite Mountain, Long Valley, Benton and Owens Valley Management Areas include the following plant communities (Barbour 1977): Transmontane Freshwater Marsh (permanently flooded), Freshwater Seep, Transmontane Alkali Marsh (seasonally flooded), Alkali Seeps, and Alkali Meadow (saturated soils). The wetland community types integrate following a gradient of moisture and alkalinity.

Transmontane Freshwater Marsh/Freshwater Seep

Transmontane Freshwater Marsh is a Rare Natural Community, State-ranked S2.2(threatened). Marsh vegetation is dominated by bulrush (*Scirpus americanus*), (*Juncus* spp.), sedge (*Carex aquatilis* and *C. nebrascensis*), and spikerush (*Eleocharis* spp.). Common perennial wetland forbs include marsh speedwell (*Veronica scutellata*), monkeyflower (*Mimulus guttatus*) and arrow grass (*Triglochin concinna*).

Transmontane Alkali Marsh

Transmontane Alkali Marsh is a rare natural community, State-ranked S2.1 (very threatened). As the wetland system shifts away from its freshwater source, marsh and seep vegetation shift to a more alkaline community type dominated by saltgrass (*Distichlis spicata*).

Alkali Meadow

Alkali Meadow is a rare natural community, State-ranked S2.1 (very threatened). Dominant species include a variety of perennial grasses such as salt grass (*Distichlis spicata*), alkali cordgrass (*Spartina gracilis*), Great Basin wild rye (*Leymus cinereus*), alkali sacaton (*Sporobolus airoides*), bluegrass (*Poa secunda* ssp. *juncifolia*) and meadow brome (*Hordeum brachyantherum*). Common rushes include baltic rush (*Juncus balticus*) and perennial forbs include *Crepis runcinata* ssp. *hallii*, *Ivesia kingii* var. *kingii* and *Pyrrocoma racemosa* var. *sessilifolia*, alkai peppergrass (*Lepidium montanum* var. *nevadense*) and blue-eyed grass (*Sisyrinchium halophytum*)

Lower Montane Meadow

The two dominant ecological meadow types within the Bridgeport Valley and Bodie Hills Management Area are mesic graminoid and dry graminoid (Weixelman, Zamudio 1999). Mesic graminoid meadows are wet to moist well into the growing season. Depth to saturation averages 34 cm. The most common soil taxa are Typic Cryaquoll with a peat or muck rich surface layer. This type is most common on drainage ways, but can also be found on floodplains. Dominant species in the mesic graminoid meadow include, but are not limited to: Nebraska sedge (*Carex Nebrascensis*), *Carex simulata*, *Carex lanuginosa*, *Carex utriculata*, *Deschampsia cespitosa*, *Hordeum brachyantherum*,

Muhlenbergia filiformis, *Epilobium ciliatum*, *Stellaria longipes* var *longipes* and *Aster occidentalis*. Willow stands can border these communities and include such species as, *Salix geyeriana*, *S. lemmonii*, *S. lutea* and *Salix exigua*.

Dry graminoid meadows are most commonly found on trough drainage ways and stream terraces. Soils lack saturation and the most common soils are Haplocryolls indicated by dark, mollic surface horizons. Dominant species in the dry graminoid meadow include, but are not limited to: *Poa secunda* ssp. *juncifolia*, *Muhlenbergia richardsonis*, *Carex praegracilis*, thin-stemmed wheatgrass (*Elymus trachycaulus*), *Carex filifolia*, Baltic rush (*Juncus balticus*), *Penstemon rydbergii*, *Gayophytum diffusum*, *Trifolium monanthum*, and yarrow (*Achillea millefolium*).

Streams

Riparian vegetation on stream reaches in the Owens Valley Management Area are dominated by primarily woody species such as willows: (*Salix lutea*, *S. lasiolepis*, *S. exigua*, *S. goodingii*, *S. lucida*), western water birch (*Betula occidentalis*), and wild roses (*Rosa woodsii* var *ultramontana*), Herbaceous species are primarily comprised of sedges (*Scirpus* and *Carex* spp.) and rushes (*Juncus* spp.). Black oak (*Quercus kelloggii*) and canyon live oak (*Quercus chrysolepis*) stands that occur along Ash, George and Oak Creeks are anomalous components of eastern Sierra riparian vegetation. They are either remnant patches of the former Pliocene forests of the interior or the result of the west-to-east acorn trade among native people of the Sierra (Taylor 1982).

