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REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT AND GENERAL MANAGEMENT PLAN



DEATH VALLEY

NATIONAL PARK • CALIFORNIA AND NEVADA

PRODUCED AS A COMPONENT OF THE NORTHERN & EASTERN MOJAVE PLANNING EFFORT

JULY 2000

Revised Draft
Environmental Impact Statement
General Management Plan

Death Valley National Park
Inyo and San Bernardino Counties, California
Nye and Esmeralda Counties, Nevada

This *Revised Draft Environmental Impact Statement / General Management Plan* presents the proposed management approach and two alternatives for the management of the 3.3 million-acre Death Valley National Park in the northeastern Mojave Desert in California and Nevada. Death Valley is the lar`gest national park unit in the contiguous United States, created by Congress October 31, 1994 through the California Desert Protection Act (CDPA).

The first *1998 Draft Environmental Impact Statement / General Management Plan* was released for public review in September 1998. Eleven public meetings were conducted during the 127-day public review period. Based largely on public comments on that draft plan, the NPS made substantial revisions to the 1998 draft plan. Responses to written public comments on the 1998 draft plan are contained in a separate volume. This *General Management Plan* serves as the initial overall management strategy for the next 10–15 years under which more detailed activity or implementation plans would be prepared. As such, a general management plan is general rather than specific in nature, and focuses on purposes of the unit, its significant attributes, its mission in relation to the overall mission of the agency, what activities are appropriate within these constraints, and resource protection strategies. It also provides guidelines for visitor use and development of facilities for visitor enjoyment and administration of the unit.

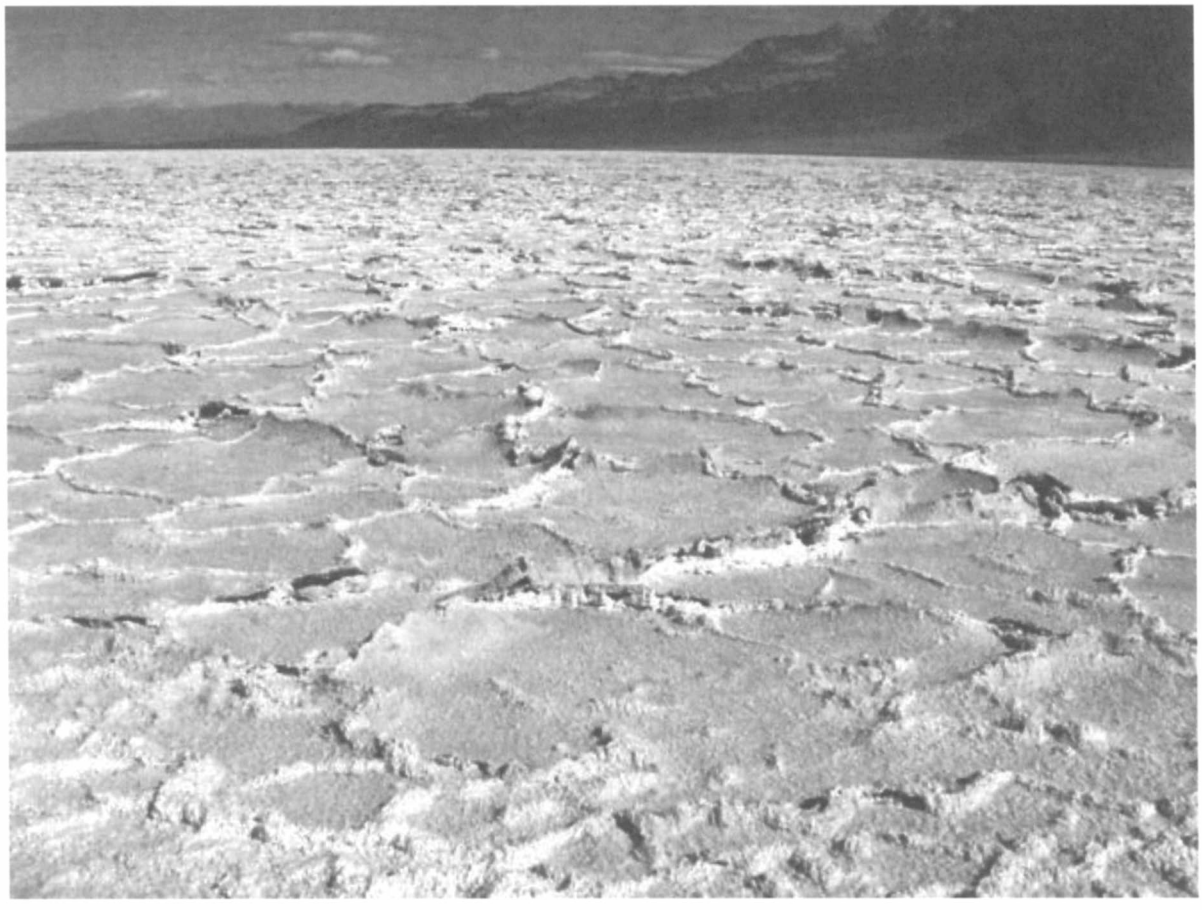
The proposed action (alternative 1) seeks to extend the existing management strategies that are in place for the previous Death Valley National Monument, and the National Park Service mission and policies, to the management of the resources within the new lands added to the unit in 1994 by the California Desert Protection Act. It also strives to incorporate the designation of 95% of the Park as wilderness into the management approach. This alternative addresses the removal of feral burros and horses from the Park in order to achieve the NPS mission of managing the unit for native desert species. It also recognizes the need to work cooperatively with the Bureau of Land Management on adjacent land, where their mandate from Congress is to maintain viable herds of wild horses and burros. This alternative attempts to balance the preservation of resources mission with specific mandates from Congress at no more than the level occurring in 1994. In Death Valley, the California Desert Protection Act provides for the continuation of grazing on the new lands. This alternative addresses grazing as a component of the management. This plan identifies a number of activity level plans needed to address site specific issues, such as the Saline Valley Warm Springs management and a wilderness/backcountry management plan. This alternative seeks funding for acquisition of private property from willing sellers, and/or mineral interests where proposed uses conflict with the primary mission of preserving resources and providing for visitor enjoyment.

In addition to the proposal (alternative 1), two other alternatives in this document include the existing management (alternative 2) and an optional management approach (alternative 3). The existing management alternative describes the continuation of current management strategies. It is commonly referred to as the no action, or status quo alternative. Under this alternative, existing visitor and administrative support services and facilities would be maintained in their current locations. There would be no changes in existing number or location of structures. There would be no change in road maintenance, although some roads could be improved if funding becomes available. No changes in recreation use would occur. Land acquisition would focus on obtaining funds to acquire private property and mineral interests from willing sellers only where proposed uses conflict with the Park mission. The optional approach (alternative 3) provides for approval of the use of an airstrip at Saline Valley Warm Springs, designating campsites at the Warm Springs, specifies acquisition of private land or mineral interests only in sensitive habitats, and the phase out of the concession operation at Stovepipe Wells.

The 90-day opportunity for public comment starts with the Environmental Protection Agency filing a notice of availability in the Federal Register. Comments must be received by that time and should be sent to the following address:

Superintendent
Death Valley National Park
Death Valley, CA 92328

U.S. DEPARTMENT OF THE INTERIOR • NATIONAL PARK SERVICE
IN COOPERATION WITH
U.S. DEPARTMENT OF THE INTERIOR • BUREAU OF LAND MANAGEMENT / U.S. FISH AND WILDLIFE SERVICE



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EXECUTIVE SUMMARY

This *Revised Draft Environmental Impact Statement / General Management Plan* evaluates alternative management approaches for Death Valley National Park in the northeastern Mojave Desert of California and Nevada. Death Valley was redesignated as a national park on October 31, 1994 through the passage of the California Desert Protection Act. Congress expanded the previous Death Valley National Monument by 1.3 million acres, designated 95% of the area as wilderness (3,158,038 acres), and designated the unit a national park. This impact statement is one of three documents prepared for the Northern and Eastern Mojave Planning Area as part of an interagency coordinated planning effort. The *Revised Draft Environmental Impact Statement / General Management Plan* for Mojave National Preserve and the *California Desert Conservation Area Plan* amendment for the Bureau of Land Management lands were projected to be released at about the same time as this document.

As a recently expanded unit of the national park system, the Park's existing management plans are outdated. This planning effort will produce a general management plan that will serve as the overall management strategy for the next 10–15 years. More detailed activity or implementation plans will be prepared under this plan. The general management plan is general in nature, rather than specific, and focuses on purposes of the unit, its significant attributes, its mission in relation to the overall mission of the agency, what activities are appropriate within these constraints, and resource protection strategies. It also provides guidelines for visitor use and development of facilities for visitor enjoyment and administration of the unit.

The impetus for this plan was the passage of the California Desert Protection Act on October 31, 1994. This act transferred over 3 million acres of the California desert from the Bureau of Land Management to the National Park Service and designated nearly 8 million acres of wilderness on NPS and BLM lands. In addition, the act created the Mojave National Preserve and redesignated Death Valley and Joshua Tree national monuments as national parks. Changes in the management of the public lands in the California desert, including listing of the desert tortoise, increasing development, public use pressures, and passage of the California Desert Protection Act, caused NPS, BLM, and U.S. Fish and Wildlife Service (FWS) desert managers to address the anticipated changes in management of these federal lands by looking at management issues beyond traditional boundaries. Three sub-regional planning teams were established in the desert region of southern California: the West Mojave Plan in the western Mojave Desert, the Northern and Eastern Mojave Planning Effort in the northern and eastern Mojave Desert, and the Northern and Eastern Colorado Planning Effort in the northern and eastern Colorado Desert. These teams would gather information, define issues, and develop methods for issue resolution. The National Park Service, which manages most of the land in the northern and eastern Mojave Desert, took the lead for the Northern and Eastern Mojave interagency planning effort. The other participating agencies are the Bureau of Land Management and the U.S. Fish and Wildlife Service. The Bureau of Land Management is the lead for the West Mojave Plan and the Northern and Eastern Colorado Planning Effort. The planning region boundaries for all three areas will cease to exist when the planning efforts are completed.

The Northern and Eastern Mojave planning team conducted twenty public meetings in September 1995 and April 1997 to gather public input on the management direction for the planning area. From this input, meetings with interested parties (such as county departments, special interest groups, California Department of Fish and Game, etc.) and discussions with agency staff, a proposed management plan for Death Valley was developed. This proposed plan (alternative 1) is compared with the existing management or the no-action alternative (alternative 2), and with a third optional management approach (alternative 3). Table 1 provides a summary of the actions examined under each alternative. Table 2 is a summary of the primary effects of each action.

The *1998 Draft Environmental Impact Statement* was released for public review in September 1998. Eleven public meetings were conducted during the 127-day public review period. Responses to written public comments on the 1998 draft plan are addressed in a separate volume. More public meetings will be held after this document's release. Responses to comments on the revised draft plan will be addressed in the final environmental impact statement. Thirty days after release of the final environmental impact statement a record of decision will be produced. Soon after the record of decision a summary general management plan and land protection plan for the Park will be released. These documents will be summary presentations of the management direction arrived at through the public process.

TABLE 1: SUMMARY OF PROPOSED ACTION AND ALTERNATIVES

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
GENERAL DESCRIPTION OF ALTERNATIVES			
	• Extend existing Park management strategies and NPS mission and policies to management of resources within new lands added the Park. • Protecting resources and providing for visitor enjoyment are primary goals. • Balance this mission with the other Congressional mandates, such as maintaining appropriate grazing and mining under NPS regulations, and continue existence of major utility corridors. • Manage Park in a manner to perpetuate the sense of discovery and adventure. • Activity level plans needed to address site specific issues are identified. • Look to adjacent communities to provide most support services and facilities. • Seek funding for purchase of property from willing sellers based on priorities identified in the "Land Protection Plan."	• Follow the existing management approach under *1989 General Management Plan* and other site-specific planning including the *1983 Natural and Cultural Resource Management Plan* . These actions are typically referred to as the "status quo" or no action alternative, since this is what would occur if no planning was undertaken. • Most of the actions continue policies that are now being followed. • New Park lands added in 1994 would continue to be managed under NPS policy and regulations and an interim operations strategy.	• Same as the proposed action, except for differences noted below for "Visitor Use, Services, and Facilities" and "Landownership and Use."
NATURAL RESOURCES			
	• Update *Natural and Cultural Resource Management Plan* to include lands and resources added in 1994. • Priority determined through the *Strategic Plan* .	• Manage resources according to enabling legislation and NPS regulations and policies. • *Natural and Cultural Resource Management Plan* in place. • Prepare a strategic plan annually.	• Same as proposed action.
Air Quality/ Visibility/Night Sky/Noise	• Participate in adjacent land use planning and monitor the visual, air, and night sky resources. • Continue air-monitoring program. • Prepare guidelines for developed areas to establish visual consistency and themes in facility development. • Preserve natural quiet and sounds associated with the physical and biological resources of the Park.	• Active air monitoring program. • Participate in a national air quality network and monitor ozone and particulate matter.	• Same as proposed action.
Water Resources	**Water Rights:** • Park has affirmative responsibility to protect federal reserved water rights. • Maintain proactive water rights protection program including participation in regional water	**Water Rights:** • Preliminary survey of outstanding waters rights has been developed. • Monitor regional water rights issues.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	management activities. • The Park would apply principles under Section 706 of the California Desert Protection Act to manage and protect federal reserved water rights. **Water Use:** • Use water efficiently and frugally. • Continue water-monitoring program. • Assertively compile baseline data on Park's water and water-related resources. • Maintain productive water resources management program. • Continue to monitor Devils Hole water elevation. **Floodplains/ Wetlands:** • Occupancy and modification of floodplain and wetland areas would be avoided wherever possible. **Water Developments:** • Examine use of water developments (guzzlers, livestock tanks, and troughs). Keep developments benefiting native vegetation and wildlife. • Begin restoring natural water sources.	**Water Use:** • Same as proposed action. **Floodplains/ Wetlands:** • Same as proposed action. **Water Developments:** • Maintenance of existing livestock tanks and troughs allowed with Superintendent's authorization.	
Paleontological Resources	• Continue to encourage research of Park paleontological resources. • Seek to obtain a comprehensive geologic map coverage of the Park to delineate geologic areas of paleontological resources. • Increase interpretive program to include paleontological resources. • Continue to patrol backcountry and protect sensitive areas through public closures where appropriate. • Develop comprehensive inventory, monitoring, and database programs.	• Cooperate with researchers to identify paleontological resources. • Most scientific research conducted by entities other than National Park Service. • Protect resources through random patrols of backcountry, as well as limited public closures to protect sensitive sites.	• Same as proposed action.
Geological Resources	• Protect and monitor geological features. • U.S. Geological Survey would map renowned exposed geology.	• Same as proposed action.	• Same as proposed action.
Cave Resources	• Protect cave resources.	• Same as proposed action.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
Sensitive Species	• Protect sensitive species by considering them in all compliance actions. • Continue to manage and protect the 40-acre Devils Hole and its endangered pupfish. • Prepare a plan for the Eureka Dunes area.	• Same as proposed action.	• Same as proposed action.
Introduced Species	• No introducing nonnative plants and animals. • Undertake management actions, including eradication of exotic species. **Burro and Wild Horse Management:** • Adopt the "no burro " strategy that exists for the former monument lands for the new Park lands. • The National Park Service will work with the Bureau of Land Management and the California Department of Fish and Game on feasibility studies that involve boundary fences. • Remove burros and wild horses by a multi-phased approach including live capture, adoption, and possible direct reduction of last remaining animals to reach a zero population level. Phases can be run concurrently in different parts of the Park. **Nonnative Vegetation:** • Continue removal of tamarisk, Russian thistle, and hornwort.	• No introducing nonnative plants and animals. **Burro and Wild Horse Management:** • Management of burros in the former monument is in the final phase of a three-phased program, with a goal of zero burros. This phase involves the removal of burros by animal protection groups at their expense. This option is being exercised by these groups to avoid implementation of a shooting policy. On new lands added to the Park, the National Park Service has entered into an interim agreement with the Bureau of Land Management to manage the area at previous BLM herd management levels until this management plan is completed. **Nonnative Vegetation:** • Same as proposed action.	• Same as proposed action.
Disturbed Land Restoration	• Perpetuate native plant life as part of natural ecosystem. • Landscapes and plants might be manipulated to maintain habitat for threatened and endangered species. • Disturbance caused by natural causes would not be modified unless conditions presented safety or resource protection concerns. • Cultural zones would be managed as a historic landscape. • Rehabilitation of abandoned mine sites would continue.	• Same as proposed action.	• Same as proposed action.
Fire Management	• Formulate desert fire management strategy. • Continue assessment of existing	• *1990 Fire Management Plan* goals are: ▪ Allow fire as an ecosystem	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	fire effects research in desert ecosystems and develop new fire management strategy. • Initiate research burns within specific prescriptions and monitor burn sites to assess changes. • In cooperation with other desert parks, other federal and state land managers, and the research staff in the agency or at universities, fire-related research needs would be identified and long-term studies initiated. • Based on the results of fire management research, the Park would periodically revise its "Fire Management Plan."	process, to resume its natural role to the appropriate practical extent. ▪ Provide for rapid, aggressive and safe suppression of all fires that do not meet management objectives.	
Research	• Same as existing management, with research emphasis provided by CDPA and 1998 NPS Omnibus Act.	• The Park uses a multi-faceted process to initiate the accumulation of scientific knowledge. • Studies may be conducted with in-house expertise and funding, and funding with outside Park assistance (both money and people). • Park resource information needs are defined within the Park's *Resource Management Plan*.	• Same as proposed action.
Inventorying and Monitoring	• Updated *Natural and Cultural Resources Management Plan* would present a detailed program for managing resources.	• Same as proposed action.	• Same as proposed action.
Cultural Resources	• Develop and implement program to identify, inventory, interpret and nominate archeological sites, historic properties, cultural landscapes, and ethnographic resources to National Register of Historic Places. Finish national register nominations. • Develop and implement a systematic applied cultural resource research program to ensure: (1) adequate baseline information on location, condition, threats, and significance/integrity of resources; (2) accurate interpretation and preservation treatment of resources; and (3) the use of appropriate means to manage, protect, preserve, and interpret Native American heritage or other ethnographic resources. • Update *Natural and Cultural Resources Management Plan* to address the requirements, projects,	• Current emphasis on compliance efforts to meet requirements of the National Historic Preservation Act, Director's Order #28: Cultural Resource Management (1998), and the *NPS Management Policies.* • Present cultural resource management programs: (1) data collection and inventory of archeological sites, ethnographic resources, and historic properties; (2) intermittent updating of the list of classified structures; and (3) cultural resource studies.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	and funding to implement the cultural resource program. • Develop collaborative partnerships with government agencies, Timbisha Shoshone Tribe, and public and private organizations that have cultural resource management or research capabilities or expertise.		
NATIVE AMERICAN INTERESTS			
	• *1989 General Management Plan* management strategy is out of date. The current approach is cooperation and collaboration between the Timbisha Shoshone Tribe and the National Park Service and as appropriate, other USDI agencies. • One of the most significant elements of collaboration is the study of land suitability conducted between the Timbisha Shoshone Tribe and the Department of the Interior. The draft report, "The Timbisha Shoshone Tribal Homeland (1999)," contains the recommendations of the joint Federal-Tribal negotiating team responsible for carrying out the suitability study. • The study recommends the transfer of 319 acres at the current Furnace Creek Village site to the Tribe in trust. • The study also recommends to seek designation of an area primarily in the western part of the Park as the Timbisha Shoshone Natural and Cultural Preservation Area.	• Same as proposed action.	• Same as proposed action.
VISITOR USE, SERVICES AND FACILITIES			
Interpretation	• Develop comprehensive interpretive plan to replace outdated "Interpretive Prospectus (1990)." • Continue interpretive services wherever NPS staff can effectively meet with the public to increase their understanding and appreciation of Park resources. • Expand interpretation regarding Native American activities. • Expand interpretation efforts to areas outside the Park. • Cultural resource sites that are easily accessible and historically important would be treated as significant interpretive stops. • The Park would increase efforts to inform the public, particularly in	• Continue to use "Interpretive Prospectus (1990)" for interpretive guidance and planning. • Continue upgrading interpretive waysides within the Park in accordance with a wayside exhibit plan prepared by Harpers Ferry Center. • Wayside exhibits would be developed for key features along heavily traveled corridors within recently acquired lands.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	backcountry locations, that all historical and archeological objects are protected under federal law. • The Park would continue to seek additional ways to improve the living history program or other methods of interpreting Scotty's Castle. • To ensure the protection of especially fragile natural and cultural values, resource management specialists, interpretive planners, and designers would work together to develop ways for visitors to see the resources without causing unacceptable damage.		
Information/ Orientation	• Continue to provide information at heavily visited areas, such as Furnace Creek visitor center, Scotty's Castle, and all ranger stations. • Continue managing staffed information/fee collection stations in Beatty, Nevada and at Stovepipe Wells. • Develop unstaffed orientation/ information stations ("reception centers") along the Park's five major entrance roads in association with proposed and existing fee collection stations. • Provided information via Park internet homepage. • Post signs or exhibits at key intersections. • Provide basic orientation information 24 hours using a variety of methods such as lighted exhibits, brochure dispensers, audio, permanent and portable information. • Use minimal on-site information/ interpretive services such as signs and interpretive exhibits in the backcountry. • Continue to upgrade interpretive wayside exhibits in accordance with a wayside exhibit plan. • Cooperate with other agencies and organizations to make information available along approach routes to the Park.	• Provide information at existing visitor facilities. • Continue to provide visitors with information at ranger stations (Grapevine, Beatty, Stovepipe Wells, and Wildrose) and operate with volunteer staff as available. • Continue supporting multi-agency information center at Lone Pine. • Continue to assist visitors approaching the Park from I-15 at Mojave National Preserve' s Baker visitor center. • Provided information via Park internet homepage.	• Same as proposed action.
Visitor Facilities	• The Park staff would consider creative ways to increase the recreational opportunities for visitors with disabilities.	• Continue managing major visitor centers at Furnace Creek and Scotty's Castle. • Provide ranger stations at	• Same as proposed action except for developed campgrounds.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	• Entrance stations are planned for State Highway 190 on the east and west sides of the Park. • The existing Grapevine Ranger Station would continue as an information station that is staffed as staff and funding allows. • Continue to operate major visitor centers at Furnace Creek and Scotty's Castle, and support interagency information centers. • Improve interpretive displays at Furnace Creek visitor center and provide more displays to include information on recently acquired lands. • Provide comprehensive design packages for visitor facilities that would strive to balance resource protection with visitor access and safety, minimize impacts on sensitive resources, and improve the visual quality of the areas and overall visitor experience. • Provide improvements at key attractions such as Badwater or especially sensitive natural and/or cultural resources such as Eureka Dunes and Devils Hole to protect resource values. **Developed Campgrounds** • Improve existing campgrounds by reducing safety hazards, better defining and separating sites, improving restrooms, and adding amenities such as newer picnic tables. • Redesign all RV campgrounds to meet national fire codes that allow a maximum of 30 RVs per acre. • Redesign the Sunset , Texas Spring, Stovepipe Wells , and Furnace Creek campgrounds to accommodate average winter demand and improve camping conditions.	Grapevine, Wildrose, Shoshone , and Beatty. **Developed Campgrounds** • Currently maintain nine developed campgrounds offering approximately 1,500 campsites. • Smaller campgrounds or parts of campgrounds may be eliminated if situations arise where threats to visitor health and safety can not be mitigated.	**Developed Campgrounds** • Same as existing management except, close Emigrant campground because of the flood hazard.
Recreational Day Use Activities	• Support day use activities that are compatible with Park management objectives and current visitor needs. • Continue to prohibit recreational activities that would involve or result in: ▪ Inconsistency with the Park's enabling legislation or proclamation, or derogation of	• Same as proposed action.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	the values or purposes for which the Park was established ▪ Unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities ▪ Inappropriate Consumptive use of Park resources ▪ Unacceptable impacts on Park resources or natural processes ▪ Unacceptable levels of danger to the welfare or safety of Park visitors, including participants.		
Backcountry and Roadside Camping	• Establish small, primitive campsites in some remote areas of the Park to offer alternative camping experiences. • Designate specific campsites in some areas to protect sensitive resources. • Complete wilderness/ backcountry management plan to provide specific guidance. • Currently there are over 400 miles of backcountry roads that are open to camping with an unknown number of informal campsites.	• Same as proposed action.	• Same as proposed action.
Backcountry Cabins	• Visitors can use cabins on a first-come, first-served basis according to interim management direction. Limit length of stay to 30 days annually. • Prepare a survey and conduct inventory of cabins within the Park. • Possibly revise management direction for some structures according to results of inventory.	• Same as proposed action.	• Same as proposed action.
Visitor Use in Saline Valley	• A site specific management plan to create a strategy for management of the area consistent with NPS mandates and policies would be prepared in consultation with interested public through the NEPA process. • The plan would address protection of natural and cultural resources, exotic species, public health and safety, and environmental restoration, environmental and social carrying capacity of the land, and designation of the site as a backcountry campground and the appropriate number and development of sites. • The following would limit the	• Saline Valley Warm Springs has vault toilets, fire grills, shower, soaking tubs and picnic tables that have been installed and maintained by the public using the springs . • No site planning. • Roadside camping is allowed. Vehicle use around springs not restricted. • The Park's 30-day annual camping limit applies. • The Saline Valley Road is maintained by Inyo County. • A volunteer camp host provides some visitor services and communications with the Park.	• All areas within the Eureka-Saline wilderness road corridor would be open for roadside camping . • Designated car camping sites would be established in the area of springs with a minimal amount of other improvements to be considered within a site plan. • No airstrip would be permitted; this would require a special regulation in 36CFR as well as adequate safety and maintenance work. • Road maintenance,

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	scope of the activities permitted at the springs : ▪ Soaking tubs/spas would be limited to the current level of improvements. ▪ The Upper Springs would continue to be protected from human improvements and use and from burros. ▪ The Saline Valley Road would be maintained to its current surface condition by Inyo County. ▪ An analysis will be made of the Chicken Strip airstrip to determine whether to retain it under 36CFR or whether it should be closed due to safety and/or resource impact concerns. • The proposed site plan will also consider options for the active restoration of the upper springs to a natural condition. • Depending upon future use levels and priorities, the National Park Service could consider maintaining some of the facilities at the springs . • The National Park Service would work with groups associated with the springs , to manage this place in a manner where all members of the public feel welcome. • The National Park Service would not actively promote expanded public use of the springs.	• The Chicken Strip airstrip remains open, but is not designated as such per USDI standards. • The Tail-Dragger airstrip is closed.	between Saline Valley Road and Lower Warm Springs, trash pick up and removal, toilets and all other maintenance functions at the warm springs would continue to be done by user groups under agreements with the Park. • A volunteer camp host system would continue to provide visitor services.
Visitor Use Fees	• In addition to the methods currently employed and being developed, the Park would explore the possibility of fee collection by third parties. • The National Parks Pass are sold at all national parks and over the internet via several retail partners. • Entrance fees are presently collected at the Furnace Creek visitor center, the Grapevine Entrance Station, Beatty , Stovepipe Wells , and Baker. • Entrance and information stations will be constructed at east and west Park boundaries on Highway 190. • Filming and incidental business permits would continue to be granted on a case-by-case basis.	• Entrance fees are presently collected at the Furnace Creek visitor center, the Grapevine Entrance Station, Beatty , Stovepipe Wells , and Baker. • Fees are also collected at the developed campgrounds . • Filming and incidental business permits would continue to be granted on a case-by-case basis. • Commercial tour buses are charged an entrance fee based on the seating capacity of the bus.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	• Commercial tour buses are charged an entrance fee based onn the seating capacity of the bus.		
Commercial Services	• No major changes to current commercial services. • Continue current concession contract providing lodging, a restaurant and bar, gift shops, general store, and gas service at Stovepipe Wells and food service, a gift shop, and gasoline at Scotty's Castle.	• Stovepipe Wells offers visitors general services such as lodging, food, gasoline, and a small market, while Scotty's Castle provides food, gasoline and a gift shop. • The Park works cooperatively with the owners of Panamint Springs Resort and with Amfac Resorts, which owns and operates commercial services at Furnace Creek, but does not have any authority over management of these commercial services. • The Park has no plans for new commercial services.	• Same as proposed action.
GENERAL DEVELOPMENT CONCEPTS			
	• A historic resources study, cultural landscape report and a development concept plan for Scotty's Castle would be prepared. • A development concept plan for administrative and visitor facilities at Furnace Creek and administrative facilities at Cow Creek would be prepared as a combined document. • Complete development concept plan for the Grapevine area which is underway to address the following: ▪ Employee housing would be improved and temporary facilities would be eliminated. ▪ Some NPS and concessioner employees now residing at Scotty's Castle would be relocated to Grapevine. A small community building and recreation facilities would be provided. Some maintenance functions could be relocated from Scotty's Castle. ▪ Museum quality items now stored in various buildings at Scotty's Castle would be moved into a climate-controlled structure at Grapevine or another location within or outside the Park to provide the most appropriate storage. • Stovepipe Wells would be renovated in accordance with updated site	• A development concept plan for Stovepipe Wells was completed in 1980 and is being updated. • A development concept plan for Cow Creek was completed in 1984. • A development concept plan for Grapevine is underway.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	management plan: ▪ The existing campground would be redesigned. ▪ The ultimate number of RV hookup campsites will be determined. ▪ A paved section of the existing airstrip would be converted for helicopter use. The remainder of the airstrip would be converted to a gravel strip and not be used as an overflow camping area. ▪ Landscaping would utilize native species and would depend on water availability. • A site plan would be developed for the Wildrose area.		
ROADS AND CIRCULATION			
	• The current road management plan for the Park would be reevaluated because of changes in visitor use patterns, increased number of buses entering the Park, the addition of more roads from Park expansion and a need to readjust maintenance priorities in reaction to funding levels. • The plan would determine such things as the status of duplicate road sections, road surface conditions and the appropriate level of maintenance. • The National Park Service would propose to Caltrans that Highway 190 would be realigned at Stovepipe Wells.	• Currently, the Park maintains 243 miles of paved roads, 300 miles of maintained dirt roads, and 100–200 miles of unmaintained dirt roads. • California State maintains Highway 190 that traverses the Park. Highway 190 is designated as a national scenic byway. • Inyo County maintains about 75 miles of paved and non-paved roads in the Park. • Little or no maintenance is performed on high clearance and four wheel drive backcountry roads. However, emergency repairs may be undertaken following flash floods. • Vehicle use in the Park is limited to street legal vehicles and no offroad driving is permitted.	• Same as proposed action.
Trails	• Same as existing management with the addition of installing trailhead orientation signs at all key trailheads.	• Wilderness /backcountry management plan would address trail use by hikers, equestrian, bicycles, and people with disabilities. • Hikers are allowed on all open trails, while most backcountry trails are open to stock use. • Heavily used pedestrian walks or trails are not open to stock use. • Bicycles are not allowed on trails or in wilderness.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
Signs	• Keep same philosophy as in existing management.	• Sign philosophy is to keep signs unobtrusive and to blend with the natural environment. • Keep secondary or backcountry roads with minimal directional, instructive, or interpretive signs. • Construct new signs only to keep visitors from becoming lost and allow the backcountry roads to remain lightly traveled. • Provide maps and other mediums to reduce need for signs.	• Same as proposed action.
ADMINISTRATIVE OPERATIONS AND FACILITIES			
Park Administration	• Administrative headquarters for the Park are currently located at Furnace Creek. The NPS structures there were built in the 1960s and are inadequate for existing staff or storage needs. Water is a critical limiting factor in the Furnace Creek area. • Several historic Civilian Conservation Corps-era adobe structures at Cow Creek provide limited additional space for offices. • The Park also maintains satellite field offices at Scotty's Castle and Stovepipe Wells. • Currently, there are Park operations offices located outside the Park at Beatty, Shoshone, and Owens Valley.	• Park headquarters, administrative, resource management, visitor and resource protection, interpretive, and maintenance staff, buildings, and employee housing would remain in the existing Furnace Creek, Cow Creek, Grapevine, Scotty's Castle, Stovepipe Wells, and Wildrose areas of the Park.	• Same as proposed action.
Employee Housing	• The majority of the Park staff live at the Cow Creek housing area. There are about 60 housing units and 37 transient trailer/RV sites at this location. • California Department of Transportation, California Highway Patrol, elementary school employees, and the Natural History Association director occupy nine additional units constructed and maintained by them. • The development concept plan underway for the Grapevine area would recommend providing housing and replacing the existing trailers for the northern district of the Park. Ongoing trailer replacement with permanent	• The majority of the Park staff live at the Cow Creek housing area. As of 1998, there are 60 housing units and 37 transient trailer sites at this location. • Ongoing development concept plan at Grapevine would consider trailer and housing replacement at that location.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	houses would continue. • Transient trailers and RVs are allowed in designated NPS areas, but not permanently placed trailers. • Prior to constructing additional housing for employees, the Park would evaluate the location of the housing and make a determination about whether private housing elsewhere within a one hour drive could serve the same need, and whether the total housing units are the minimum necessary to meet the mission of the Park		
Solid Waste Disposal	• Same as existing management.	• Solid waste disposal is hauled to an approved landfill outside of the Park.	• Same as existing management.
LANDOWNERSHIP AND USE			
	• The Park would continue to regulate nonfederal rights on federal lands through existing laws and regulations, while pursuing acquisition.	• The Park regulates nonfederal rights on federal lands through existing laws and regulations.	• The Park would continue to regulate nonfederal rights on federal lands through existing law and other regulations, while pursuing acquisition in sensitive areas.
Park Boundary	• Technical and drafting errors may be corrected; otherwise, no changes in the boundary of the Park are proposed. • Park acreage approximately 3,396,172.	• Final boundary map and legal description submitted to Congress. • Park acreage approximately 3,396,172.	• Same as proposed action.
Wilderness	• Manage wilderness for maximum statutory protection, per California Desert Protection Act . • Approximately 95% of the Park designated wilderness . • Prepare wilderness/backcountry management plan. • For each non-emergency entry, the grazing allottee may enter Park wilderness, under certain conditions, with a motorized/ mechanized vehicle or use motorized equipment with permission from the Superintendent. • Emergency entry (imminent danger of loss of livestock, severe facility damage, an injured person requiring transport, or a life-threatening situation) with a motorized/mechanized vehicle and/or requiring the use of motorized equipment must be reported before or just after it occurs.	• Same as proposed action. • Recommendations of the wilderness/backcountry management plan would be implemented. • Wilderness management focused on overflights , horse patrols, and backcountry road patrols on open wilderness corridors to identify illegal uses.	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	• The Wilderness Act generally prohibits motorized equipment or mechanized transport in designated wilderness areas; however, it allows them "as necessary to meet minimum requirements for the administration of the area for the purpose of this Act."		
Land Acquisition	• A land protection plan would provide direction for land acquisition. • The Park Service would seek funds to acquire private lands and interests in the Park. • Private land at Furnace Creek and Panamint Springs would be acquired if requested by the owners. • Donations and exchanges are pursued from willing sellers and third party acquisitions from willing sellers are encouraged. • Exchange of state school sections would continue per CDPA direction.	• NPS purchase of private lands and interests in the Park is not an ongoing or active program. • Donations and exchanges are pursued from willing sellers, and third party acquisitions from willing sellers are encouraged. • Exchange of state school sections ongoing per CDPA direction. • A draft land protection plan was prepared in the mid-1980s but was never finalized. The draft plan has been updated to reflect the addition of the new land.	• Same as proposed action, except: Private lands or interests would only be acquired on an opportunity basis if the Park Service were approached by a landowner wanting to sell, the interest was located in a sensitive area, or a development project would adversely affect Park resources. • Exchange of state school sections ongoing per CDPA direction.
Mineral Development Activities	• Same as existing management.	• The California Desert Protection Act withdrew the Park from all location, entry and patent under the mining laws, and from mineral and geothermal leasing and mineral materials sales, subject to valid existing rights. • National Park Service would regulate mineral development on valid mining claims in accordance with 36 CFR Part 9A. Where proposed development fails to meet 9A approval standards and no alternative development scenario is feasible, the National Park Service would initiate acquisition. • Whenever a proposed mineral development fails to meet the regulatory approval standards and no alternative development scenario is feasible, the National Park Service would seek funding to initiate acquisition of the mineral rights.	• The Park Service would prepare a minerals management plan that analyzes sensitive resource values and the potential impacts of likely mineral development scenarios. Where mineral development would significantly conflict with resource values, the Park Service would seek funding to acquire the mineral rights. • Until funds were appropriated, proposed mining operations would be evaluated under NPS regulations at 36 CFR Part 9A as under existing management.
Abandoned Mines	• The National Park Service would seek funding to complete an	• General information of abandoned mine lands for the	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	abandoned mineral lands inventory on the expanded Park lands and develop reclamation plans. • Death Valley would implement remediation, stabilization, and restoration program on abandoned mineral land sites, as funding is available.	old Monument area is provided in the "1981 Historic Resources Report" by Greene and Latschar. • A preliminary inventory of abandoned mining properties on the new lands was generated from existing information in the U.S. Geological Survey and Bureau of Mines databases. • Additional detailed surveys would be conducted to provide more detailed information on the abandoned mineral properties parkwide. • Appropriate stabilization, reclamation, and hazardous material clean-up would be carried out after development plans and environmental and cultural resources compliance had been completed, and, as funding was available.	
Sand and Gravel for Road Maintenance	• Use of borrow materials for road maintenance would be evaluated in road management plan.	• Building materials, (sand, gravel, cinder, etc.) geo-thermal resources and oil and gas on federal lands are not available for extraction or sale. • Use of borrow materials for road maintenance must conform to existing NPS policy that requires materials to be obtained from nonpark sources, unless economically infeasible.	• Same as existing management.
Grazing/Range Management	• No grazing is permitted on the former Monument lands. • Grazing privileges would continue to be managed under existing allotment management plans, NPS regulations, policies, Park management direction, and special use permits at no more than the level as of October 31,1994. • The small portions of the Eureka Valley and Lacey-Cactus-McCloud allotments that the Park acquired would be closed to grazing. • An allotment management plan would be prepared by the National Park Service for the remaining grazing allotment. • The California Desert Protection Act directs the Secretary to make the acquisition of "base property"	• Grazing is not permitted within the former monument. • The California Desert Protection Act provides that the privilege of grazing cattle on lands within the Park shall continue to be exercised at no more than the current level as of October 31, 1994, subject to applicable NPS regulations, policies and Park management direction. • Four allotments totaling over 2700 animal unit months (AUMs). • Fees would be based on allotment schedules and NPS Special Use Permit costs. • Restrictions on grazing use would be based on resource conditions, visitor safety and	• Same as proposed action.

	PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL APPROACH (ALTERNATIVE 3)
	from willing sellers a priority above all other acquisitions in the Park. • Fees would be based on allotment schedules and NPS Special Use Permit costs. • Restrictions on grazing use would be based on resource conditions, visitor safety and wilderness values. • The Superintendent has the discretion to lower grazing levels, as necessary to respond to resource protection needs, visitor safety, or wilderness values. • National Park Service would allow appropriate maintenance of existing range developments. Ranchers would normally be required to access wilderness on foot or horseback, similar to other users.	wilderness values. • The Superintendent has the discretion to lower grazing levels, as necessary to respond to resource protection needs, visitor safety, or wilderness values. • National Park Service would allow appropriate maintenance of existing range developments. Ranchers would normally be required to access wilderness on foot or horseback, similar to other users.	
PLAN IMPLEMENTATION			
	• This *Environmental Impact Statement / General Management Plan* identifies further activity level planning needed to guide management of the Park. • Phased schedule provided for additional planning. • Burro removal, salt cedar removal, and the development of a grazing management plan to begin immediately.	• Priorities for allocation of staff and funding determined on a year by year basis using the strategic planning process. • Strategic plan sets five-year planning goals that could be revised and adjusted yearly. • Staff and funding adjusted as needed to place resources where most appropriate to meet the demands. • Activity level planning would be pursued, with most of the identified plans being completed within the next five years.	• Same as proposed action.
Staffing and Funding	• Increase in Park operating base of $1.7 million and 37 staff needed to fully implement *General Management Plan* . • Implementation of developments and improvements estimated at $25.7 million.	• Park FY 00 operating base is $5,337,000. • Existing staffing is 108 and operating budget is $5.4 million.	• Same as proposed action.