The relatively narrow riparian widths that comprise these reaches are driven by the geomorphology of alluvial fan systems. Despite the confined nature of these streams the condition of the riparian vegetation is good with regard to plant cover and composition.

Soils

Coleville/Bridgeport/Bodie

Dominant soils are grouped into four main types and are derived from metamorphic, volcanic and granitic parent materials. The first soil type occurs on nearly level to gently slopes with cooler soils occurring in closed, drained to internally-drained basins that are sometime saline to alkaline. The second type occurs on moderately sloping to steeply sloping sites and comprise well-drained cool and cold soils of the Bodie Hills; many are very rocky to cobbly in texture. The third type occurs on nearly level to steeply sloping sites on high terraces of Mono Lake and low foothill slopes or alluvial fans of the Bodie Hills and are mostly sandy or very gravelly in texture. The fourth type occurs on moderately to steeply sloping sites and are comprised of the cold soils on the Sierra Foothill-slopes and glacial deposits.

Soils that are sandy, strong cobbly, and/or very gravelly may tend to limit the

establishment of seeds and seedling development. Very shallow soils may also restrict water infiltration and plant rooting. These soils occur primarily on slopes and ridges.

There is potential water erosion mainly along stream banks, in stream channel bottoms, in meadows, and at springs. Potential wind erosion problems would more likely exist in the Mono Basin in soils with high surface concentrations of fine sand.

Granite Mountain/Long Valley/Benton

The soil classification of these Management Areas was mapped by the Natural Resource Conservation Service (NRCS) in the early 1990's at an Order 3 survey level. Parent materials are comprised primarily of volcanic, and in the Granite Mtns., of granitic substrates. Soils of the mountainous region are shallow to very deep, well drained sandy loams. Soils of the intermountain valleys are moderate to very deep and are well to somewhat excessively drained ashy loamy sands. Soils of the stony alluvial fans are very deep, well to somewhat excessively drained sands, loamy sands, and sandy loams. Soils of the mountainous regions and stony alluvial fans tend to limit the establishment of seeds and seedling development because of the sandy to cobbly in texture. Soils within the Volcanic Tableland Association are very shallow which restricts water infiltration and plant rooting. These soils primarily occur on slopes and ridges. Ash loamy sands are inclusions occurring within depressions or valleys between the slopes. These soils are well drained, which provide a more favorable habitat for both grasses and mixed desert and Great Basin shrub species.

Erosion potential of these soils range from slight to moderate on the valley floor due to wind erosion and can be somewhat attributable to the effects of cattle grazing and hoof action which disturbs the soil surface. Valley floor soils may also have inclusions of calcareous loam along remnant river terraces that exhibit duripans which inhibit water infiltration and restrict shrub rooting depths. The erosion potential on the alluvial fans is low due to the rocky to gravelly surface texture.

Owens Valley

Three main soil associations exist among the management area and include soils of Lava Flows, Mountainous Regions, and soils of the Stony Alluvial Fans. Lava Flows soils are cindery loamy sands and sandy loams on basaltic lava flows and cinder cones. These soils are very deep and well to somewhat excessively drained. Available water capacity is low and the hazard of water erosion is moderate. Wind erosion hazard is slight. Mountainous Region soils are primarily sandy loam, which are generally shallow to deep and well drained. Available water capacity is low to moderate. The hazard of erosion is slight to moderate for water and moderate to severe for wind. Because of the rapid intake and deep percolation of moisture, loss from runoff is negligible. This permits deep rooted plants to grow vigorously under arid conditions. These soils are highly susceptible to wind erosion if vegetation cover is removed. Stony Alluvial Fan soils are primarily gravelly loam, which are generally very deep and well drained. Alluvial fans are comprised of either shadscale gravelly loam or gravelly loams. These

soils are mostly shallow, well drained, with gravelly to cobbly surfaces and subsurface textures. These soils tend to limit the establishment of seeds and seedling development. Valley floor soils may also have inclusions of calcareous loam along remnant river terraces that exhibit duripans that inhibit water infiltration and restrict shrub rooting depths. Erosion potential of these soils ranges from slight to moderate on the valley floor due to wind erosion.

Inyo Mountains

Soils that comprise the Inyo Mountains Management Area are derived from metamorphic shales and volcanic parent materials with inclusions of calcareous substrates. Slopes are steep and where the Kingman Shale formation occurs, are susceptible to erosion, especially in association with roads. The majority of slopes and ridges however exhibit high vegetation cover and are not as susceptible to wind and water erosion.