TABLE 2: SUMMARY OF IMPACTS

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
IMPACTS ON NATURAL ENVIRONMENT		
• When burros are removed from Death Valley National Park and as grazing allotments are phased-out or reduced , there would be a reduction of disturbed soils. • A Saline Valley site management plan would reduce adverse impacts on soils and would provide a better opportunity for the disturbed soil's recovery. • Vegetation consumption and trampling would diminish with the removal of burros and the removal of cattle as grazing is phased-out or reduced. • During burro capture operations there could be some localized, short-term disturbance to vegetation from the capture crews and their equipment during the capture operation. • Removal of exotic plants will provide increased opportunities for native vegetation to recolonize areas and recover. • A Saline Valley site management plan would reduce adverse impacts on vegetation and would provide a better opportunity for the recovery of the area's natural vegetation. • Wilderness designation of 95% of the Park will provide increased vegetation protection. • The removal of burros from the Park and the phasing out of grazing would eliminate their adverse impacts on the Park waters. Springs and creeks would no longer be contaminated by burro wallowing, defecation, or urination. • As burros are removed from the Park and as cattle grazing is phased-out or reduced, wildlife populations would benefit from less competition for resources. • As natural water sources are restored, wildlife populations would adjust to more natural condition. • Studies would be undertaken to determine if guzzlers have contributed to unnaturally high wildlife populations and possible overuse of native vegetation. • Localized populations of wildlife may be disturbed for short periods of time during the burro capture operations. No long-term adverse impacts on wildlife from these operations would be	• The major negative impacts to the natural environment are due to the presence of burros and tamarisk. These impacts include: damage to soil crusts, reduced water infiltration, inhibit nitrogen fixation in desert plants, provide a favorable seed bed for exotic annuals, soil compaction, destruction to natural springs , and destruction to native vegetation. • Vegetation is affected to varying degrees by non-native burros , tamarisk, and by unrestricted camping activities like at Saline Valley. • Burros are known to contaminate water sources (through defecation and urination), over-browsing, elimination of aquatic and riparian vegetation and monopolizing the use of springs or seeps. • Developed water (guzzlers, mining, and livestock water developments) may be affecting native wildlife populations by allowing some populations to grow to levels unobtainable with available natural water. • Mining or agriculture activities on private or state lands and mining claims could negatively impact natural resources.	• Same as proposed action, except: • The desert environment would not be restored near the Chicken Strip. • Designation of campsites at Saline Warm Springs would result in less damage to the landscape and would have a positive impact for the desert environment. An approach of minimal development would limit impacts upon natural resources from construction but minimal controls on visitor use would allow for an increase in the degree of impacts related to human use of the area, if visitor use increases.

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
expected. • With the establishment of wilderness in 95% of the Park, additional protection to wildlife populations would be predicted. • With the enactment of proposed inventory and monitoring programs the status and of the effects of the proposed programs on vegetation and wildlife will be better known. • Most of the lands proposed for the Timbisha Shoshone Homeland are outside the Park, but some adverse impacts are anticipated on natural resources in the Furnace Creek area as a result of development for housing , tribal offices and recreation facilities and possible inn and cultural museum. These developments would be subject to the NEPA process. • Traditional tribal activities on cooperative special use areas are not predicted to result in adverse impacts to native plant communities or special status species. Wildlife may benefit from habitat restoration and management activities. • Anticipated water usage at the site would be 92 acre feet, which would be acquired through conservation measures and be subject to availability and securing an allocation subject to valid existing rights.		
IMPACTS ON CULTURAL RESOURCES		
• Archeological resources, historical properties, cultural landscapes and ethnographic resources would benefit from an expanded systematic inventory, research and preservation program. • Reduced damage to archeological resources with burro removal and active management of the cattle allotments . • The draft LEIS for the Timbisha Shoshone Homeland proposal predicts significant advantages and improvements to the condition of cultural resources as a result of the creation of tribal homeland and the improvement in collaboration and cooperation between the Tribe, the National Park Service and the Bureau of Land Management. • Development of a site management plan for the Saline Valley area would identify cultural resources and recommend methods to protect and interpret them. • Additional mining related cultural	• Cultural resources are potentially threatened by burro and cattle trampling and by visitor camping , vandalism, illegal acts such as artifact collecting or driving near isolated and unprotected sites. • Historic properties listed on, or determined eligible for listing on, the national register would continue to be afforded stabilization / preservation treatment as funding allows. • Impacts from recreational use on cultural resources in the Warm Springs area of Saline Valley are unknown, but potentially significant. • The Park Service is unable to protect historic and archeological features on private lands against decay and vandalism.	• Same as proposed action.

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
resources potentially important to the history of the Park could be acquired.		
IMPACTS ON NATIVE AMERICAN INTERESTS		
• NPS commitment to positive and productive government-to-government consultation and collaboration with tribal representatives, including the current land suitability study and other subjects of common interest would maintain positive relationships with the Tribe and help resolve some long-standing issues. • Development of mutually satisfactory approaches to concerns between the Tribe and the Park Service will increase the ultimate cooperation between the Tribe and the Park Service. Expanded cooperation and collaboration would provide significant benefits to both the Park and the Tribe. • The Tribe would be able to pursue construction of additional housing and other amenities to provide a more suitable situation for Tribal members. • Implementation of provisions of the Homeland Study would result in positive impacts to Native American interests. • Greater collaboration and cooperation between the Timbisha Shoshone Tribe, the National Park Service and the Bureau of Land Management are predicted as a result of the creation of a tribal homeland. This would in turn result in opportunities to address cultural resource needs and expand interpretive perspectives for visitors.	• Informal communication works well on many issues. A more structured process, however, might well result in greater opportunities for collaboration and cooperation. • Native American interests could be better identified and considered in Park decision making.	• Same as proposed action.
IMPACTS ON VISITOR USE, SERVICES, AND FACILITIES		
• As burro numbers are reduced, there would be fewer opportunities to see burros in the Park. Some people would be upset over the direct reduction of the last few burros. • To others, as the damaged habitat recovers, seeing fewer burros would be viewed as a positive impact. • Most of the proposed Timbisha Shoshone Homelands are outside the Park, but future development at Furnace Creek for housing, tribal offices and recreation facilities and a possible inn and cultural museum would be consistent with existing commercial development and the desire to improve visitor opportunities at Furnace Creek. The proposal would likely improve visitor facilities and opportunities in the Park. • Traditional tribal activities on	• Some visitor's experience would be affected by viewing cattle ranching, burros, mining, guzzlers, and stock tanks. • Saline Valley's existing management would continue, with consequent natural and cultural resource impacts. • The Saline Valley Road would continue to get occasional maintenance from Inyo County. • The Chicken Strip airstrip would remain open, but not designated as such, per USDI standards. • Visitors would encounter mining development activities, sometimes in designated wilderness, that may appear to some as a conflict with the Park's conservation purpose.	• Same as proposed action, except: • The Chicken Strip airstrip would remain open for planes and would be so designated under 36CFR.

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
cooperative special use areas (gathering of plants, use of springs , and maintenance of mesquite groves) are not predicted to result in adverse impacts to visitor use. • Improved collaboration and cooperation with the Tribe would create opportunities to address cultural resource needs and expand interpretive perspectives for visitors. • The potential inn and cultural museum developments would create some options for lodging and would provide visitors with a perspective on Native Americans and their heritage that is presented from the perspective of the Timbisha Shoshone Tribe. • Access for people with disabilities to trails and campsites would improve their opportunities for use of the campgrounds . • Changes proposed for the Saline Valley area with an increased NPS presence in the area's operations and maintenance may seem to create too structured an operation to some within the Saline Valley Warm Springs advocate group. • An analysis of the Chicken Strip will be done to determine if it should remain open. • Increased NPS management in the Saline Valley would help maintain its qualities by protecting the resources from potential increases in visitation and unmanaged visitor activities. • As private and state lands are purchased, more public lands would be available for visitor use and less incompatible development activities would occur in the Park.		
IMPACTS ON SOCIOECONOMIC ENVIRONMENT		
A separate analysis of socioeconomic conditions in the planning area and the effects of the proposed action was conducted by Dean Runyan Associates under contract to the National Park Service . That analysis concluded that no significant effects would occur in the Northern and Eastern Mojave planning area as a result of the proposed action. There would be some loss of grazing related jobs if allotments were acquired, but the overall effect would be offset by an increase in tourism jobs. Implementation of the Timbisha Shoshone Homeland proposal would generate minor socioeconomic effects locally and regionally, including placing additional demands on local services, to removing over 7,000 acres from BLM ownership, causing a small decline in BLM fees paid to counties. Positive effects on the tribe's socioeconomic environment is the desired outcome of the legislation and are predicted to occur over a number of years as a result of revenue generating activities. Major social benefits include the ability of the tribe to live on their own lands in modern communities, with access to traditional use areas, in association with the tribal homelands.		
IMPACTS ON ADMINISTRATIVE OPERATIONS AND FACILITIES		
• Burro removal would increase short-term Park costs and staff time (about $410,000 not counting staff time). • Grazing fees use would be limited to resource management projects and management of the grazing program.	• The estimated cost for capture, transporting, adoption preparation and adoption for 51 burros per year would average about $61,000. • There are significant additional costs for trespass burros that enter	• Same as proposed action, except: • No airstrips would be permitted.

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
• For Saline Valley, funding would be needed to make campsite improvements, to provide facilities and resource protection, to develop a site management plan, for increased maintenance costs, and for the Chicken Strip study. • With the possible relocation of some NPS services outside of the Park, there would be increased transportation time and expenses for employees who have to work in the Park. • Housing opportunities would increase for employees living outside the Park, and demand on Park housing would not increase. • Although most of the proposed Timbisha Shoshone Homelands are outside the Park, future development at Furnace Creek for housing, tribal offices and recreation facilities and a possible inn and cultural museum would create a slight increase in workload for Park staff over the short term for compliance purposes. Traditional tribal activities on cooperative special use areas would create a small additional workload for permitting and monitoring purposes. • There would be a large initial administrative workload and cost to acquire properties. However, this workload would diminish over time as nonfederal lands and interests are brought under public ownership.	the Park from adjacent BLM herd management areas and from burro reproduction of 20% per year. • There are minor costs for administering wilderness access and guzzler maintenance. • Grazing fees collected under the existing management are not sufficient to manage a grazing program. Additional funding would be needed. • Campground administration support would be continued with staff and volunteers managing campgrounds • National Park Service would have to tolerate the undesignated Chicken Strip airstrip. • With the addition of new lands workloads would increase, limiting the Park Service's ability to serve the public and protect resources. • Some employee housing would remain inadequate and below reasonable standards.	
IMPACTS ON LANDOWNERSHIP AND USE		
• Allotment management plans would replace the BLM plan (Hunter Mountain Allotment) and provide management direction for the Last Chance Allotment. • Under NPS management, grazing fees might be increased. • The change in grazing management operations with the chance of more grazing limitations, control of nonnative species and higher grazing fees might influence the future value of the grazing allotments. • The receiving communities of new NPS offices and employees may see an increase in property values and an increase in demand for community services and utilities. • Impacts on mineral development activities would be the same as the existing management alternative. • Implementation of the Timbisha	• Burros continue to use ranchers' water and forage allocated for cattle. • The Park would regulate nonfederal rights through existing laws and regulations. • Purchases of nonfederal properties are not actively pursued, but may occur on an opportunity basis from willing sellers.	• Same as proposed action, except: • Private land or interests would only be acquired in sensitive resource areas from willing sellers, or if a development project would adversely affect Park resources. • Increased acquisition of mineral rights would occur as a result of the sensitive resource analysis and the identification of areas where mineral development would be incompatible with the Park mission.

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
Shoshone Homeland proposal would result in the transfer of 314 acres of federal land inside the Park to be held in trust by the Secretary of the Interior for the Tribe, as well as approximately 120 acres of private land in Saline Valley. There would also be an additional 7,240 acres of BLM managed lands transferred and held in trust. These lands would be for the exclusive use of the Timbisha Shoshone Tribe and would no longer be available for general public use, except as authorized by the Tribe. Some of these lands would be converted from conservation status to development status by virtue of the anticipated economic developments.		
CUMULATIVE IMPACTS		
• The acquisition of grazing allotments on a willing-seller willing-buyer basis and removal of most of burros in Death Valley National Park would contribute to the overall restoration of the desert's vegetation, soils, waters, and wildlife to more natural conditions. • There would be less overall development of desert habitat and resources on a regional basis. • There would be a reduction in the burro populations within the California desert area's public lands. • Impacts to burros from the potential loss of habitat and a possible increase in the number of injuries or deaths may result from the increased activities at two sites near the Park (the proposed expansions at the National Training Center at Fort Irwin and the expected expansion of the Briggs Mine). • The potential reduction in tax dollars is partially mitigated by payments in lieu of taxes that are paid to the counties for lands acquired by the federal government. Additionally, occupancy and sales taxes have and would continue to grow. • The growth in tourist dollars spent on food, lodging, transportation, and other items expended in the area is expected to continue. • The existing withdrawal of some Park land from mineral entry over the last twenty years by the Mining in the Parks Act, the Bureau of Land Management for wilderness study areas or other purposes, and by the California Desert Protection Act, has removed some areas	• Maintaining wild horse and burro herd at the NPS units and BLM land, as well as the concurrent burro management with the Bureau of Land Management 's other planning efforts, Clark County, Nevada, the Navy's China Lake, and Inyo and San Bernardino National Forests would increase the number of burros available for adoption, significantly increasing management costs and the problems of finding homes for the burros. • The effects of burro and cattle grazing on the soil, water, flora, and fauna are major and cumulative. Restoration of the California desert is inhibited while these animals remain. • Increases in animal populations (domestic, feral, and native) due to availability of water by fabricated devices might cause regional adverse effects (use of more resources at a faster rate than can be replaced) on the desert ecology. • Cumulative impacts on archeological sites, ethnographic resources, and historic properties are difficult to analyze with precision. • It is presumed that degradation caused by erosion, casual collection, and deterioration to features is more likely to happen when large groups of people are at an archeological site. • Growth of administrative facilities is limited due to availability of	• Same as the proposed action

PROPOSED ACTION (ALTERNATIVE 1)	EXISTING MANAGEMENT (ALTERNATIVE 2)	OPTIONAL ALTERNATIVE (ALTERNATIVE 3)
of the desert from potential mineral development except for valid existing rights in those areas. • Depending on the commodity, small regional price increases could result from increased transportation or development costs in other areas. The price of gold, the primary mineral sought, would not be affected by any actions in the planning area. Any loss of jobs in one sector is expected to be offset by stable and sustainable growth in jobs in the service and tourist industries. • There would be no adverse cumulative impacts on cultural resources under this alternative. • Implementation of the Timbisha Shoshone Homeland proposal would result in 7,554 acres of public lands (314 acres are within the Park) being transferred and held in trust for the Tribe. These lands would be for the exclusive use of the Timbisha Shoshone Tribe and would no longer be available for general public use, except as authorized by the Tribe. • Although these lands don't currently receive a large amount of public use, this loss of public lands could be viewed by some as contributing to the perceived loss of access to public lands that occurred by the designation of wilderness. • Development on these transferred lands would contribute incrementally to other ongoing activities in the area, including mining, economic developments at the Nevada Test Site, population growth in Pahrump and anticipated developments in the planned Science and Technology Corridor in Nye County, Nevada.	water and with natural resources receiving priority of use. • There are believed to be only a few warm springs in the California desert that have native flora and fauna intact. This condition would not be improved under this alternative. • Development of mining claims and state lands in the Park could contribute to overall loss of desert resources and habitat for native species in the region. Potential road closures by claimants during active mining could result in a small additional decrease in overall public access. • The existing withdrawal of some Park land from mineralentry over the last twenty years has removed some areas of the desert from potential mineral development, except for valid existing rights. Depending on the commodity, small regional price increases could occur from increased transportation or development costs in other areas if properties are denied operating permits due to regulatory standards and are purchased. The price of gold, the primary mineral sought, would not be affected by any actions in the planning area. • Any loss of jobs in one sector is expected to be offset by stable and sustainable growth in jobs in the service/tourist industry.	



PURPOSE OF AND NEED FOR THE PLAN



INTRODUCTION

The purpose of the federal action is to prepare a general management plan for the expanded Death Valley National Park. The goal of the general management plan is to determine how best to manage the unit to meet the Congressional intent as expressed in the California Desert Protection Act and the mission of the National Park Service. The Park was created in 1994 by the California Desert Protection Act, at which time the existing Death Valley National Monument was expanded by 1.3 million acres, designated a national park, and designated 95% wilderness. An existing general management plan for the monument, approved in 1989, served as the basis for the development of this proposed general management plan.

General management plans provide the overall management strategy for approximately 10–15 years. More detailed activity or implementation plans are prepared after this plan is approved. General management plans are broad in scope rather than specific, and focus on purposes of the unit, its significant attributes, its mission in relation to the overall mission of the agency, what activities are appropriate within these constraints, and resource protection strategies. They also provide guidelines for visitor use and the development of facilities for visitor enjoyment and administration.

Also, the "Land Protection Plan" is included as a component of this planning effort (appendix B). The "Land Protection Plan" addresses the management or acquisition strategy for nonfederal lands and interests that occur within the boundary of the Park. Approximately 52,000 acres of the Park are in nonfederal ownership (private lands, state lands, patented mining claims).

The National Parks and Recreation Act of 1978 (P. L. 95-625) requires the National Park Service to prepare general management plans for each park unit. The act specifies that the general management plan should address measures for the preservation of the area's resources, the types and general intensities of development, visitor carrying capacities, and potential boundary modifications. This proposed general management plan addresses these issues, except for boundary modifications. During the prolonged debate over the expansion of Death Valley National Park the boundaries were subjected to considerable scrutiny and public debate. The National Park Service believes a comprehensive examination of potential boundary modifications at this time is unwarranted.

BRIEF DESCRIPTION OF DEATH VALLEY NATIONAL PARK

Death Valley National Monument was established by presidential proclamation under the Antiquities Act of 1906, on February 11, 1933 (Proclamation No. 2028). The original monument contained approximately 1,601,800 acres. Supplementary proclamations in March 1937 (No. 2228) and January 1952 (No. 2961) increased the monument's acreage to 2,067,793 acres. The monument was subsequently enlarged and changed to Death Valley National Park by Congressional action on October 31, 1994, with the passage of the California Desert Protection Act (16 U.S.C. 410aaa-83). Approximately 1.3 million acres of new lands were added, bringing the total acreage of the new Park to about 3,396,192 acres. Nearly 95% of the Park was designated as wilderness by that same act. Death Valley National Park is the largest national park unit in the conterminous 48 states. The vast majority of its lands are located in the California counties of Inyo and San Bernardino, but a small portion of the Park is located in the Nevada counties of Nye and Esmeralda. California State Highway 190 crosses the Park east to west, and Highway 95 parallels the Park north to south on the Park's eastern boundary .

Death Valley National Park is the lowest point in the Western Hemisphere and one of the hottest places in the world. It is also a vast geological museum, containing examples of most of the earth's geologic eras. Here, plant and animal species, some of which occur nowhere else in the world, have adapted to the harsh desert environment. Humans have adjusted to these severe conditions, as evidenced by extensive

archeological sites; historical sites related to successive waves of prospectors; miners, and homesteaders; present-day residences of Native Americans; and the current resort developments and active mines.

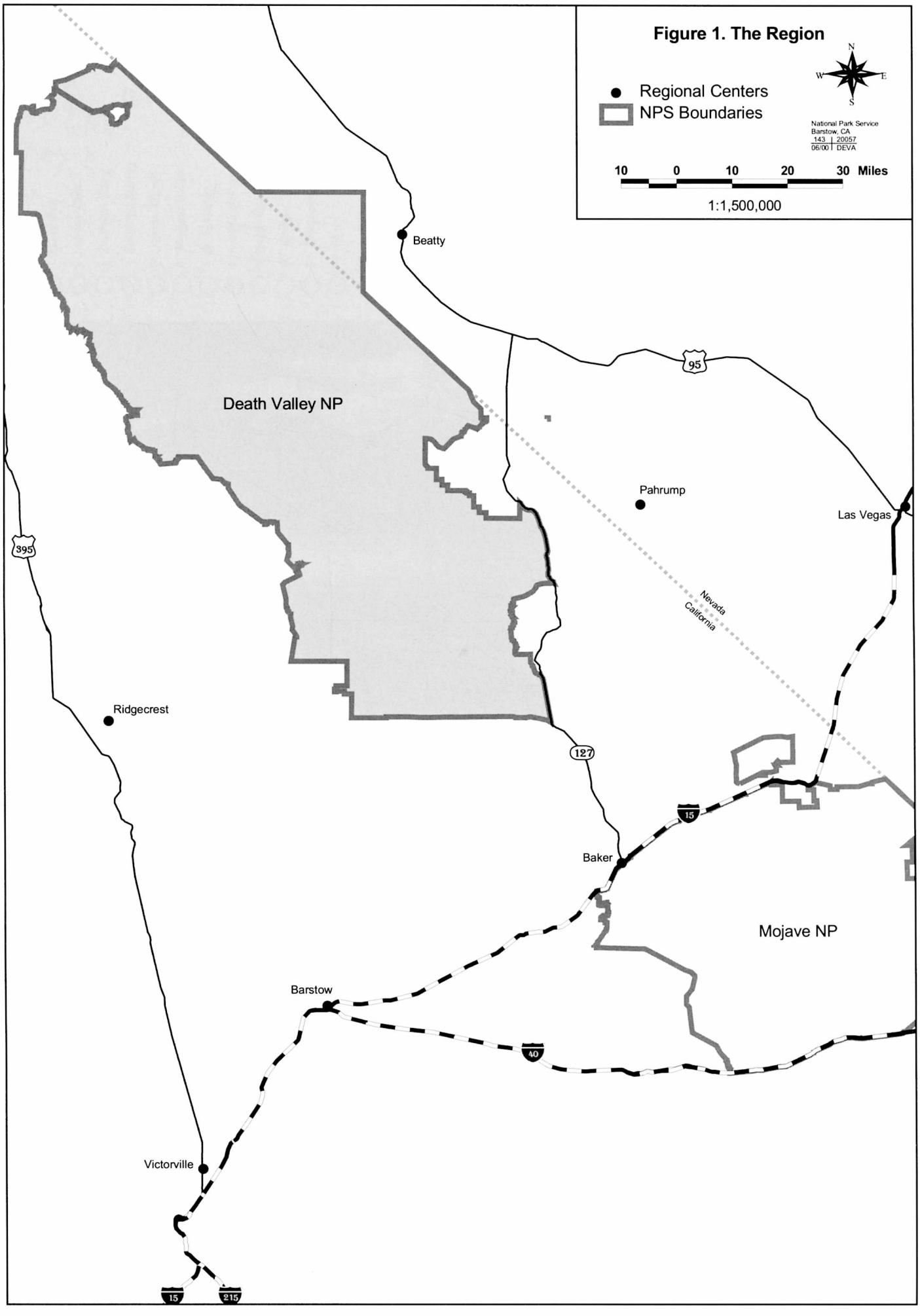
Perhaps the Park's greatest assets today are the clear air , vast open spaces that stretch toward distant horizons, and the overwhelming silence. Approximately 1.2 million people a year (1999 numbers) come to Death Valley to experience the stark and lonely vastness of the valley; the panorama of rugged canyons and mountains; the pleasures of the dry, moderate winter climate; the challenge of the hot, arid summer; the relief of the cooler mountains; and the reminders of frontier and Native American ways of life.

Death Valley National Park includes all of Death Valley, a 156-mile-long north/south-trending trough that formed between two major block-faulted mountain ranges: the Amargosa Range on the east and the Panamint Range on the west. Telescope Peak, the highest peak in the Park and in the Panamint Mountains, rises 11,049 feet above sea level and lies only 15 miles from the lowest point in the United States in the Badwater Basin salt pan, 282 feet below sea level. The California Desert Protection Act added most of the Saline, Eureka, northern Panamint, and Greenwater valleys to the Park.

The diversity of Death Valley's plant communities result partly from the region's location in the Mojave Desert, a zone of tension and overlap between the Great Basin Desert to the north and the Sonoran Desert to the south (Kearney and Peebles 1960). This location, combined with the great relief found within the Park, from 282 feet below sea level to 11,049 feet above sea level, supports vegetation typical of three biotic life zones: the lower Sonoran, the Canadian, and the Arctic/Alpine in portions of the Panamint Range (Jepson 1923; Storer and Usinger 1968). Based on Munz and Keck (1968) classifications, seven plant communities can be categorized within these life zones, each characterized by dominant vegetation and representative of three vegetation types: scrub, desert woodland, and coniferous forest. Microhabitats further subdivide some communities into zones, especially on the valley floor.

Death Valley National Park and the adjacent desert support a variety of wildlife species, including 51 species of native mammals, 307 species of birds, 36 species of reptiles, three species of amphibians, and five species and one subspecies of native fishes (Hansen 1972 and 1973; Landye 1973). Small mammals are more numerous than large mammals, such as desert bighorn, coyote, bobcat, mountain lion, and mule deer. Mule deer are present in the pinyon/juniper associations of the Grapevine, Cottonwood, and Panamint mountains.

Many historic properties exist within the Park. Most of those meeting the national register criteria for significance and integrity have been listed on the National Register of Historic Places. Most of the sites contain structures or other tangible remains of the activities that took place there. Death Valley National Park is unique because it displays a continuum of mining activities from at least the 1860s to the present day. Many historic mining resources are of particular significance either because similar resources are not found elsewhere within the national park system or because they are in a better state of preservation than examples found elsewhere.


Figure 1. The Region
Regional Centers
NPS Boundaries
N
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S
National Park Service
Barstow, CA
143 | 20057
06/00 | DEVA
10 0 10 20 30 Miles
1:1,500,000
Beatty
Death Valley NP
95
Pahrump
Las Vegas
395
Nevada
California
Ridgecrest
127
15
Baker
Mojave NP
Barstow
40
Victorville
15
215



Salt pool at Badwater

Figure 2. Death Valley National Park, Place Names

Key Features

1 Badwater
2 Dantes View
3 Zabriskie Point
4 Saratoga Spring
5 Dumont Dunes
6 Wingate Wash
7 Butte Valley
8 Harisburg Flat
9 Nemo Canyon
10 Skidoo
11 Emigrant
12 Ryan
13 Cottonball Basin
14 Keane Wonder Mine
15 Chloride City
16 Sand Dunes
17 Mesquite Flat
18 Grapevine
19 Darwin Falls
20 The Dunes
21 Racetrack Valley
22 Saline Warm Springs
23 Eureka Dunes
24 Whippoorwill Flat

Military Units
Park Boundary

5 0 5 10 15 Miles

1:750,000

N
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National Park Service
Barstow, CA
143 | 20056
06/00 I DEVA

Nevada
California
Eureka Valley
Last Chance Range
Big Pine Road
Ubehebe Crater
Scotty's Castle
Saline Range
Grapevine Mountains
Bullfrog Hills
Beatty
Inyo Mountains
Saline Valley Road
Saline Valley
Cottonwood Mountains
Daylight Pass
Amargosa Desert
Lone Pine
Nelson Range
Lee Flat
Hunter Mountain
Stovepipe Wells
Tucki Mountain
Funeral Mountains
Towne Pass
Furnace Creek
Devils Hole
Panamint Springs
Badwater Road
Death Valley Jct.
Argus Range
Telescope Peak
Panamint Range
Death Valley
Black Mountains
Greenwater Range
Greenwater Valley
Panamint Valley
China Lake
Jubilee Pass
Salsberry Pass
Shoshone
Tecopa
Slate Range
Trona
Owlshead Mountains
Ibex Hills
Saddle Peak Hill
China Lake
Ridgecrest
Fort Irwin
Avawatz Mountain

MISSION

Death Valley National Park Mission: Death Valley National Park dedicates itself to protecting significant desert features that provide world class scenic, scientific, and educational opportunities for visitors and academics to explore and study.

NPS Mission: The National Park Service mission was clearly stated in its 1916 Organic Act:

> "... the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

PURPOSE AND SIGNIFICANCE

An essential part of the planning process is understanding the purpose and significance of the land for which the plan is being prepared. In the case of federal lands, Congress provides the purpose(s) of the unit and the mission of the agency charged with managing the area. Significance is usually determined by familiarity with the natural and cultural resources of the region, although some significant elements are often recognized in the enabling legislation.

DEATH VALLEY NATIONAL PARK PURPOSE

- Preserve the unrivaled scenic, geologic, and natural resources of these unique natural landscapes, while perpetuating significant and diverse ecosystems of the California desert in their natural state. Ensure the maximum protection of wilderness values provided by law.

- Preserve the cultural resources of the California desert associated with prehistoric, historic and contemporary Native American culture, patterns of western exploration, settlement and mining endeavors.

- Provide opportunities for compatible public outdoor recreation and promote the public's understanding and appreciation of the California desert by interpreting the natural and cultural resources.

- Retain and enhance opportunities for scientific research in undisturbed ecosystems.

DEATH VALLEY NATIONAL PARK SIGNIFICANCE

- Death Valley National Park contains the lowest point in North America at 282 feet below sea level. The valley floor receives the least precipitation in the United States (average 1.84 inches per year) and is the site of the nation's highest and the world's second highest recorded temperature (134 degrees Fahrenheit).

- Death Valley National Park is world renowned for its exposed, complex and diverse geology and tectonics, and for its unusual geologic features, providing a natural geologic museum that represents a substantial portion of the earth's history.

- Death Valley has been the continuous home of Native Americans, from prehistoric cultures to the present day Timbisha Shoshone Tribe.

- The extremely colorful, complex, and highly visible geology and steep, rugged mountains and canyons provide some of the most dramatic visual landscapes in the United States.

- Death Valley National Park contains one of the nation's most diverse and significant fossil records and most continuous volcanic histories.

- Death Valley National Park contains five major sand dune systems representing all types of dune structures, making it one of the only places on earth where this variety of dune types occurs in such close proximity. It also contains the highest dunes in California — Eureka Sand Dunes.

- Death Valley National Park is one of the largest expanses of protected warm desert in the world. Ninety-five percent of the Park is designated wilderness, providing unique opportunities for quiet, solitude, and primitive adventure in an extreme desert ecosystem.

- Contrary to many visitors' first impression, Death Valley National Park's natural resources are extremely diverse, containing a large variety of plant species and community types. The area preserves large expanses of creosote bush valleys and other vegetation typical of the Mojave Desert. Extreme conditions and isolation provide habitat for an unusually high number of plant and animal species that are highly adapted to these conditions.

- Death Valley National Park has an extensive and well-preserved mining history representing over 100 years of mining technology.

- Death Valley National Park contains an unusually high number of well-preserved archeological sites, including rock art and alignments.

- Scotty's Castle, with its architectural style, quality, and priceless collection of antiques and art objects, built in a remote, isolated desert location in the early 1900s, is an icon that has immense public appeal.

PRIMARY INTERPRETIVE THEMES

The primary Park stories or interpretive themes are overview statements that provide the basis for communicating the purpose and significance of the Park and provide the elements that the Park believes each visitor should develop an understanding of during their visit. Interpretation is a process of education designed to stimulate curiosity and convey messages to the visiting public. These themes would be developed during the preparation of a comprehensive interpretive plan for the Park and would guide the development of interpretive materials (signs, brochures, walks, talks, etc.).

MANAGEMENT OBJECTIVES

NATURAL AND CULTURAL RESOURCES

Maintain, preserve, interpret, and perpetuate the aesthetic setting, and the natural and cultural resources, of Death Valley National Park in such as manner as to:

- Protect the significant natural and cultural resources and values of the Park, including geologic features, and to foster an improved understanding of natural processes through monitoring efforts and scientific research.

- Perpetuate native plants and animal life for their essential roles in the natural ecosystem.
- Strive to reduce or eliminate alien species to ensure long-term survival of the native ecosystem.
- Ensure the perpetuation of rare and endangered plants and animals and those species endemic (specific) to Death Valley National Park.
- Perpetuate and increase water resource science and conservation.
- Perpetuate the Devils Hole pupfish in the detached Devils Hole section of the Park.
- Eliminate existing and prohibit new occurrences of all activities inconsistent with the protection of the natural ecosystem, except in the Park's developed areas, as noted in the Park's management plans.
- Restore to natural appearance, inasmuch as feasible, the land surfaces disturbed by man, recognizing that significant cultural values must be preserved.
- Prohibit or minimize the adverse effects of mining and mineral development that conflict with resource preservation and public appreciation of natural and cultural values.
- Provide for the reclamation of mining areas and the eventual completion or phaseout of mining.
- Maintain air quality monitoring to facilitate implementation of means to prevent deterioration of air quality and visibility.
- Continue to pursue redesignation of Death Valley National Park from a class II floor area to a class I air quality area.
- Prevent, eliminate, or reduce artificial lighting and noise in order to preserve the opportunity for visitors to experience the night sky and stillness of the desert.
- Perpetuate unimpaired the Park's cultural and archeological resources, protecting them from vandalism, unauthorized excavation, collection, or appropriation.
- Protect the Park's collections of natural and cultural objects from deterioration, natural disaster, misuse, and loss.
- Operate and manage Scotty's Castle, its grounds, and environs to recreate the atmosphere of the period of its construction and occupation by Walter Scott and Mr. and Mrs. Albert Johnson.
- Support research programs pertaining to natural and cultural resources and to social sciences, consistent with the Park's resource protection and visitor services mission.

WILDERNESS VALUES

- Manage and protect wilderness values and resources so as to ensure public understanding and appreciation of the vast wilderness assets of the Park.
- Strive to restore disturbed areas in wilderness.

VISITOR USE

- Provide the visitor to Death Valley National Park with the opportunity to discover, explore, and understand the natural and cultural resources of the Park.

INTERPRETIVE SERVICES

- Offer a variety of quality informational services that differ in format, media, and intensity of presentation, and that are sensitive to the special needs, interests, and cultural backgrounds of a diverse mix of visitors.

- Offer visitors an understanding of Park values and resources, and include as an integral part of interpretive materials major Park management and resource protection challenges.

- Enhance the visitor understanding of Native American cultures.

- Maximize opportunities for visitor enjoyment and appreciation of interpretive services, facilities, and resources, consistent with other Park management objectives.

- Provide information on the surrounding area, including appropriate safety awareness for visitor use of rugged, isolated Death Valley and its environs.

- Maintain a library and a study collection operation that is up-to-date and reflects current preservation policies.

- Maximize services (talks, facilities) for educational and other groups that enrich the Park's database and enhance their understanding and appreciation of Death Valley.

RECREATIONAL ACTIVITIES

- Permit access to all areas of the Park, consistent with resource protection objectives and within optimum carrying capacities/use limits.

- Offer a variety of recreational opportunities that are sensitive to the range of visitor interests, physical capabilities, and time and financial limitations.

- Provide an opportunity for exploring the backcountry, experiencing the wildness of the high Panamint, Grapevine, Cottonwood, and Funeral ranges, as well as camping and sight-seeing in a setting of climatic relief from the valley floor; provide a wilderness experience for those who desire it, in balance with the limitation of the fragile resource.

- Provide access to points of interest within the Park by a variety of means, including automobiles, tour buses, four-wheel-drive vehicles, horses, hiking and facilities for private aircraft.

COMMERCIAL SERVICES

- Maintain, preserve, and perpetuate an aesthetic setting for commercial services and community support services, with Furnace Creek being retained as the focal point, and provide secondary year-round commercial facilities and services at Scotty's Castle, Stovepipe Wells , and Panamint Springs.

- Perpetuate the use of historic structures and facilities for commercial purposes, in a manner consistent with their historical significance.

FACILITIES AND SERVICES

- Compatible with resource protection goals and carrying capacity limits, provide facilities and services to accommodate visitor needs.
- Maximize use of existing facilities and accommodate necessary expansion of visitor facilities and services; build new facilities or expand existing facilities only when a clearly demonstrated, continuing need exists, ensuring that environmental impacts are minimized.
- Provide for a variety of overnight visitor accommodations (including lodging and camping) and food services, while ensuring the preservation of natural and cultural resources.
- Encourage appropriate development of overnight facilities and related services by private inholdings and private enterprise outside the Park.
- Ensure that authorized commercial uses in Death Valley National Park are compatible with the preservation and safe enjoyment of the Park's resources.
- Improve water handling facilities to assure appropriate conservation.
- Ensure that the types and prices of commercial services provided will accommodate a range of Park visitors and needs.
- Through landscaping and design, screen concessioner and National Park Service operations and maintenance areas from visitor areas.
- Develop utilities and telephone service only as needed; investigate alternative energy systems, especially solar and water, to minimize energy consumption and environmental impacts.
- Provide seasonal levels of commercial services that are responsive to visitor use patterns.

OPERATIONS

- Maintain the public use and administrative support facilities and equipment in a manner that will provide visitors safe and enjoyable experiences and prolong the life of the equipment and facilities.
- Provide for visitor and employee safety through an ongoing safety program that recognizes the hazards of heat and flash floods, as well as the physical hazards of mine areas.
- Provide employees with a safe and healthy work environment and with training to work safely.
- Upgrade and replace directional/informational signs so as to better aid visitors, recognizing that signs should fit into a parklike environment.
- Manage the maintenance program in a cost-effective manner; supervise proper use of manpower, equipment, supplies, and money.
- Promote strategies for management efficiency through revenue enhancement (fee collection), private sector support, volunteerism, improved concessioner maintenance, and productivity enrichment (contracted services).

- Provide timely service to Park employees in personnel management, procurement, finance, word-processing, mail, and dispatch/telephone operations, thereby improving morale and allowing Park staff to better use their time in meeting visitor and resource needs.

- Provide for adequate housing, employee services, and recreational opportunities for employees.

REGIONAL PLANNING AND COOPERATION

- Cooperate with other federal, state, and local agencies and private interests in the development of plans, facilities, and programs in order to provide more effective service to the public.

- Work with California (Inyo and San Bernardino counties) and Nevada (Nye and Esmeralda counties) to obtain concurrent jurisdiction status for the Park.

- Communicate to visitors and scientists the concept of the *Man and the Biosphere* program, and cooperate with Joshua Tree National Park, Anza-Borrego Desert State Park, and the University of California's Boyd Deep Canyon, which together with Death Valley comprise the Mojave and Colorado Deserts Biosphere Reserve.

- Encourage the use of Death Valley's resources as a center of scientific research interest, consistent with the perpetuation of native natural processes and the preservation of extant cultural resources.

- Work with the state of Nevada and various research institutions in the understanding and management of the Death Valley aquifer.

- Cooperate with the state of California to provide for road maintenance and patrol, with Inyo County for health, educational, library, and law enforcement services, and with the U.S. Postal Service; ensure that all these services benefit employees, their families, and visitors.

- Maintain coordination and cooperation with California Department of Fish and Game in relation to fish and wildlife issues.

- Encourage the perpetuation of Death Valley's Native American cultural heritage.

CARRYING CAPACITY

Park managers are often faced with decisions about how much use of a particular area is appropriate, given the need to protect resources. Decisions regarding buildings, such as museums and historic structures, are usually dictated by law and the physical capacity of the space to contain people. Visitors face these limits everywhere they go and they are widely accepted. Similar decisions regarding natural spaces are not as easily derived, nor readily accepted. Most people understand that there is a need to limit the number of people that can float the Colorado River at the same time, in order to preserve the experience. However, determining how many people can use a particular area of the Park without impacting resources or other visitors experience is often more difficult.

A widely accepted definition of carrying capacity is:

> *"the character of use that can be supported over a specific time by an area developed at a certain level without causing excessive damage to either the physical environment or the experience of the visitor."*

There are three principle components that relate to determining the carrying capacity for a national park:

- The ecological or physical capabilities of the natural and cultural resources to sustain certain levels of visitor use without reaching unacceptable levels of damage. Each landscape may have varying abilities to absorb different kinds of and levels of visitor use before unacceptable levels of impact occur.

- The sociological carrying capacity is the ability of visitors to enjoy and appreciate these resources without interference by other visitors. Determining social carrying capacity can be one of the most difficult parts of the three components. Identifying numbers relating to visitation in an area is not a valid determinant of a quality visitor experience. Other factors such as visitor behavior, preconceived expectations, and social norms of the dominant user group can also effect visitor enjoyment.

- The type and amount of NPS management that has been, or can be applied to the activity to mitigate unwanted impacts is also a factor. The third component relates to the management of Park roads, parking lots, buildings, trails, and visitor information. For example, providing interpretive services is an effective way to instill in the visitor an understanding and appreciation for Park resources. Such understanding helps implement carrying capacity for a particular area. Limiting parking in certain areas can effectively limit visitation.

The implementation of recommendations as called for in this plan will increase the level of protection for fragile or sensitive resources. Until future implementation plans are developed, the National Park Service should manage visitor activities in a way that leans toward resource protection. Preservation of sensitive species and their habitats is a priority and sensitive population resource degradation due to public use or other activities would not be allowed. Aggressive and appropriate action would be taken to protect these habitats until the degraded habitat had been restored and appropriate long term protection for the species had been put in place.

General management plans provide NPS managers with management direction on a broad, prescriptive level. Management objectives for carrying capacity are thus written as narrative statements. These statements define the desired future visitor experience and resource conditions in qualitative terms such as "sense of seclusion," or "low degree of tolerance for resource degradation." The qualitative descriptors that have been identified as "desired visitor experience and resource conditions" would be refined and translated into quantitative standards during future implementation planning. As previously mentioned, indicators and standards of quality for both the physical and social environments would be developed within future implementation plans. These products would be quantifiable and measurable aspects of the carrying capacity process.

DESIRED FUTURE CONDITIONS

Desired future conditions for natural and cultural resources and the visitor experiences are described below. The descriptions are qualitative in nature and can be translated into quantitative standards over time during the implementation of this plan. Some descriptions could be applied to broad areas such as wilderness, while others apply to smaller areas such as road corridors and points of development. These descriptions serve as guides for managing the land and facilities to achieve desired carrying capacities.

Natural Areas

An informal, self-guiding learning experience is provided for visitors in these areas. People are encouraged to get out of their vehicles and walk to features. The pace is slower with low to moderate levels of noise. Visitors typically focus on specific resources with few visual intrusions. Visitors experience a sense of learning through onsite interpretation or other means.

The length of stay at each site is relatively short in comparison to the time the visitor spends in the Park. There is a moderate amount of social crowding and moderate social interaction at points of interest and along dead-end trails. Guided ranger walks are occasionally provided for visitors at some locations. Development is limited to items such as low interpretive panels, small directional signs, and hardened dirt paths. Fences and boardwalks are used as a last resort to protect resources if other management efforts do not work. The tolerance for resource degradation is low to moderate, depending upon the sensitivity of the resource to impacts by use. The degree of onsite visitor and resource management is moderate and increases or decreases with visitation levels.