Appendix 4 (A-4). Wildlife Habitat Values of Plant Communities

Desert Scrub communities in the Bishop FO area support many reptiles (lizards and snakes; known desert tortoise range is further to the south), and small mammals including black-tailed jackrabbit, desert cottontail, desert wood rat, southern grasshopper mouse, canyon mouse, deer mouse, Merriam's and chisel-toothed kangaroo rats, long-tailed and little pocket mouse, and white-tailed antelope squirrel. These in turn support predators including coyote, bobcat, and various raptors. Birds residing in desert scrub communities include Phainopepla, Black-Throated Sparrow, Loggerhead Shrike, Greater Roadrunner, Costa's Hummingbird, and (in the Owens Lake MA) LeConte's Thrasher (CalPIF 2006).

Sagebrush Scrub and Sagebrush-Bitterbrush communities provide important forage and cover for mule deer throughout the Bishop Field Office (BFO) area, and for tule elk in the Owens Valley MA; pronghorn in the Bodie Hills, Benton and Granite Mountain MAs; and Greater Sage-grouse in the Long Valley, Granite Mountain, Bodie Hills and Bridgeport Valley MAs; Desired Plant Community (DPC) goals are directed toward these species in the RMP (Bishop 1993). Sage-grouse are sagebrush obligates, that is, species restricted to sagebrush habitats during the breeding season or year-round (Paige and Ritter 1999). Other sagebrush obligate birds include the Brewer's Sparrow (common in sagebrush communities throughout the BFO area), Sage Sparrow (mainly breeding from Granite Mountain MA south), and Sage Thrasher (most abundant at higher elevations from Long Valley north) (Heath 2004, Heath et al. 2004). Pronghorn are also considered sagebrush obligate, as are the pygmy rabbit, known in the Long Valley, Granite Mountain and Bodie Hills MAs; and the sagebrush vole and sagebrush lizard, found in sagebrush communities throughout the BFO area. Many other reptiles and small mammals – such as least chipmunk, deer and pinyon mouse, Western harvest mouse, Ord's and Panamint kangaroo rat, dark kangaroo mouse and Great Basin pocket mouse – inhabit these communities and provide food for predators, including shrubland/grassland raptor species such as Swainson's Hawk (breeding in the Benton MA), Ferruginous Hawk (winter resident in much of the BFO area) and Prairie Falcon (year-round resident throughout). Other shrubland bird species commonly relying upon sagebrush for breeding habitat in the BFO area include Green-tailed Towhee, Loggerhead Shrike, Spotted Towhee and Black-throated Sparrow (Paige and Ritter 1999, Heath 2004).

Conifer communities provide important habitat diversity for wildlife, especially where complex understories offer a variety of microhabitats. A complete wildlife inventory of the Bishop FO area found that, after riparian, aspen and wetland habitats, the greatest wildlife density and diversity was supported by Pinyon-Juniper and Big Sage-Bitterbrush plant communities where they occur together; e.g. "breeding bird species diversity tripled when pinyon became associated with big sage-bitterbrush" (BLM 1981B). Desired Plant Community (DPC) goals in the Bishop RMP (BLM 1993) for pinyon/juniper are "to increase wildlife habitat diversity and improve mule deer habitat" in South Inyo, Benton, Granite Mountain, Bodie Hills, and Coleville MAs; for Jeffrey pine, "to maximize wildlife habitat diversity and ensure adequate forest regeneration" in

Long Valley and Granite Mountain MAs; and for old growth white fir, “to maintain habitat diversity, provide habitat for old growth associated species and ensure adequate forest regeneration” in Coleville MA; old growth white fir also receives Yearlong Protection in the Coleville MA. Conifer communities provide cover for mule deer, and shrub understories support small mammal and reptile communities as described above. Birds most prominent in conifer communities in this region include Pinyon Jay, Gray Flycatcher, Yellow-rumped Warbler, Cassin’s Finch, Clark’s Nutcracker, Black-throated Gray Warbler, Dark-eyed Junco and Western Tanager (CalPIF 2002); in the Coleville MA white fir communities support blue grouse (BLM 1981A). Where conifer communities are expanding, they may encroach into other important plant communities and reduce their value for wildlife. Richardson and Heath (2005) found that conifer encroachment into aspen stands in the eastern Sierra negatively affects bird species richness and abundance. Where conifers encroach on sagebrush, concern for sagebrush obligate animal species such as sage-grouse prompts recommendations for conifer control (e.g. BLM 2004), but woodland removal proposals should be carefully evaluated for desired outcome, likelihood of success, and effects on other species (CalPIF 2005).