Wilderness

Visitors in this landscape experience a primeval environment largely untrammeled by humans, where the land retains its primeval character and influence, without permanent improvements or human habitation, but may contain features of scientific, educational, scenic or historic value. Elements of modern human occupation are not appropriate unless they meet the criteria of the Wilderness Act. Some sections of wilderness within the Park may have remnants of human occupation, but these features are considered a part of the history and scenery to be explored. A high degree of physical exertion may be required to hike or ride horseback to this area. A minimal amount of hiking trails may be present, often requiring a person to travel cross-country to get to a desired destination. Abandoned roads may be used as routes of travel. Opportunities for independence, closeness to nature, tranquility, and the application of outdoor skills are high. Opportunities for social interaction with other visitors are low, as is the probability of encountering NPS employees. Likewise, evidence of other visitor impacts is minimal.

The landscape offers a high degree of challenge and adventure for visitors. The visual quality of the landscape contributes significantly to the visitor experience and needs to be protected. The tolerance for resource degradation is low, with the exception of designated trail corridors, where a slightly higher level of degradation is allowed within a few feet of the trail and at points where camping occurs. A minimal amount of resource and visitor management is present. Offsite visitor management (provision of information) is low to moderate.

Historic Preservation Areas

Historic preservation areas offer visitors a chance to gain a sense of the past without compromising the integrity of the resource. Often there are opportunities to learn by vicariously experiencing the emotions and thoughts of those who lived in the past. The experience is often a visual one, enhanced by smells, sounds, and a sense of physical space. Interpretive information adds color and meaning to the experience.

The degree of tolerance for resource degradation is low for historic resources. The chance of seeing other visitors and having social interaction is potentially high, depending on the degree of public access and visitor interest. The opportunity for contact with NPS personnel is high where ranger-led tours are offered. Visitor behavior is managed to protect the character of each place. NPS onsite management is high at sites with high visitation and impact sensitivity. Paved walks, fences, and interpretive panels are used as needed to accommodate public access and interest. If interest is high, improvements may be needed to allow visitors to experience these resources while protecting them from visitor use impacts. Improvements must not distract from the significance of each location. Some features are convenient and easily accessible with little need for visitors to exert themselves, apply outdoor skills, or make a long time commitment to see the area. Some features are located at remote locations and require more effort and skill to experience. Adventure is often a part of the visitor experience at these places. The way in which people currently gain access to these locations remains unchanged since this experience contributes to resource protection and its appreciation. Changes in access should only be made if there is strong justification to do so. Remote locations should provide a primitive setting with opportunities for solitude,

exploration, and learning, with minimal amounts of human intervention such as signsor interpretive panels.

Visitor Facilities

The visitor experience in these areas is heavily influenced by structures and other fabricated features, and they are part of the visitor experience. The pace is varied with opportunities to walk and drive. The site often is noisy with vehicles and people nearby. Visitors have opportunities to learn about Park resources and receive many services from facilities. Visual distractions from other visitors and their vehicles are common and expected. Buildings and other facilities are predominant, but where exceptional natural elements or cultural elements are present, they should be made part of the visitor experience. These constructed features are coordinated by design to reduce visual contrast with the natural or cultural setting. Although these are developed areas, they should still offer a contrast from urban life and a chance to relax and enjoy the outdoors.

Most facilities are convenient and easily accessible by the public. Many areas provide a strong opportunity for social interaction. Encounters with NPS staff are frequent. The tolerance for social crowding is high but there are opportunities to learn and experience a change in pace from city life. Most facilities are accessible to visitors with disabilities. Resource impacts at visitor facilities are as low as possible and occur only when there is no practicable alternative. Visitors and facilities are intensively managed for resource protection, visitor management, and safety (that is, there may be fences, law enforcement may be more intensive, and visitor activities may be monitored or restricted).

Paved and Graded Roads

Paved and graded roads are the dominant experience for most Park visitors. Visitors use these narrow corridors and roadside pullouts for touring, enjoying scenic overlooks, and gaining access to natural and cultural features. While traveling, visitors may read about and understand the features they are seeing. Bicycle travel is allowed, but motorized vehicles are more common. Viewing the scenery is very important, but the views are often of distant landscapes. Vistas are protected. First-time visitors may have a sense of exploration, but very little physical exertion is needed, outdoor skills are not necessary. Visitors may spend a long time in this zone. The probability of encountering other visitors is very high, although chances for social interaction are low except at roadside pullouts. The opportunity for direct contact with NPS staff is low unless emergency situations arise.

A moderate to high level of NPS management (highway signs, visitor protection) is needed to provide visitors with a safe and enjoyable experience. Because maintenance work and driving off roads cause dirt roads to grow wider, it is necessary to specify maximum road widths and approved pullouts. Roads are limited to specified widths unless where strong justification exists. Resources can be modified for essential visitors and administrative operational needs. The tolerance for resource degradation in these corridors is moderate. Allowable impacts are restricted to a short distance from roads and pullouts.

Unmaintained Dirt and Four-Wheel Drive Roads

Unmaintained dirt roads provide a unique experience for drivers and other users such as mountain bike riders, equestrians, and hikers. The predominant use is by visitors in vehicles driving to enjoy the scenery, or to go to historic mining sites, or to a specific feature. Some visitors experience a strong sense of exploration, challenge, and adventure. Travel speeds are slow to moderate, with the potential of frequent stops. Many of these roads give visitors a sense of escape from urban life. The areas through which these roads pass are predominantly natural, but there is some evidence of people having used the area in the past and present. Increased impacts from human use are prevented to protect the existing qualities of the

landscape. Support features such as small directional signs or interpretive panels are present but infrequently seen and inconspicuous in character.

Visitors may need to extend themselves, use outdoor skills, and make a long time commitment. Some roads within the Park have rough conditions that often require specific driving skills and more time to complete the route. Opportunities for challenge and adventure are available on some 2-wheel drive roads that require high clearance vehicles. Opportunities for social interaction are low, unless people are traveling in a group. A moderate level of management is provided on heavily used roads to protect resources and visitors. Many people who use these roads do not wish to see many other vehicles.

Resource modification is evident, but where possible, should harmonize with the natural environment. The Park's tolerance for resource degradation in this zone is low except that limited signs , road surfaces and shoulders, pullouts, and camping areas are permitted. It is recognized that some 4-wheel drive roads have a number of short sections that have been widened by natural occurrences such as washouts.

PLANNING ISSUES AND MANAGEMENT CONCERNS

NPS PLANNING PROCESS

The NPS planning process involves several levels of planning that become increasingly more detailed and complementary. General management plans represent the first phase of a tiered planning system for parks and provide the overall management framework under which other more detailed activity plans are developed. General management plans are broad in scope rather than specific, and focus on purposes of the unit, its significant attributes, its mission in relation to the overall mission of the agency, activities that are appropriate within these constraints, and what resource conditions and visitor experiences should exist there. They also provide guidelines for visitor use and development of facilities for visitor enjoyment and administration. Decisions about site-specific actions are deferred to implementation planning when more detailed site-specific analysis would be done.

ISSUE ANALYSIS AND DEVELOPMENT OF ALTERNATIVES

In the early stages of this planning process, the planning team developed a list of issues from its own research and from input received from the Bureau of Land Management, National Park Service, and U.S. Fish and Wildlife Service, as well as from state, local, and other federal agencies and from the public through a series of public meetings held in September of 1995. An agency meeting was held in Barstow, California, and the public meetings were held in Baker, Barstow, Furnace Creek, Independence, Lone Pine, Needles, Pasadena, San Bernardino, and Ridgecrest, California, and in Las Vegas, Nevada. A summary of the scoping process and issues developed from the public and from intra-agency and interagency scoping meetings is in the "Consultation and Coordination" section.

The alternatives presented within this document address the options for dealing with the issues and information gathered during the scoping process. The planning team compiled and reviewed information discussed at the scoping meetings and determined which issues were compatible with various laws, the NPS mission, and the mission and purpose and significance of Death Valley National Park and were appropriate to be analyzed within this document. The process used to evaluate the scoping information primarily involved sorting the issues into the following five categories:

1. Items that were statements or background information and not issues requiring analysis (for example, "the National Park Service might need money or volunteers to maintain trails" and "parts of the desert are rich in minerals").
2. Issues that were operational and not suitable for discussion in a long term planning document (for example, "the staff should be kept up-to-date on training).
3. Issues not within the Park Service's jurisdiction (for example, military aircraft should be banned from NPS units).
4. Issues considered but not suitable for analysis (see below sub-sections "Planning Constraints and Mandates" and "Actions Considered as Alternatives but Rejected").
5. Issues appropriate for this planning effort's analysis and discussion. These last issues are listed below and described in detail in the "Alternatives" section.

Once the planning team identified those issues that could be addressed, the team took the following steps:

- became familiar with the planning area and its resources through the literature and tours of the planning area

- began the development of a Geographic Information System (GIS) database to be used in mapping and analyzing various factors
- resolved and developed the formats for the documents
- developed the NPS units' significance and purposes statements
- held open houses for BLM, Death Valley, and Mojave staff to update them on the planning progress
- met with local government representatives
- met with Timbisha Shoshone, Ft. Mohave, Chemehuevi, and San Manuel tribal members
- met numerous times with the Death Valley National Park's Advisory Commission, Mojave National Preserve's Advisory Commission, and the BLM Advisory Council
- developed the scope and direction for a contracted socioeconomic analysis

With the list of the issues identified, the planning staff developed conceptual alternatives. These concepts were sent to the public in a March 1997 newsletter. In April 1997 the planning staff held public workshops at the same locations as described in the above paragraph (with Bishop, California substituted for Independence). Participants at these workshops discussed the proposed alternatives with the planning team. Following public input, an agency meeting was held in Barstow in May 1997 to gather staff input. This input was used in preparation of this *Revised Draft Environmental Impact Statement / General Management Plan* for Death Valley National Park and the *Revised Draft Environmental Impact Statement / General Management Plan* for Mojave National Preserve. The Bureau of Land Management used the previously mentioned input in preparing its draft *California Desert Conservation Area Plan Amendment / Draft Environmental Impact Statement*.

After public review of the *1998 Draft Environmental Impact Statement*, the *Revised Draft Environmental Impact Statement* was prepared. The final environmental impact statement will be prepared after review of the revised draft. A record of decision will be prepared thirty days after release of the final environmental impact statement announcing the alternative chosen as the agency action. The National Park Service will also prepare stand-alone general management plans and land protection plans that are summary documents of the management direction, uncluttered by alternatives, impacts, and other information required as part of the National Environmental Policy Act process.

ISSUES IDENTIFIED DURING PUBLIC SCOPING

The following list of issues was derived from a series of public meetings throughout the planning area in September 1995 and from written comments received. The list is planning area-wide and not specific to Death Valley.

Visitor Use and Administration

- The public needs maps showing access, wilderness, and land status.
- Careful consideration should be given to visitor service locations, including analysis of the use of private facilities outside NPS boundaries to provide certain visitor services. An evaluation of volunteer use should be included in the plan.
- Anticipate an increase in the Southern California and Las Vegas populations and prepare for increased use of the area while still providing a quality experience for visitors.
- Address policy on pets throughout planning area.

Interpretation

- Identify the anticipated visitors (including foreign tourists) and identify their needs and expectations while visiting the planning area.
- The need for interpretation of significant resources and tours should be evaluated in the plan.

Public Safety, Dumps, and Utility Corridors

- Evaluate adequacy of communications.
- Address the impacts and regulation of low flying aircraft.
- The scope of law enforcement, fire management and emergency medical services needs to be addressed.
- Examine the Department of Energy's nuclear waste transportation corridor plans and the Yucca Mountain Nuclear Waste Disposal site. (See description in "Relationship to Other Planning Efforts" section).
- Evaluate a closed dump in Death Valley National Park for possible effects on existing and planned activities.
- Describe plans for future utility corridors within the planning area. If new corridors are planned, then compliance, monitoring and reduction of impacts to adjacent habitat need to be evaluated and discussed.
- Evaluate adequacy of public sanitation facilities.
- Address user fees and discrepancy between fees and costs of public safety activities such as search and rescue and Medivac services.

Socioeconomics

- A socioeconomic study should be conducted. It should, at a minimum, examine development activities within and adjacent to the planning area; examine effects of existing and predicted populations, expected economic benefits and costs; and provide an updated visitor profile.
- Evaluate potential concession operations, including jeep tours that could provide access to many people and a concession/permit system permitting access on closed trails.
- Examine possible land exchanges to consolidate federal lands and recommend boundary adjustments.
- Be cognizant of inholders' concerns that the National Park Service 's management policies and potential increases in visitation will affect inholders' property and lifestyles.
- Evaluate visible light pollution effects on the night sky.
- Structure plan so that phases can be implemented under different funding levels.
- Recommend a system for approving, supervising, and coordinating research activities in the planning area.
- Ensure that each agency's management practices remain faithful to their mission statements.
- The needs of foreign tourists should be understood and accommodated in the planning area.

Mining

- Address impacts from operating and abandoned mines in and near the planning area boundaries, reclamation and revegetation plans, and adequacy of existing mitigation measures.
- Describe how mining plans on valid existing mining claims are processed, with examples of previously approved NPS mining permits.

Springs, Water Rights, and Air Quality

- Restoration of numerous springs is needed to make them suitable for wildlife.
- Consider the possible effects of BLM and NPS activities and regional developments (e.g. Amargosa Valley and Yucca Mountain) on water quality and quantity and vegetation.
- Address Department of the Interior leadership needed in resolving water issues, including adjudication.
- Address water resource issues (e.g. potential conflict of federal management objectives for Ash Meadows National Wildlife Refuge)
- Address deteriorating air quality within the planning area.

Access

- The plan needs to address the issue of access related to valid existing rights, permitted uses, general recreation and maintenance of facilities such as range improvements, wildlife guzzlers, communications sites, private lands, etc.
- Consider the deletion, addition, maintenance, paving, and overuse of roads throughout the planning area.
- Address possible wilderness boundary modifications to allow vehicle passage through closed areas.
- Address the plans for general aviation and airports in the planning area.
- The Death Valley National Park's west side should have more access roads .

Military

- Address concerns about low level military aircraft overflights and fuel dumping by aircraft.
- Discuss impacts of Fort Irwin's proposed expansion on the planning area.

Wilderness, Camping, Non-motorized Trails, and Recreation

- Examine wilderness boundaries and access for possible adjustments. Address wilderness management guidelines and regulations regarding the maintenance and installation of wildlife guzzlers in wilderness areas.
- Nonwilderness areas should remain open for multiple use and alternative areas should be provided for recreation opportunities no longer permitted in wilderness areas.
- Establish firewood and campfire policies.
- Look at campground location, numbers and the policies on group, campers with special needs, backcountry and roadside camping.
- Address the management policies and clothing optional policy at the Saline Valley Warm Springs (numerous written comments received supporting existing policy).
- Address the adequacy of trailhead parking (especially for wilderness areas), the number and length of trails, the maintenance of trails, and the need for single or multiple trails for bicycles, hikers and equestrians.
- Address various recreation opportunities including hang-gliding, trail bicycles, and rockhounding.
- Consider establishing carrying capacities and a multi-agency permitting system for heavily used areas.

Biological Resources, Hunting, and Grazing

- Address the NPS policy regarding guzzlers, recognizing the countless hours of volunteer work to install and maintain them, but also the implications of maintaining populations of wildlife artificially.
- Address possible decline of Death Valley's bighorn sheep and possibility that increased tourism will cause more adverse impacts to sheep and tortoise.
- Examine wild horse and burro management within planning area and each of its subunits and determine appropriate management policies for each area.
- Evaluate resource issue conflicts between grazing and wildlife habitat.
- Address grazing levels and long-term grazing management.
- Recognize that dolomite formations host many endemic plants.
- Address the recovery objectives for the desert tortoise established in the recovery plan.
- Recognize Death Valley's listed plants and address possible special management needs.
- Consider options for controlling exotic species (tamarisk and others).
- Address impacts of mining on endangered bats.

Cultural Resources and Native Americans

- Address Native American participation in the planning process.
- Consider the Mojave, Chemehuevi, and Timbisha Shoshone tribal values.
- Address cultural resources management issues (e.g. trace trails, rock art, military and mining sites) and establish policies for their preservation, protection, interpretation, and appropriateness of revealing their location.
- Examine how parts of the planning area should be managed for their (Native American) spiritual values.
- Address possible hunting/religious conflicts.
- Address whether archeological sites should be identified and interpreted for educational value or locations kept secret to protect resources.
- The identification, interpretation and possible restoration of some culturally significant resources (e.g. Tidewater Tonopah Railroad, Death Valley mine structures, military sites, Work Progress Administration guzzler sites, trails, and cultural landscapes) should be addressed within plan.

PLANNING CONSTRAINTS AND MANDATES

Many planning decisions are limited by legal mandates. Endangered species, historical and cultural resources, and clean water and air are some areas in which existing laws can limit planning options. The National Park Service's Organic Act and the 1994 California Desert Protection Act , the enabling legislation for Death Valley National Park, define the planning parameters and the mission of the National Park Service and Death Valley National Park in preserving natural resources for the enjoyment of this and future generations. Planning constraints and some of the above laws may appear to conflict. The proposed plan in this document is the planning effort's result in balancing these issues. Below are some specific examples of planning constraints in the California Desert Protection Act. (See appendix A for complete text).

- Withdrawal (sec. 305): Death Valley was withdrawn from all forms of entry under the public land laws, mining laws and mineral leasing laws. However, valid existing rights are recognized and many mining claims exist in Death Valley as a result of the area being previously open to staking of claims.

- Grazing (sec. 306): The privilege of grazing domestic livestock on lands within the Park can continue to be exercised at no more than the current level (1994), subject to applicable laws and NPS regulations.

- Native American Access (sec. 705a): In recognition of the past use of NPS units and wilderness by Indian people for traditional cultural and religious purposes, the Secretary shall ensure access to such park system units and wilderness areas by Indian people for traditional cultural and religious purposes. The section also provides for temporary public closures (of the smallest practicable area and for the minimum period necessary), if requested, to protect the privacy of these activities. Such access must be consistent with the American Indian Religious Freedom Act, and the Wilderness Act for designated wilderness areas.

- Historical and Cultural Values (2)(b)(1)(C): The Park will protect and preserve historical and cultural values of the California desert associated with the ancient Indian cultures, patterns of western exploration and settlement, and sites exemplifying the mining, ranching and railroad history of the old West.

- Wilderness (sec. 601): Approximately 3,258,038 acres have been designated as wilderness by Congress.

- Access to Private Property (sec. 708): The Secretary will provide adequate access to lands or interests in lands not federally owned, which will provide the owner reasonable use and enjoyment.

- Reserved Water Rights (sec. 706): Congress has reserved a quantity of water sufficient to fulfill the purposes of the act.

- Military Overflights (sec. 802): Nothing in the act shall restrict or preclude low-level overflights of military aircraft over new units of the national park or wilderness preservation systems (or any additions to existing units) including overflights that can be seen or heard within such units.

- Private Lands (sec. 519): Lands not owned by the United States are not subject to regulations that apply only to federal lands. However, application of mineral development regulations (36 CFR Part 9A and 9B) is not affected by this section.

ACTIONS CONSIDERED FOR ALTERNATIVES BUT REJECTED

The following are suggestions received during the scoping process that were considered but not evaluated or developed into alternatives:

1. Elimination of all grazing from NPS units
2. Eliminating or reducing wilderness areas, or allowing motorized vehicles use on routes now in wilderness.
3. Providing for a small, corralled herd of burros within NPS units
4. Allowing rock and gem collection
5. Consideration of RS-2477 route assertions

1. Eliminate all cattle grazing.

It was suggested that the National Park Service not allow cattle grazing in the Park. This course of action would not meet our stated purpose and need for developing an implementable management

plan for the Park that meets all mandates from Congress and complies with all applicable laws and regulations. This alternative would directly violate the California Desert Protection Act, which mandates continuation of grazing at current levels pending acquisition of base property. However, the proposed course of action evaluated in alternative 1 would essentially achieve this same result, but through the stated intent to pursue purchase of the permits by third parties and then permanent retirement of donated permits. We believe this action is implementable as a management strategy.

2. Eliminate or reduce wilderness areas, or allow motorized vehicles on all roads

This course of action is contrary to our stated purpose and need for developing an implementable management plan for the Park that meets all mandates from Congress and complies with all applicable laws and regulations. This alternative would also be contrary to the California Desert Protection Act, which created the wilderness areas. As far as allowing motorized use of roads in wilderness, the Wilderness Act provides prohibits motorized vehicles and mechanized equipment. Changes to this situation would require legislation and cannot be accomplished through agency planning documents.

3. Provide for a small, corralled herd of burros

It is not necessary to evaluate this very specific action as an alternative. This option could be considered under any of the alternatives, assuming that the corralled herd was retained for use as pack stock or as a living history component of a mining interpretive demonstration. However, unless a specific use for the herd was identified, retention of such a herd would be costly and would not meet our stated purpose and need of adopting a management plan consistent with our agency mission and the legislative intent of the Park.

4. Allow rock and gem collection

This course of action is contrary to our stated purpose and need for developing an implementable management plan for the Park that meets all mandates from Congress and complies with all applicable laws and regulations. This alternative would also be contrary to the National Park Service mission of resource preservation and would violate agency policy and regulations. Resource collection activities such as this are only allowed when Congress specifies in the enabling legislation that such collection is one of the purposes of the unit.

5. RS-2477 route assertions

Revised Statute 2477 concerns rights-of-way established across public lands under the Mining Act of 1866. Although repealed by Congress in 1976 with enactment of the Federal Land Policy and Management Act, routes that existed prior to October 21, 1976 may "qualify" as an RS-2477 right-of-way. However, a right-of-way asserted under RS-2477 is not automatically assumed to be valid. Regardless of whether a party can successfully assert a valid claim to a right-of-way across national park land, the NPS retains the authority to regulate use of an RS-2477 right-of-way. *See U.S. v. Vogler*, 859 F.2d 638, 642 (9th Cir. 1988). Determinations of RS-2477 right-of-way assertions are not planning decisions and are not appropriately addressed in the NEPA process.

RELATIONSHIP TO OTHER PLANNING EFFORTS

In preparing this document, the planning team attempted to use the best available information and to coordinate its efforts with other planning efforts in adjacent areas. This planning effort used the following documents as background information:

- the 1980 *California Desert Conservation Area Plan* and its environmental impact statement and supporting documents
- the Death Valley National Monument's 1989 *General Management Plan*, and its 1983 *Natural and Cultural Resource Management Plan*
- the 1994 Bureau of Land Management's *Las Vegas Resource Area Resource Management Plan*
- the 1996 U.S. Forest Service's *Spring Mountains National Recreation Area Plan*
- the BLM's 1997 *Environmental Impact Statement for the proposed land acquisition by Army National Training Center at Fort Irwin*

The planning staff has also worked closely with the other planning efforts including the Bureau of Land Management's West Mojave Plan and Northern and Eastern Colorado Coordinated Planning Effort. Descriptions of these efforts follow:

WEST MOJAVE PLAN

The West Mojave Plan is a multi-agency habitat conservation plan involving the Bureau of Land Management, the U.S. Fish and Wildlife Service, the California Department of Fish and Game (CDF&G), and local governments. The West Mojave Plan is developing habitat management alternatives that will recommend amendments to the BLM's *California Desert Conservation Area Plan* and will recommend amendments to the land use plans of all of the participating agencies, including city and county general. It is intended to provide for continued use and development within a 9.4-million-acre area of the western Mojave Desert of southern California in a manner that will ensure the conservation of listed plant and animal species and minimize impacts on critical portions of their supporting habitats. The area extends from Olancha on the north to the San Gabriel and San Bernardino Mountains on the south and from Antelope Valley on the west to Twentynine Palms on the east. The West Mojave Plan and the Northern and Eastern Mojave Plan share the same, respectively, eastern and western boundary.

The goals of the West Mojave Plan are to provide recovery of federally listed and state-listed plant and animal species as viable wild populations, to provide "no surprises" assurances for unlisted species, to conserve critical elements of supporting habitats, to allow resource use and community expansion, and to simplify and reduce the regulatory burden of permitting processes for projects on public and private lands.

Two species that are especially targeted for management protection by this plan are the desert tortoise (*Gopherus agassizii*) and the Mohave ground squirrel (*Spermophilus mohavensis*).

The West Mojave Plan report is still in the draft preparation stage, and details of the proposed or preferred amendments to the *California Desert Conservation Area Plan* are not yet available.

NORTHERN AND EASTERN COLORADO DESERT COORDINATED MANAGEMENT PLAN

This planning area is a 5.5 million-acre area south of the Northern and Eastern Mojave planning area. The following description of this planning effort is from the *Northern and Eastern Colorado Desert Coordinated Management Plan: Preparation Guide* prepared by the Bureau of Land Management in 1994.

> The primary purpose of this plan is to provide for the recovery of the threatened Desert Tortoise which was listed as a threatened species by the U.S. Fish and Wildlife Service in 1990...The plan will implement the recommendations of the U.S. Fish and Wildlife Service's Recovery Plan. The purpose is also to address management of the diversity of all plants and wildlife in ecosystem principles. This focus will address all plants and animals in a systems context (habitats) and selected species (i.e., about 62 flagship and special status species) in particular.

Land users and managers will benefit through resolution of land use conflicts in a regional context and more efficient and consistent project review and processing.

The plan will set standards for managing desert tortoise, other special status species, and habitats within the planning area by defining zones and management prescriptions within and by which they will be managed indefinitely for their individual and interdependent qualities. Zones will also be identified for which Biodiversity values will not receive priority emphasis over other resource management programs. Routes of travel across public lands will be designated as open, closed or limited.

The final plan will function as a habitat management plan and will also amend the 1980 *California Desert Conservation Area Plan*.

LAS VEGAS RESOURCE MANAGEMENT PLAN

The *Stateline Resource Area Draft Resource Management Plan/Environmental Impact Statement* was released in 1992. Since then, the Bureau of Land Management renamed the Stateline Resource Area as the Las Vegas Field Office. The *Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement* was released in May 1998. This plan provides management guidance for about 3.7 million acres of public land administered by the Bureau of Land Management in the Las Vegas Field Area. The plan focuses on six management issues: land tenure, desert tortoise, mineral development, off-road vehicle use, special management area, areas of critical environmental concern, and utility corridors. The *Record of Decision* on the *Las Vegas Resource Management Plan and Final Environmental Impact Statement* was released 1998, completing this planning effort.

SPRING MOUNTAINS NATIONAL RECREATION AREA PLAN

In 1996 the final management plan was prepared for Spring Mountains National Recreation Area (SMNRA). This plan, which amended the *Toiyabe National Forest Land and Resource Management Plan,* resulted in the following actions:

- unified management direction for the Spring Mountains National Recreation Area under a single plan
- identified lands suitable for recreation development, mining, and other uses
- recommended changes in special area designations (wilderness, research natural areas, and scenic byways)
- established a Spring Mountains National Recreation Area monitoring and evaluation program
- developed new management prescriptions and established two new management areas

FORT IRWIN PROPOSED EXPANSION

The initial 1988 Army proposal was to expand generally to the south into the "Coyote Basin" area, which involved the proposed withdrawal of approximately 250,000 acres of public lands. In 1991, the U.S. Fish and Wildlife Service issued a draft "jeopardy" biological opinion.

In September 1992, the Army identified a new expansion proposal which was referred to as the "Silurian-Mojave B" alternative. This redesigned expansion proposal involved approximately 327,000 acres of proposed public land withdrawal in the Silurian Valley east of the National Training Center (NTC), another 2,560 acres along the south NTC boundary, and proposed joint use of approximately 160,200 acres of lands currently under Department of the Navy jurisdiction in the Randsburg Wash and Mojave B test ranges west of the NTC.

Based on objections from Navy, a revised Army proposed action became the "Silurian" alternative and involved approximately 330,000 acres, of which approximately 310,000 acres are public lands. Formal consultation with U.S. Fish and Wildlife Service was re-initiated in April 1993 for the revised Army proposal, and a no jeopardy biological opinion was issued on August 19, 1993.

A draft environmental impact statement (DEIS) was released on January 3, 1997 with an initial 90-day public comment period scheduled to end April 4, 1997. The DEIS comment period was extended an additional 60 days, and ended on June 3, 1997 in San Bernardino, Victorville, Barstow, Baker, Sacramento, and Pasadena, California. Issues addressed in the DEIS include the potential impact on major utility corridors, State Highway 127, the threatened desert tortoise, bighorn sheep and riparian habitats, mineral development, cultural resources in the Salt Creek and Denning Springs Areas of Critical Environmental Concern (ACEC), air quality, five legislative wilderness study areas, public access, and public health and safety.

In 1997 and 1998, discussions between the Bureau of Land Management, the U.S. Fish and Wildlife Service, and the Army explored the potential for a southern expansion configuration that could meet the Army need and, through a habitat compensation/land exchange transaction, possibly enable significant consolidation of important desert tortoise recovery areas in the Western Mojave. The Bureau of Land Management completed a detailed assessment of southern expansion scenarios with applied mitigation and compensation. A "limited southern expansion" configuration and mitigation/compensation package was identified by the Bureau of Land Management and provided to the Army NTC. It involved 128,000 acres: 45,000 acres in East Gate, and 82,000 acres in the coyote Basin east of Fort Irwin Road.

In April 1999, the Army identified their current proposed expansion of 174,000 acres: 45,961 acres in East Gate (eastern expansion), 21,120 acres north and west of Coyote Lake (southern expansion), 83,721 acres in Superior Valley (southwest and west expansion), and conversion of 23,659 acres on-post from tortoise management zone to armored training. The Bureau of Land Management and the U.S. Fish and Wildlife Service are currently evaluating the current Army proposal.

YUCCA MOUNTAIN NUCLEAR WASTE DISPOSAL AT NEVADA TEST SITE

Twenty miles east of Death Valley National Park lies the site of the proposed Yucca Mountain Nuclear Waste Disposal Site. If approved and licensed, spent nuclear fuel and high-level radioactive waste would be transported via surface public highways and/or rail to the Yucca Mountain site. The site is 100 miles north of Las Vegas. The nuclear waste would be deposited in sealed underground tunnel vaults for thousands of years. In 1999, the Department of Energy released a draft environmental impact statement for public review.

The National Park Service has expressed opposition to the proposed action. Very serious concerns exist regarding the potential for contamination of the Death Valley Groundwater Flow System, part of which lies directly under the storage site. Current geological information indicates that there is nothing to restrict the contamination of the flow system should there be a leak in the storage facilities. The NPS has reviewed the Draft Environmental Impact Statement for the Disposal Site and has expressed that there is neither adequate information nor adequate safeguards from this possibility over the long term.

Should there be contamination of the flow system NPS believes that the results would inevitably have very serious, possibly catastrophic, negative impacts on the quality of life in the area, on the $170 million annual Death Valley National Park tourist industry and on the natural and cultural resources of Death Valley National Park.

In addition to the long term storage of the nuclear waste, the materials would be transported, at least part of the time, over public highways. One of the proposed routes would be California State Highway 127. This route parallels the external boundary of Death Valley National Park, within 300', for over 30 miles. This is a very hazardous route with many blind curves, steep grades, lacking shoulders in many places and subject to flash flooding. While it may have an advantage of few local residents, that adds to the matter of response to any accidents or spills.

Additionally, SR 127 parallels the Amargosa River drainage over much of its length. The Amargosa River terminates within Death Valley National Park at Badwater, the lowest point in the Western Hemisphere. Should there be a nuclear waste spill in the river drainage, from a transportation accident, the contamination of the Amargosa River and Death Valley National Park could be irreversible.

Along the entire length of SR 127 the only emergency response personnel are dedicated members of small town volunteer fire and ambulance services, staff members of agencies such as NPS, BLM, the Sheriff's Departments and the Highway Patrols of California and Nevada. This route is used in the vast majority by tourists, visitors to Death Valley National Park and other areas of this part of the desert. Any accidental spills, which are absolutely inevitable, will directly affect Death Valley National Park resources, Park visitors and any responding emergency services personnel. Accordingly, it has been indicated to the Department of Energy, that NPS objects to any transportation of nuclear waste materials in and near the boundaries of Death Valley National Park.

TIMBISHA SHOSHONE HOMELAND

A legislative proposal to transfer lands to the Timbisha Shoshone Tribe for establishment of a permanent homeland within and adjacent to the Death Valley National Park is analyzed in a draft legislative environmental impact statement (LEIS) released for public review and comment.

The draft LEIS analyzes possible environmental impacts resulting from the transfer of approximately 7,500 acres of federal lands and the potential purchase of another 2,550 acres from private owners. About 300 acres of the federal lands involved are within Death Valley National Park near Furnace Creek and administered by the National Park Service. The remaining 7,240 acres of federal lands involved are administered by the Bureau of Land Management in California and Nevada, including approximately 1,000 acres at Death Valley Junction, California; 640 acres at Centennial, California; 2,800 acres at Scotty's Junction, Nevada; and 2,800 acres at Lida Junction, Nevada. The private lands being identified for possible purchase include approximately 120 acres of former Indian lands in Saline Valley, California, at the edge of Death Valley, and the 2,430-acre Lida Ranch near Lida, Nevada.

The land transfers and acquisitions, which require Congressional approval, along with other proposed cooperative activities between the Tribe and the Department of the Interior, are contained in pending legislation, S. 1012, introduced February 24, 2000. The Department of the Interior testified in support of the legislation in a recent hearing before the Senate Committee on Indian Affairs. The legislation implements a provision of the California Desert Protection Act, (Public Law 103-433) enacted by Congress in 1994, which directed the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha Shoshone Tribe. NPS, BLM, the Bureau of Indian Affairs, the Bureau of Reclamation, and the U.S. Fish and Wildlife Service cooperated in preparation of the study and this LEIS, required by the National Environmental Policy Act.

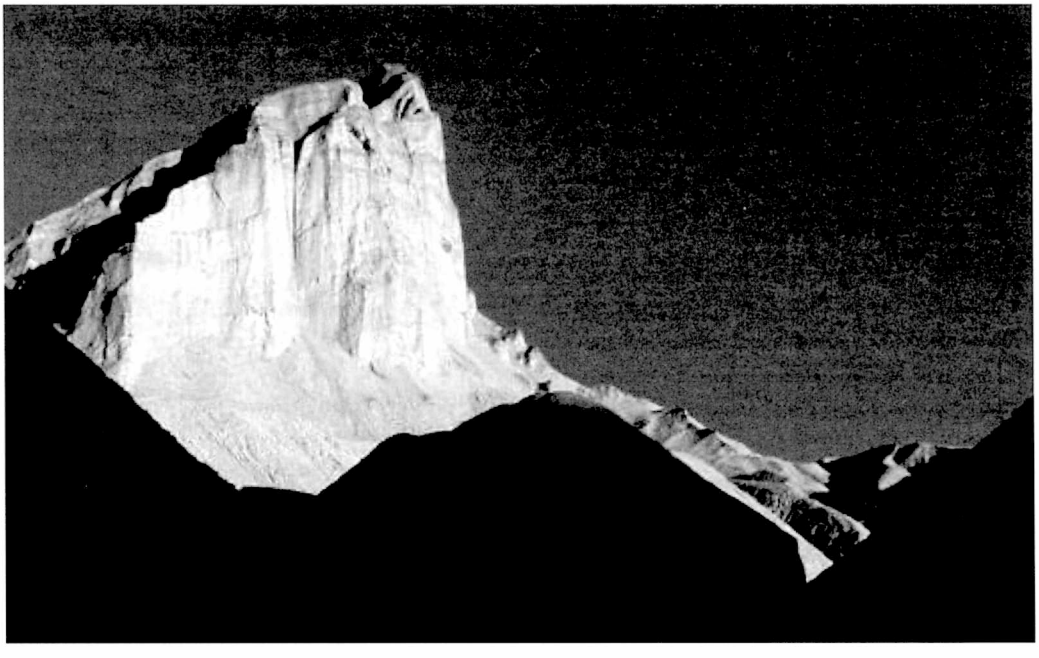
FUTURE PLANNING EFFORTS

As a result of efforts made to date, additional NPS planning documents have been identified as being needed to supply detailed information for specific topics. Where appropriate, public involvement would

be sought on all of these plans through the environmental assessment process. Additional planning efforts that may be undertaken over the next ten years include the following:

- **comprehensive interpretive plan**
- **wilderness/backcountry management plan**
- **fire management plan**
- road management plan
- **grazing management plan**
- site management plan for Saline Valley*
- development concept plan for Furnace Creek/Cow Creek*
- **development concept plan for Grapevine**
- updated development concept plan for Stovepipe Wells
- commercial services plan
- **historic resources study/development concept plan for Scotty's Castle**
- sign plan
- **wayside exhibit plan**
- **site management plan for Eureka Dunes**
- minerals management plan
- inventorying and monitoring plan
- natural and cultural resource management plan updates*
- cooperative program plans with Timbisha Shoshone Tribe*
- Wildrose site plan
- **annual strategic plan**

Plans in **bold text** are either currently being prepared or already exist. Those with asterisks are considered the highest priority plans to initiate next.



Zabriskie Point

ALTERNATIVES, INCLUDING THE PROPOSED ACTION



Scotty's Castle



Charcoal Kilns

OVERVIEW OF ALTERNATIVES

This section addresses a range of feasible and implementable options that were developed through public scoping and review of the first draft environmental impact statement released in September 1998. The range of alternatives identified includes actions that meet our stated purpose and need and could reasonably be implemented given the legislative and legal constraints under which the National Park Service operates and the specific legislative direction for the Death Valley National Park.

Alternative 1 presents the **proposed general management plan strategy** for the Park.

Alternative 2 provides a description of **existing management** activities and is commonly referred to as the no-action or status quo alternative. This is the management approach that the Park is currently following, and would continue to follow if no further agency action were taken.

Alternative 3 presents **optional management strategies** for some management issues where feasible and implementable alternative strategies were identified that meet our stated purpose and need for the plan. Many of the management activities in this alternative are the same as in the proposed action and are not repeated. Only those topics where options were identified are discussed.

If, through the consideration of public input, agency mission and legal requirements, some component of alternative 2 or 3 is preferred over what is currently in the proposed action, the final management plan selected in the record of decision could be a new alternative that contains components derived from any of the alternatives.

The approach to alternative development using themes was explored and rejected. Creating alternatives around themed concepts such as "Maximum Resource Protection" or "Enhanced Visitor Use," for example, typically creates public voting on alternatives based on titles rather than content, and often creates unrealistic expectations. In this plan we felt it would be better to present alternatives without theme titles, but that instead are composed of elements that could be considered against each other across alternatives. This approach creates an array of alternative choices for issues where public input suggested it was needed, but does not create unnecessary and unrealistic choices where no issues or clear options exist.

ALTERNATIVE 1: PROPOSED ACTION

GENERAL DESCRIPTION

The previous *General Management Plan* was approved for the Death Valley National Monument lands in 1989. The establishment of wilderness and addition of over a million acres of new lands by the California Desert Protection Act in 1994 requires the development of a new general management plan that would serve as the overall management strategy for the next 10 to 15 years under which more detailed activity or implementation plans would be prepared. As such, a general management plan is general rather than specific in nature, and focuses on purposes of the Park, its significant attributes, its mission in relation to the overall mission of the agency, what activities are appropriate within these constraints, and resource protection strategies. It also provides guidelines for visitor use and development of facilities for visitor enjoyment and administration of the Park.

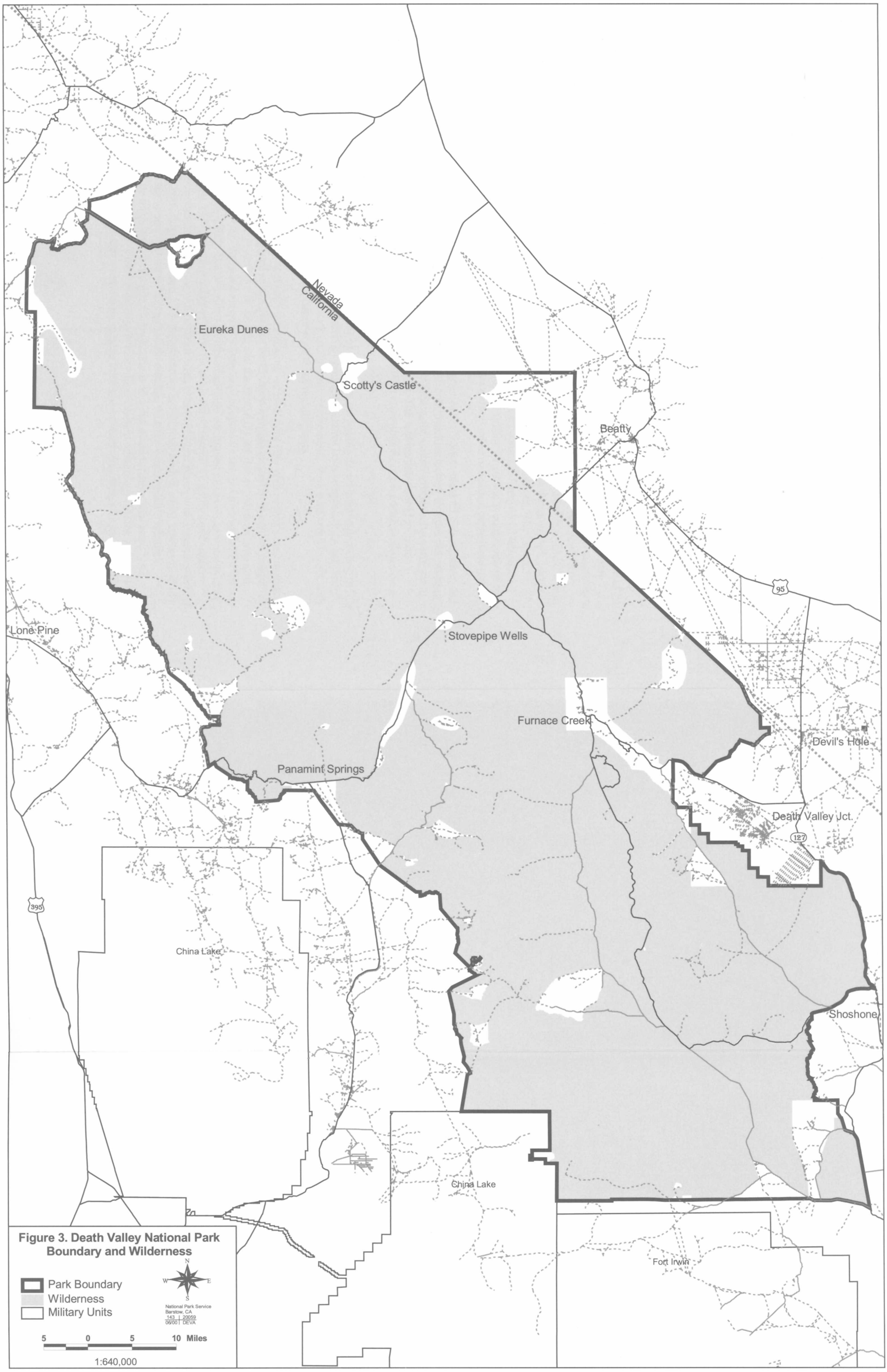
Alternative 1 seeks to extend existing Park management strategies and NPS mission and policies to the management of the resources within the new lands added to the Park in 1994. It also strives to incorporate the designation of 95% of the Park as wilderness into the management approach. The Park would seek to protect resources commensurate with the visitor use mandate as the highest priority, with no derogation of Park values.