Aspen communities, along with riparian and wetland, were acknowledged in the complete wildlife inventory as accounting for “less than 1 percent of the total vegetation but yet the most productive and valuable wildlife habitat” due to their diversity and structural complexity and excellent thermal cover (BLM 1979). Aspen communities support the greatest species diversity of breeding birds of any habitat type in the eastern Sierra (Heath and Ballard 2003). DPC goals (BLM 1993) are “to increase wildlife habitat diversity and reduce erosion” in the Bodie Hills, Bridgeport Valley and Coleville MAs, and the RMP provides Yearlong Protection to aspen communities throughout the field office area. Large mammals such as mule deer and black bear benefit from the multi-layered cover and rich foraging resources of aspen groves; birds, bats and many small mammals also thrive on the high insect production. Bird species showing a strong affinity with aspen in our area include Red-breasted and Red-naped Sapsucker, Dusky Flycatcher, Warbling Vireo, Swainson’s Thrush and MacGillivray’s Warbler (Heath and Ballard 2003, Richardson and Heath 2005). Breeding bird abundance is correlated with good herbaceous cover in aspen communities (Richardson and Heath 2005).

Riparian and meadow communities, along with aspen, were identified by the complete wildlife inventory as crucial to wildlife and supporting the highest density and diversity of animals, including 116 species of amphibian, reptile, bird and mammal (BLM 1979) and afforded area-wide Yearlong Protection by the RMP (BLM 1993). Riparian DPC goals are “to increase wildlife habitat diversity, provide high quality fish habitat and control erosion” in every MA; and for wet meadows, “to increase habitat diversity and reduce erosion” in Owens Valley, Benton, Long Valley, Granite Mountain, Bodie Hills and Bridgeport Valley MAs.

The particular importance of riparian communities to birds is widely recognized, and PRBO Conservation Science has studied riparian breeding bird communities throughout

the BFO area beginning in 1998, documenting the breeding status of over 60 bird species. Among the most abundant were Spotted Towhee and Lazuli Bunting in the Owens River watershed, and Yellow Warbler and Warbling Vireo – which are declining in many parts of California – in the Mono Basin and Walker River watersheds (Heath et al. 2002). PRBO also documented the importance of riparian strips in our area as migration corridors for birds breeding at higher elevations and latitudes, and as foraging areas for birds such as sage sparrows breeding outside the riparian zone (Heath and Ballard 1999). Habitat variables having strong positive correlations with breeding bird diversity were elevation and riparian width (Heath and Ballard 2003). Mammals associated with riparian areas include striped and spotted skunk, raccoon, American beaver, porcupine, and in the Coleville MA, mountain beaver. Amphibians depend upon riparian areas, including Inyo slender salamander and Mt. Lyell salamander along with several frog and toad species.

Meadows also support distinctive wildlife communities; the complete wildlife inventory for the Bodie MA identified 15 mammal species and 32 bird species spending at least part of their life cycle foraging and/or breeding in meadows, including 4 mammals (vagrant shrew, western harvest mouse, meadow mouse, western jumping mouse) and 2 birds (Common Snipe, Savannah Sparrow) spending their entire life or at least most of their reproductive period in meadows (BLM 1981B). Meadows are also important to sage-grouse, which rely especially heavily on meadow forbs and insects for essential late spring and summer nutrition for hens and chicks; and to voles, including the Owens Valley vole (USFWS 1998). The RMP (BLM 1993) specifies Yearlong Protection for Owens Valley vole habitat in the Benton MA, and for maintaining and enhancing their habitat in the Owens Lake and Owens Valley MAs. Wildlife depending especially upon alkali meadow/shorelines include the Western Snowy Plover, for which the RMP calls for maintaining and enhancing habitat in the Owens Lake MA.