The proposed action addresses the removal of feral burros and horses from the Park in order to achieve the NPS mission of managing the unit for native desert species. It also recognizes the need to work cooperatively with the Bureau of Land Management on adjacent land where that agency's mandate from Congress is to manage wild horses and burros so as to "achieve and maintain a thriving natural ecological balance on public lands" where Herd Management Areas were established in 1971 and are in existence today. Eliminating some or all burros from an area to achieve a "thriving natural ecological balance" is a BLM option.

The proposal strives to balance the preservation of resources mission with specific mandates from Congress, while not allowing derogation of Park values. For example, grazing would continue at no more than current levels on the new lands, as per the California Desert Protection Act. This plan treats grazing as a component of management. Of four total allotments, two allotments are eliminated and one is retired, leaving one allotment remaining within the Park.

The proposed plan also identifies a number of other activity level plans needed to address site specific issues, such as the Saline Valley Warm Springs management and a wilderness/ backcountry management plan.

The proposed action also adopts a land acquisition strategy as presented in the "Land Protection Plan" (appendix B). This strategy would seek funding to allow acquisition of most private land from willing sellers based on priorities identified in the "Land Protection Plan."


Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Lone Pine
Stovepipe Wells
Furnace Creek
Devil's Hole
Panamint Springs
Death Valley Jct.
127
395
China Lake
Shoshone
China Lake
Fort Irwin
Figure 3. Death Valley National Park Boundary and Wilderness
Park Boundary
Wilderness
Military Units
N
W
E
S
National Park Service
Barstow, CA
143 | 20059
06/00 | DEVA
5 0 5 10 Miles
1:640,000

NATURAL RESOURCES

PHYSICAL ENVIRONMENT

Air Quality

The National Park Service has a responsibility to protect air quality under both the 1916 Organic Act and the Clean Air Act (42 U.S.C. 7401 et seq.). Although the Clean Air Act gives the highest level of air quality protection to class I areas, it provides many opportunities for the National Park Service to participate in the development of pollution control programs to preserve, protect, and enhance the air quality of all units of the national park system, including class II areas. The National Park Service would seek class I designation for the Park.

The National Park Service would seek to perpetuate the best possible air quality in the Park because of its critical importance to visitor enjoyment, human health, scenic vistas, and the preservation of natural systems and cultural resources. The National Park Service would work to promote and pursue measures to safeguard these values from the adverse impacts from air pollution. The National Park Service would strive to set the best example for others to follow in their development and management activities. When the impacts of existing or potential air pollution on Park resources are unclear, the National Park Service would err on the side of protecting air quality and related values for future generations. The Park's air monitoring program would continue under alternative 1. Death Valley National Park has a National Oceanographic & Atmospheric Administration weather station at Furnace Creek and would continue to be a participating member of a national air quality network and would monitor ozone and particulate matter.

Sections 118 and 176 of the Clean Air Act require federal agencies/facilities to meet all federal, state, and local air pollution control laws and regulations. In the case of units/facilities located in areas not meeting federal or state air pollution control standards (nonattainment areas), the units/facilities must conform to requirements established to attain and maintain those standards. The requirements could include provisions to reduce emissions from existing facilities and limit emissions from proposed facilities on a greater than 1:1 basis.

Since the Park is located in a nonattainment area for one or more air pollutants, no actions proposed in this alternative would lead to violations of federal or state air pollution control laws or regulations nor would they increase emissions that would violate the state conformity requirements. Park staff would work with air pollution control officials to ensure compliance with those requirements.

A more efficient and comprehensive approach for reducing regional haze that veils scenic vistas in parks was announced in April 1999 in a final rule. This rule builds upon existing air pollution control programs which are designed primarily to protect public health, and the first plans are due at the same time states submit plans for meeting new health-based air quality standards adopted by the Environmental Protection Agency last summer (2005–2008). But, the rule requires steady and continuing emission reductions even after health goals are met and sets a target date of 2064 for achieving "natural" visibility conditions in national parks and wilderness areas. States will be required to submit 10-year plans, with measures needed to stay on track toward that target (at least a 10% improvement in visibility each decade). Irrespective of what other measures states may choose to adopt, the rule requires that the "best available retrofit technology" (BART) be installed at hundreds of power plants and industrial facilities that were built without pollution controls and have otherwise avoided installing modern technology. States will have the option of achieving BART-or-better emission reductions through economic incentives or market-based programs.

Viewsheds

The Park would prepare guidelines for the developed areas. These guidelines would be prepared to establish visual consistency and themes in facility development. Guidelines would also be created for reaching visual compatibility with surrounding landscapes, significant architectural features, and site details. The primary objective of guidelines would be to create harmony between the built environment and the natural environment.

With the increasing use of cellular communication equipment, more antennas and relay equipment are being installed throughout the country. The overall management goal of each NPS unit would be to protect and maintain the visual quality of the landscape and the built environment. The Park would implement the following objectives for communications equipment proposals:

- All above-ground communication equipment should not significantly distract from the visual quality of the scenery.
- Each new proposal for radio or cellular antennas or towers must demonstrate that the equipment would provide a critical service for visitors and NPS staff and is not duplicative.
- The installation of new equipment outside the Park or on existing communication towers or at defined sites should be considered before the construction of new sites in Park is considered.
- New locations would be reviewed through the environmental assessment process, which must consider impacts on the visual quality of the scenery.

The National Park Service would work with neighboring landowners on topics of mutual interest being sensitive to the influences and effects that Park management might have on adjacent landowners. The National Park Service would seek to enhance beneficial effects and to mitigate adverse effects in ways consistent with its policies and management objectives. The agency would encourage compatible adjacent land uses and seek to mitigate potential adverse effects on Park values by actively participating in planning and regulatory processes of neighboring jurisdictions, other federal, state, and local agencies, and Native Americans.

Night Sky

The National Park Service would cooperate with neighbors and local government agencies to seek to minimize artificial light intrusion, recognizing that darkness and the night sky are part of the overall visitor experience. The National Park Service would strive to set the best example in all developments that involve the use of artificial outdoor lighting, ensuring that it is limited to basic safety requirements and is shielded to the maximum extent possible, to keep light on the intended subject and out of the night sky. Baseline light measurements would be established for night use for monitoring changes over time.

Noise and Overflights

The National Park Service would strive to preserve the natural quiet and sounds associated with the physical and biological resources of the Park. Activities causing excessive or unnecessary sounds in or adjacent to the Park, including low-level aircraft overflights, would be monitored, and action would be taken to prevent or minimize unnatural sounds adversely affecting Park resources and values or visitor enjoyment. The National Park Service would collaborate with the Department of Defense to minimize impacts on visitors and resources from military overflights, as authorized by sec. 802 of the California Desert Protection Act.

Water Resources

Water Rights. The California Desert Protection Act of 1994 in section 706(a), with respect to each wilderness area, reserves a quantity of water sufficient to fulfill the purposes of the act. Section 706(b)

mandates that the Secretary of the Interior and all other officers of the United States take "all steps necessary to protect the rights reserved by this section." Federal reserved rights generally arise from the purposes for the reservation of land by the federal government. When the government reserves land for a particular purpose, it also reserves, explicitly or by implication, enough unappropriated water at the time of the reservation as is necessary to accomplish the purposes for which Congress or the President authorized the land to be reserved, without regard to the limitations of state law. The vested rights are valid as of the date of the reservation, whether or not the water is actually put to use, and are superior to the rights of those who commence the use of water after the reservation date. General adjudications are the means by which the federal government claims its reserved water rights. The McCarran Amendment (66 Stat. 560, 43 U.S.C. 666, June 10, 1952) provides the mechanism by which the United States, when properly joined, consents to be a defendant in a suit to adjudicate water rights. The precise nature and extent of the National Park Service's water rights probably will remain uncertain until the United States is joined in an adjudication, the Department of Justice files claims to water rights on behalf of the National Park Service, and the court decrees the United States. Hence, it is the responsibility of both the National Park Service and the Bureau of Land Management to protect the reserved water rights established under the California Desert Protection Act and other applicable federal authorities.

Death Valley National Park was involved in a historic water rights decision, when the U. S. Supreme Court in 1976 determined that the NPS had a reserved water right to a certain level of ground water at Devil's Hole. This Supreme Court action is frequently referred to as *Cappaert v. United States*. The purpose of the reserved water right is to maintain the water level in Devils Hole to assure the survival of the Devils Hole Pupfish, an endangered species.

Since 1976 the NPS has been actively protecting the water right to the Devils Hole area. NPS believes the continuation of this approach is vital to the long term viability and survival of the Devils Hole Pupfish and other Park resources.

The NPS participates in California and Nevada administrative water rights proceedings to protect Federal reserved, riparian, and appropriative rights established for Death Valley National Park. The purpose of this participation is to protect Park water rights from injury by threats such as new appropriations for groundwater located upgradient of Park water sources.

NPS Management Policies (1988) state:

> *All rights to the use of water diverted to or used on federal lands within the national park system by the United States or its concessioners, lessors, or permittees will be perfected in the name of the United States.*

The National Park Service in its general planning process for each unit of the national park system and the Bureau of Land Management in its planning process for each wilderness area have jointly agreed to incorporate their respective policies, guidelines, and administrative procedures and apply the following principles to discharge their responsibilities under section 706 of the California Desert Protection Act to manage and protect federal reserved water rights (Desert Managers Group 1995):

- inventory all water sources within the boundaries of the wilderness area/park unit
- share water source inventory data
- jointly request from the California Division of Water Rights notification of any filing for appropriated water rights within or adjacent to the boundaries of BLM wilderness or units of the national park system
- defend federally reserved water rights through the state of California administrative process and, if necessary, seek judicial remedy in the appropriate courts

- quantify the amount of water reserved to fulfill the purpose of the reservation as part of any adjudication in California in which the United States may be joined under the McCarran Amendment
- where necessary, pursue acquisition of any existing nonfederal appropriated water right within their respective jurisdictions
- because use of percolating groundwater does not require a permit from the state of California, participate in local government proceedings that authorize nonfederal parties to withdraw percolating groundwater where such withdrawals may impact water sources within their respective jurisdictions to which federally reserved water rights are attached
- participate in any proceedings pursuant to Nevada state water law that may authorize withdrawal of groundwater where such withdrawal may impact water sources within their jurisdictions to which federally reserved or appropriated water rights are attached
- vigorously defend water travelling to the Park in the Death Valley aquifer from Nevada
- work with holders of water rights to restore modified water sources to natural conditions while still allowing for valid existing uses

Water Use. Water would be used efficiently and frugally in the Park. The National Park Service would seek to protect, perpetuate, and possibly restore surface water and groundwater as integral components of Park aquatic and terrestrial ecosystems. Surface water and groundwater withdrawn for the Park's use would be the amount necessary to achieve Park purposes. All water withdrawn from the Park for domestic use would be returned to the Park watershed system once it has been treated to ensure that there would be no impairment of Park resources. Interbasin transfers would be avoided. If adverse effects were found, the National Park Service would take all legal and appropriate steps necessary to protect natural resources from the effects attributed to such activities. The ongoing water-monitoring program would continue. Death Valley National Park will seek to restore, maintain, or enhance the quality of all surface and ground waters within the Park consistent with the Clean Water Act (33 U.S.C. et seq.) and other applicable federal, state, and local laws and regulations.

The Park would continue to maintain the water levels at Devils Hole, the home of the endangered Devils Hole pupfish. The Park would continue to actively monitor the pool's water elevation. The Park would continue to be involved in an interagency effort to monitor the water flow in the Death Valley Groundwater Flow System to help ensure that any major water extraction that might occur miles away from the Park do not adversely affect the Park's resources. Monitoring other wells and springs within the Park including Darwin Falls and in at least nine water delivery systems would also continue.

Floodplain and Wetland Areas. The occupancy and modification of floodplain and wetland areas would be avoided wherever possible. Where no practicable alternatives exist, mitigating measures would be implemented to minimize potential harm to life, property, and the natural floodplain and wetland values. Management of floodplain and wetland areas is subject to the provisions of Executive Order 11988, "Floodplain Management" (42 U.S.C. 4321), Executive Order 11990, "Protection of Wetlands" (42 U.S.C. 4321), and the Rivers and Harbors Act (33 U.S.C. 401 et. seq.), and section 404 of the Clean Water Act (33 U.S.C. 1344).

Water Developments. The National Park Service would examine the use of and need for all guzzlers, livestock tanks, and troughs (hereafter referred to as developed water sites). Water at developed water sites would be retained for native plants and wildlife if these facilities were needed to mitigate for local water losses due to previous human activities. Simultaneously, with the retention of these developed water sites, the National Park Service would actively begin to restore natural water sources to be self-sustaining. When a water source became self-sustaining, the artificial facility would be removed. Requests to use

motorized access to guzzlers in wilderness areas (to maintain guzzlers or replenish water) would be reviewed individually.

Water is necessary for livestock grazing on NPS lands. The amount of water that would be diverted or used for livestock would be maintained for the animals'health. If and when animal unit months (AUMs) were reduced (no increase in AUMs is allowed under the California Desert Protection Act) a concurrent reduction in water for livestock purposes would be expected. The National Park Service would examine these developed water facilities and take action, where appropriate, to restore natural waters. If the National Park Service did not own the water rights, the agency would work with the owners to encourage them to consider the benefits of natural water restoration to restore modified water sources to natural conditions while still allowing for valid existing uses.

Paleontological Resources

Some paleontological research has been initiated or funded by the National Park Service. Most is accomplished by outside institutions that request and receive NPS research permits. The institutions, in exchange for the opportunity to study NPS resources, agree to provide information that the National Park Service can use to develop strategies for resource protection, management, and interpretation.

Paleontological resources, including both organic and mineralized remains in body or trace form, would be protected and preserved for public enjoyment, interpretation, and scientific research in accordance with Park management objectives and approved resource management plans. Although paleontological research by the academic community would be encouraged and facilitated under research permits subject to NPS management criteria, the National Park Service would enhance its own knowledge of paleontological resources through comprehensive inventory and monitoring programs. To enhance the conservation and management of paleontological resources, the National Park Service would seek to develop collaborative partnerships with government agencies, academic institutions, and public and private organizations with paleontological resource management or research capabilities/expertise. Management actions would be taken to prevent illegal collecting. Actions also might be taken to prevent damage from natural processes such as erosion. Protection could include construction of shelters over specimens for interpretation in situ, stabilization in the field, or collecting, preparing, and placing of specimens in museum collections. The localities and geologic settings of specimens would be adequately documented when specimens were collected.

Geological Resources

Park geological features would be protected. Certain fragile geologic features, such as sand dunes and salt flats would be monitored to determine if measures were needed to prevent or stop human-caused damage. Mapping by U.S. Geological Survey would be conducted to map Death Valley National Park's renowned exposed geology. Resource protection would continue to consist of random patrols of the backcountry as well as limited public closures to protect sensitive sites.

Cave Resources

NPS *Management Policies* (1988) provide that caves be managed to perpetuate their atmospheric, geologic, biological, ecological, and cultural resources in accordance with approved cave management plans. Natural drainage patterns, air flows, and plant and animal communities are to be protected. In general, the NPS management direction is to avoid development of caves and to perpetuate natural conditions, while seeking to protect the resource. Caves are not common in Death Valley. The most significant cave is Devils Hole. It is closed to public use to protect the endangered pupfish.

BIOLOGICAL ENVIRONMENT

Sensitive Species

The National Park Service would identify and promote the conservation of all federally listed or proposed threatened or endangered species and their critical habitats within Park boundaries in ways that were consistent with the purposes of the Endangered Species Act (16 U.S.C. 1531 et seq.). As necessary, the National Park Service would control visitor access to and use of critical habitats and might limit access to especially sensitive areas. Active management programs would be conducted as necessary to perpetuate the natural distribution and abundance of threatened or endangered species and the ecosystems on which they depend.

The National Park Service has prepared a list of all known federal, state, and locally listed threatened, endangered, rare, declining, sensitive, or candidate species that are native to and present in the Park, as well as their critical habitats. (See appendix C). Controlling access to critical habitats or conducting active management programs would be considered that would be similar to activities conducted to perpetuate the natural distribution and abundance of federally listed species. Plant and animal species considered rare or unique to the Park would be identified and their distribution would be mapped. All management actions for protection and perpetuation of special status species would be determined through the Park's updated natural and cultural resource management plan or site-specific planning efforts.

Death Valley National Park would continue to manage and protect the 40-acre area known as Devils Hole, its endangered pupfish and other sensitive aquatic and terrestrial plants and animals. This area is within the external boundaries of Ash Meadows Wildlife Refuge managed by the U.S. Fish and Wildlife Service. The existing management activities at Devils Hole are discussed in alternative two. Those maintenance, research and monitoring activities would continue under this alternative. Please refer to that discussion for a complete description. Park staff have recently initiated a three year in-depth ecology study of the Devils Hole ecosystem. The study will provide a comprehensive inventory of the biological components that are present in the aquatic habitat (fish, invertebrates, and algae). The study will also describe the inter-related nature of the different species that are present, so a long-term monitoring and protection program for the entire biological community can be developed.

A draft site management plan is being prepared for the Eureka Dunes area. This plan, in consultation with the U.S. Fish and Wildlife Service, addresses the protection of sensitive species. Potential actions to be considered as part of this plan include moving both parking areas to less sensitive sites, a step-up plan for limiting human activities, if necessary, controlling actions on exotic Russian thistle, converting a hodgepodge of roads to foot access, and continuing the main access road in a graded, dirt condition. These will further enhance the protection of sensitive species as a result of being within Death Valley National Park.

Introduced Species

Nonnative plants and animals would not be introduced except under the most unusual circumstances (i.e., historic landscape restoration at Scotty's Castle). The management of populations of exotic plant and animal species, up to and including eradication, would be undertaken wherever such species threaten Park resources or public health and when control was prudent and feasible.

Burro and Wild Horse Management. The National Park Service would adopt the "no burro or wild horse" strategy that exists for the former monument lands (NPS 1983) and apply it to the newly added Park lands. Wild horses and burros, if encountered, would also be removed following the strategy described below. This *General Management Plan* would also serve as an update of the existing burro management component of the Park's *Natural and Cultural Resource Management Plan*. A cooperative

agreement would be developed that assures that the Bureau of Land Management would take steps to control herds adjacent to the Park and would remove trespass burros and wild horses. The Bureau of Land Management has agreed to install boundary fences at critical points where herds are proposed adjacent to the Park, after consultation with the Park (Tim Salt, BLM District Manager, personal communication, 1998).

Removal of horses and burros from Park lands would be completed through a three phase removal program. Phase one consists of a Park-wide live capture program that would be in effect for a maximum of five years. Capture techniques during phase one would include three primary methods: 1) enticing burros and wild horses into corrals with water or food, 2) herding into corrals by using wranglers and possibly helicopters, and 3) netting and removal of burros with helicopters. This option would not be considered methods until corralling and herding methods become ineffective and remote terrain and cost-effectiveness become a consideration. All captured burros and wild horses would be adopted through existing BLM facilities or through direct or indirect adoption programs of the National Park Service, or adoption by the efforts of a third party. This phase began in 1999, and resulted in the live capture of 204 burros that were transferred to the Bureau of Land Management or a private burro advocacy group.