Other Important Wildlife Habitats

Aquatic – Many invertebrates spend all or part of their life cycle in the water. Some are of special interest due to their rarity or highly localized distribution, such as the springsnails (*Pyrgulopsis* spp.), diving beetles, and species associated with thermal springs; some are indicators of water quality; and all provide important food for other wildlife such as fish, amphibians, birds and bats. Native fishes – Owens pupfish, Owens speckled dace, Owens tui chub, Owens sucker and Lahontan cutthroat trout – rely upon aquatic habitats ranging from still, shallow water to cold, fast-moving streams, and all have experienced challenges to habitat quality and quantity and sharp reduction in numbers. Introduced fishes valued by anglers include rainbow, brook and brown trout, largemouth black bass, and carp (and often impact native species via predation, competition or hybridization). Many birds rely upon fish as their sole or primary food, and other waterfowl and shorebird species also depend upon open water habitat. The Bishop RMP (BLM 1993) calls for Yearlong Protection of Great Basin springsnail and Owens speckled dace habitat in the Benton and Long Valley MAs; stabilizing and restoring habitat suitable for Lahontan cutthroat trout reintroduction in the Bodie Hills and Coleville MAs; and maintaining and enhancing other habitats for fishes, springsnails

and waterfowl.

Dunes – Sand dunes constitute an uncommon habitat type in the field office area, and are particularly vulnerable to disturbance. Naturally scant vegetative cover must suffice to provide adequate stabilization and microclimate conditions for dune-adapted species. The RMP (BLM 1993) applies DPC goals to 75% of the sand dunes in the Owens Lake and South Inyo MAs for the purpose of maintaining habitat for the Owens sand dune snout beetle.

Cliffs – Cliffs, by virtue of difficult access for predators, are important habitat components for bighorn sheep and provide vital nesting, foraging and roosting habitat for many bats and birds. Cliff-nesting raptors, such as Golden Eagle and Prairie Falcon, are particularly vulnerable to disturbance in the vicinity of their nests and may abandon nests or experience reduced nest success, depending upon varying factors such as the type, direction and proximity of disturbance and the species' or individual bird's level of tolerance.

Caves and mines – Bat species that evolved to take advantage of the protection of caves, such as Townsend's big-eared bats, are now widely dependent upon abandoned mines for habitat in this area. These bats use specific underground habitats that provide ideal temperatures and other conditions for their seasonal needs, such as maternity roosts that are warm enough to support their young and hibernacula that are cool enough to maintain them in a state of hibernation through the winter, and may abandon these sites in response to human disturbance.

Wildlife Relying On Multiple Habitats

Several wildlife species of particular interest range widely over a variety of habitats. These include mammalian predators such as mountain lion, bobcat, black bear, coyote, gray fox, Sierra Nevada red fox, and kit fox; large ungulates such as bighorn sheep, mule deer, introduced tule elk and feral horses; several species of bat; game birds such as sage-grouse, Mountain Quail and California Quail; and various predatory birds including eagles, hawks, falcons and owls.

Appendix 5 (A-5). Bishop Field Office Section 603 WSA Summary by County

LOCATION	WSA NUMBER	WSA NAME	ACRES	COUNTY
Slinkard Valley	CA-010-105/NV-030-531	Slinkard	5,846 ac. + 422 ac. (split estate)	Mono
Bodie Hills	CA-010-102	Masonic Mountain	6,493 ac.	Mono
	CA-010-100	Bodie	16,482 ac.	Mono
	CA-010-099	Bodie Mountain	23,934 ac.	Mono
	CA-010-095	Mt. Biedeman	13,069 ac.	Mono
	CA-010-094	Mormon Meadow	7,721 ac.	Mono
Mono Basin	CA-010-092	Walford Spring	12,840 ac.	Mono
	CA-010-090	Granite Mountain	54,178 ac. +3,867 ac. (USFS)	Mono
	CA-010-088	Excelsior	9,383 ac.	Mono
Volcanic Tableland	CA-010-082	Casa Diablo	5,325 ac +3,634 ac (USFS)	Mono
	CA-010-081	Volcanic Tablelands	12,499 ac.	Mono (35%) Inyo (65%)
	CA-010-080	Fish Slough	14,700 ac.	Mono (80%) Inyo (20%)
	CA-010-079	Chidago Canyon	19,702 ac.	Mono

Owens Valley	CA-010-064	Symmes Creek	7,694 ac. + 383 ac. (USFS)	Inyo
	CA-010-062	Crater Mountain	7,069 ac. + 482 ac. (USFS)	Inyo
	CA-010-057	Independence Creek	6,458 acres	Inyo

Southern Inyos	CA-010-056	Southern Inyo	4,900 acres	Inyo
	CA-010-055	Cerro Gordo	5,800 acres	Inyo