In phase two the National Park Service would actively solicit interested animal protection groups that would begin removing the remaining few animals. An agreement would be signed with the group(s) to provide up to 2 years to remove the remaining burros and wild horses from the Park at their expense. The National Park Service would provide oversight, and possibly some logistics support and use of some equipment and corrals. The duration of the phase two approach will be determined by effectiveness of the protection group capture efforts, i.e. if the groups could not demonstrate that they were capturing animals at a rate that was faster than the animal's reproductive rate, the time frame for phase two would be shorter than two years. It is anticipated that most of the burros and wild horses in the Park would likely be captured and removed through phases one and two. If no interested group is found within six months after the completion of phase one, the National Park Service would begin phase three.

In phase three NPS staff would eliminate the remaining few animals in the most cost-effective and humane manner to achieve a zero population. Removal efforts could involve a variety of techniques including, but not limited to shooting, wrangler/helicopter roundups, and netting-removal with helicopters. Phase three would continue for an indefinite time. Phase three could be suspended and phase two reinitiated if an animal protection group comes forward to conduct capture activities and provides clear evidence that their efforts are able to maintain herd levels at near zero levels. The Park would work expeditiously with groups that can demonstrate an effective ability to capture.

Phases can be run concurrently in different parts of the Park. For instance, the old monument lands have been in phase three for several years. This phase has been temporarily suspended while animal protection groups are actively working to capture burros there. The Park also maintains the option of returning to phase three in the old monument lands if live captures do not succeed in reducing the populations. As captures in the new Park lands proceed, a particular area of the Park, such as Saline Valley, could be placed in phase two or phase three separate from the rest of the Park.

The Park Service is aware of the burro's potential for rapid population growth (up to 20% per year). The above proposed removal strategy would result in a burro and wild horse population that approaches zero.

Concurrently with these control actions, when funding is made available, the National Park Service will work with the Bureau of Land Management and the California Department of Fish and Game on feasibility studies that involve boundary fences that are similar to the fence that has existed around the Nevada Triangle since 1988.

Nonnative Vegetation. The Park would continue to actively pursue the removal of nonnative tamarisk. Tamarisk eradication efforts would continue to identify areas where *Tamarix ramossisima* was gaining a foothold. The Park would continue the limited programs to control Russian thistle and hornwort (an aquatic annual plant at Saratoga Springs). However, as resource monitoring efforts highlight other problems, or research provides solutions to known problems, funding would be sought for additional eradication programs.

Disturbed Land Restoration

The National Park Service would seek to perpetuate native plant life as part of natural ecosystems. Natural landscapes and plants would be manipulated only when necessary to achieve approved management objectives. To the maximum extent possible, plantings in all areas would consist of species native to the Park or historically appropriate for the period or event commemorated. Native species would be emphasized. The use of exotic species would conform to the NPS exotic species policy (NPS 1988). Landscapes and plants might be manipulated to maintain habitat for threatened or endangered species, but in natural areas, only native plants could be used if additional plantings were done. Existing plants would be manipulated in a manner designed to restore or enhance the functioning of the plant and animal community of which the endangered species is a natural part.

In natural areas landscape conditions caused by natural phenomena such as landslides, earthquakes, floods, and natural fires would not be modified unless required for public safety, protection of NPS facilities, or necessary reconstruction of dispersed-use facilities, such as trails. Terrain and plants could be manipulated where necessary to restore natural conditions on lands altered by human activity.

In cultural areas, such as at Scotty's Castle, trees, other plants, and landscape features would be managed to reflect the historic landscape or the historic scene associated with a significant historic theme or activity.

Death Valley National Park would continue rehabilitating abandoned mine sites. Rehabilitation efforts would continue to use techniques such as netting shafts and gating adits to eliminate safety hazards. Each site would be individually evaluated and action taken as appropriate to restore the area to as a natural conditional as possible, while considering other cultural and natural values. Consideration of bats and other wildlife, as well as cultural resources would be an integral part of the decision process.

FIRE MANAGEMENT

Although the National Park Service recognizes the natural role of fire in ecosystem processes, the effects of fire on components of desert ecosystems are not well understood. The National Park Service is assessing and documenting the state of existing fire effects research in desert ecosystems and formulating a desert fire management strategy. Unit-specific fire management plans would be developed consistent with this policy. Over the short term (1–10 years) the fire management policy would be guided by the best available scientific knowledge of fire effects and by current NPS policy direction. A number of changes would be implemented with regard to agency-wide fire management policy.

Management options include full suppression, prescribed fire, natural fire managed to achieve benefits to natural resources, or a combination of these. In many cases, appropriate management strategies would be pre-determined in the planning process, based on life and property considerations, location, identification of natural or cultural resources at risk, existing vegetation and fuels, terrain, and other factors. In other instances, management strategies would be determined on an individual basis, factoring in additional variables such as current and predicted weather conditions, staffing levels, resource management objectives, terrain, and identified planning parameters. Research burns might be initiated within specific prescriptions, and burn sites would be monitored to assess changes over time.

Protection of life and property is first and foremost. All human caused wildfires would be suppressed, and all fire management actions would be implemented using methods, equipment and tactics which cause the least impact to natural resources. Heavy equipment, such as bulldozers, would not be used except in emergencies as determined by the Superintendent. All staff will receive training on appropriate strategy, tactics and precautions in sensitive species habitat.

Fire management strategies within wilderness areas would also be determined based on the criteria discussed above. Additionally, a "minimum requirement" process would be undertaken for every fire in wilderness to determine the "minimum tool or administrative practice necessary to successfully and safely accomplish the management objective with the least adverse impact on wilderness character and resources" (*NPS Management Policies*). The use of mechanized equipment and transport (i.e. chain saws, portable pumps, vehicles and aircraft) would remain an exception to be exercised sparingly and only when it meets the test of being the minimum necessary for wilderness purposes or the protection of life or property. Such exceptions must be approved by the Superintendent or his/her designee.

The effects of fire on components of desert ecosystems, and the extent and degree of its historic role on biota are not well understood. The National Park Service is assessing and documenting the state of existing fire effects research in desert ecosystems. Over the short term (1–10 years) fire management strategies would be developed based on the best available science, field observations of fire effects and post-burn monitoring of selected sites. In cooperation with other desert parks, other federal and state land managers, and the research staff in the agency or at universities, fire-related research needs would be identified and long-term studies initiated. Specific research topics might include postfire successional trends, or effective postfire rehabilitation strategies.

Based on the results of fire management research, the Park would periodically revise its "Fire Management Plan."

RESEARCH

This alternative is the same as existing management except that congress reinforced the research objective of Death Valley in the California Desert Protection Act, and again in the 1998 National Parks Omnibus Management Act. Title II of that act contains the following:

- A mandate for research;
- Authority to enter into cooperative agreements with colleges and universities for the purpose of conducting multi-disciplinary research;
- Establishment of baseline information enabling the monitoring of long-term trends in the condition of national park system resources.
- An invitation for scientist to conduct approved research within units of the national park system.
- Measures to assure Park managers use research results in Park management.

Scientific research is not new to the Park. The Park would continue to procure the best science to meet its resource protection and management requirements.

INVENTORYING AND MONITORING

Inventorying and monitoring the Park's natural resources are necessary to gain a more complete understanding of their value and condition. The National Park Service would develop and implement a systematic, integrated program to identify, inventory, and monitor the Park's natural resources. The Park would work with academic institutions in retaining and enhancing opportunities for scientific research in undisturbed ecosystems such as the Park's wilderness areas. The Park would consult with people with

expertise in the resource or in developing and implementing an inventorying and monitoring program. A comprehensive strategy would be developed and implemented to ensure that regional, local, or national trends are documented and appropriate actions undertaken.

The Park's existing *Natural and Cultural Resources Management Plan* would be updated to reflect the changes that are proposed in this *Revised Draft Environmental Impact Statement and General Management Plan* for Death Valley National Park. The updated plan would present a detailed program for managing the Park's natural and cultural resources.

CULTURAL RESOURCES

The National Park Service would develop and implement a systematic, integrated program to identify, inventory, monitor, evaluate, and nominate archeological sites, historic properties, cultural landscapes, and ethnographic resources to the national register and would manage, protect, and preserve such listed properties in a way that would preserve their documented archeological, architectural, ethnographic, historic, or research values. A collection management program would be further implemented to: (1) improve storage conditions to meet standards for all Park collections stored; (2) provide a more comprehensive preventive conservation program; (3) acquire museum objects/specimens, including appropriate replacement furnishings for highly impacted objects targeted for exhibit; and (4) improve collection access and use, as appropriate. The collections management program would include cataloging the significant backlog of objects and collections at the Park and correcting the deficiencies identified in the "Checklist for Preservation and Protection of Museum Collections."

The National Park Service would develop and implement a systematic applied cultural resource research program to ensure that (1) there would be adequate baseline information on location, condition, threats, and significance/integrity of resources; (2) interpretation and preservation treatment of resources would be accurate; and (3) appropriate means would be used to manage, protect, preserve, and interpret Native American heritage or other ethnographic resources. The research program would include the following studies:

- archeological studies, including a regionally based archeological research plan, an updated archeological overview and assessment, and completion of archeological identification and evaluation studies
- ethnographic studies, including a cultural sites inventory
- historical studies, including a cultural landscape inventory and cultural landscape report, historic structure reports, an administrative history, and an updated list of classified structures
- an updated scope of collections statement and collection management plan

The Park's resource management plan would address the requirements, projects, and funding to implement the cultural resource program. To support this program, the National Park Service would develop collaborative partnerships with government agencies, tribes, and public and private organizations that have cultural resource management or research capabilities or expertise. These entities could include federal, state, and county agencies, academic institutions, local and regional cultural and historical organizations, and the Timbisha Shoshone Tribe or other Native American tribes having affiliation with lands in the national park. To achieve cultural resource program objectives, under the authority of 36 CFR 1.5, the National Park Service might control or limit human activities in areas designated as culturally sensitive or threatened.

NATIVE AMERICAN INTERESTS

For thousands of years, the Timbisha Shoshone Tribe has lived in and around the area that is now Death Valley National Park. For many years, the Tribe sought to obtain trust land within its aboriginal homeland. In 1994, Congress enacted the California Desert Protection Act, P.L. 103- 433, including Section 705(b) which begins to address the need of the Tribe for a recognized land base. Section 705(b) directs the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha Shoshone Tribe which has no land base at present.

The draft report, "The Timbisha Shoshone Tribal Homeland (1999)," contains the recommendations of the joint Federal-Tribal negotiating team responsible for carrying out the suitability study. The study was conducted on a government-to-government basis with officially designated representatives of the Timbisha Shoshone Tribe and the Department of the Interior. It resulted in a comprehensive integrated plan to establish a permanent Homeland for the Tribe based on an analysis of the suitability of various lands within the tribal ancestral homeland in relation to basic tribal needs and consistency with Federal land management and stewardship mandates.

Among the factors restricting the ability of the negotiating team to identify a single contiguous area suitable for the establishment of a reservation were: natural limitations, including climate, geology, and the availability of water; mining claims; special resource designations such as Wilderness and Area of Critical Environmental Concern; and the availability of infrastructure such as roads, power, and other services.

This draft report concludes that the transfer of several separate parcels of land is needed and recommends transfer of 7,500 acres in trust to the Timbisha Shoshone Tribe. These parcels include 314 acres at Furnace Creek in Death Valley National Park encompassing the present Timbisha Village Site subject to jointly developed land use restrictions designed to ensure compatibility and consistency with tribal and Park values, needs and purposes. Based on the proposed land use restrictions and opportunities for future close collaboration with the Tribe, the National Park Service and the Tribe believe that the transference of Park land described above will enhance the cultural and historical interpretative opportunities available to the visiting public, but will not adversely impact Death Valley National Park. The report also seeks authorization to purchase two parcels of approximately 120 acres of former Indian allotted lands in the Saline Valley, California, at the edge of the Park, and the 2,430 acre Lida Ranch near Lida, Nevada from private owners.

This report also recommends a number of other arrangements authorizing tribal access to and traditional uses of, certain designated areas which will remain in public ownership. One example of the latter type of arrangement is the recommendation to seek designation of an area primarily in the western part of Death Valley National Park as the Timbisha Shoshone Natural and Cultural Preservation Area within which low impact, environmentally sustainable, tribal traditional uses, activities and practices will be authorized subject to existing law and a jointly established management plan agreed upon by the Tribe, the National Park Service and the Bureau of Land Management. The Tribe, the National Park Service, and the Bureau of Land Management see such a designation as a way of recognizing the common interests of the agencies and the Tribe in conserving and protecting this area. Examples of traditional tribal uses, practices and activities include seasonal camping, gathering pinyon nuts and other plants for medicinal purposes, but not the taking of wildlife within the Park.

The proposed legislation will affirm that the continued presence of the Tribe in the Park and in other parts of its ancestral homeland benefits the Park, the Tribe, and the American people.

The potential impacts of the land transfer are analyzed in the *Draft Legislative Environmental Impact Statement, Timbisha Shoshone Homeland* (2000). Any development or resource use activities will be part of future planning efforts and will be subject to appropriate National Environmental Policy Act compliance and public review.

VISITOR USE, SERVICES, AND FACILITIES

INTERPRETATION

The Park interpretive program would integrate in a balanced fashion the geological, cultural, and biological aspects of the Park. Through its primary interpretive themes, programs and interpretive information would concentrate on the harsh environment and the adaptations that all living things must make to survive. The three key subjects to be interpreted would include:

- geological processes and geographical relationships
- the cultural, historical, prehistoric, and Native American record
- desert ecosystems

The Park staff would continue to seek ways to improve the educational outreach program in surrounding communities and develop partnerships with local schools and similar groups. The intent of this program is to increase local community awareness of the Park purpose and resources, and continue to develop favorable partnerships and mutual support.

An "Interpretive Prospectus" (NPS 1990) was completed for Death Valley National Monument in 1990. The prospectus identified interpretive planning and development details appropriate for the monument. The expansion of Death Valley and the designation of large tracts of wilderness have made this plan obsolete. A comprehensive interpretive plan would be developed to replace the prospectus. This plan would reflect the additional Park lands, present individual site plans, and identify other appropriate support documents. It would also address the interpretive needs of Scotty's Castle and its related resources and would identify additional opportunities for visitors to learn more about the castle and its builders. Until the new comprehensive interpretive plan is developed for the entire Park, the current prospectus would direct the methods for interpreting the Park's varied resources.

Cultural resource sites that are easily accessible and historically important would be treated as significant interpretive stops. Access to other cultural resources would be improved only if the historical significance or resource integrity of a site made it worthy of a major interpretive effort and if its integrity was not threatened by an increase in visitation. The Park would increase efforts to inform the public, particularly in backcountry locations, that all historical and archeological objects are protected under federal law.

The Park would continue to seek additional ways to improve the living history program or other methods of interpreting Scotty's Castle.

The interpretation of prehistoric and contemporary Native American cultures would be integrated into parkwide interpretive themes, focusing on human adaptation to the desert environment. Programs, demonstrations, and guided walks would provide opportunities for visitors to understand these cultures. Tribal consultation would take place when planning interpretive opportunities pertaining to indigenous peoples.

To ensure the protection of especially fragile natural and cultural values, resource management specialists, interpretive planners, and designers would work together to develop ways for visitors to see the resources without causing unacceptable damage. The Salt Creek boardwalk is an example of this cooperative effort.

Many sites may contain fragile resources and safety hazards that must be considered when planning for access and interpretation. Measures would also be taken to mitigate any potential effects of increased visitor use. Wayside exhibits or brochures would be used to interpret these areas.

INFORMATION/ORIENTATION

Visitor Contact

Information and interpretive programs would focus on helping people learn about and enjoy the natural and cultural resources of the Park and giving them the opportunity to experience the intangible qualities that make the area unique — the quiet and isolation, the depth of colors, and the clear sky. Interpretative materials would reflect the different ecosystems represented in the Park's boundaries and would be developed at a level appropriate to a recognized need and location.

Providing interpretation and orientation information to visitors before they enter the Park would be emphasized. Visitors could also contact the Park by telephone, mail, internet, satellite information centers, and other means. The Park would continue to support the multiagency information center at Lone Pine, California, which serves visitors accessing Death Valley from the Owens Valley to the west, and the Mojave National Preserve's facility in Baker , California, which assists visitors approaching the Park from the I-15 corridor to the south. These points would provide additional locations for visitors to obtain orientation and interpretation information for the Park and the region prior to their arrival. The objective of supporting these offsite facilities would be to better prepare visitors for their visit to the Park.

Interpretive services would be provided wherever NPS staff could effectively connect with the public to increase their understanding and appreciation of Park resources. Staffed information/fee collection stations would continue to be located in Beatty, Nevada, and at Stovepipe Wells. Additional interpretive staffing and services would be placed at Stovepipe Wells to provide better year-round information to visitors.

Ranger stations at Grapevine, Wildrose, and Shoshone would also provide visitors with information and operate with volunteer staff as available. If visitation increases at these facilities, funding would be sought to increase NPS staff presence at these facilities to meet visitor demand for assistance.

Unstaffed orientation and information stations ("reception centers") would be developed within the Park along the Park's five major entrance roads that receive relatively high levels of traffic. These information stations would be proximal to fee collection stations, where applicable, so that visitors could receive additional information after paying entrance fees. Unstaffed information stations would function to help orient and inform visitors soon after they have crossed the Park boundary, rather than waiting to get information at the more distant developed areas in the Park interior.

Operations at Furnace Creek and Scotty's Castle would continue to provide visitor services such as a staffed visitor information desk, interpretive displays and exhibits, a large auditorium, and sales outlet of the Death Valley Natural History Association. Information on hiking, backcountry historical sites, and other day use activities would be made available at the visitor centers and the reception centers. The number of staffed interpretive programs would be expanded.

The Park would continue to maintain and enhance information on Death Valley via the National Park Service website (www.nps.gov/deva), and would continue to explore new opportunities for information distribution as technology develops. Death Valley is also a partner in a project to provide interagency desert-wide visitor information on the internet at a single site (www.californiadesert.gov).

Visitor support services, such as site bulletins and information/interpretation wayside exhibits would be developed to complement the expanded Park boundaries. Wherever wayside exhibits are inappropriate

and interpretation of resources is desired, brochures, or similar media, would be developed for specific themes or specific areas. They would be provided or offered for sale in appropriate locations.

Over 95% of the Park is designated wilderness and large portions of the Park are only accessible by four-wheel-drive vehicle, bicycle, or on foot. Visitors would explore these areas on their own. In these areas, onsite information/interpretive services would be minimal to non-existent and be restricted to threshold access points with few exceptions.

Waysides and Exhibits

Signs or exhibits would be posted at key road intersections leading to significant features. Distances, road conditions, and destinations or features along the way would be listed. This information would also help prevent people from mistakenly trying a road beyond their automobile's capability or their personal time limits. The Park would evaluate the need for trailhead information waysides that could serve visitors using trails. Design standards for these signs would be established in a Park sign plan.

Basic orientation information would also be made available on a 24-hour basis by using a variety of methods such as lighted exhibits, brochure dispensers, audio, permanent and portable information. Information and interpretive material would be available in other languages to meet the increasing demand. The use of international symbols and graphics would be used as much as possible to avoid multiple languages on displays.

The Park has many secondary entrances that receive moderate to light amounts of highway traffic. These points would be evaluated for the need to place information panels that would serve the same basic function as the information stations, but on a smaller scale. Each location would be evaluated to determine the appropriate information needed at each entrance.

Interpretive wayside exhibits within the Park would continue to be upgraded in accordance with a wayside exhibit plan. Additional wayside exhibits would be developed for key features along heavily traveled corridors in recently acquired lands and elsewhere in the Park if the need to interpret and or protect resources arises. Interpretive waysides would be kept to a minimal level (or number) on backcountry roads.

Partnerships

The National Park Service would continue to cooperate with other agencies and organizations to make information available along approach routes to the Park. Locations for displays and/or free publications outside of the Park would be considered to provide ways to serve people who want advanced information on the Park. Partnerships with communities, businesses and tourism associations may need to be developed to achieve this objective.

The Park would enter into partnerships with other land management units to provide the public with a variety of information on outdoor recreational opportunities within the region.

Partnerships will also be sought to fund various projects or projects within all management divisions in the Park.

VISITOR FACILITIES

All improvements to visitor facilities would be subject to federal requirements to meet accessibility standards for people with disabilities. The Park staff would also consider creative ways to increase the recreational opportunities for visitors with disabilities.

Entrance/Information Facilities

Care would be taken to visually blend these entrance/information stations with their surroundings. Entrance stations are planned for State Highway 190 on the east and west sides of the Park. This will improve visitor information as well as increasing fee revenues. The existing Grapevine Ranger Station would continue as an information station that is staffed as staff and funding allows.

Interpretive Facilities

The Park would continue to operate major visitor centers at Furnace Creek and Scotty's Castle. The largest visitor services complex is centrally located at Furnace Creek and includes a staffed visitor information desk, interpretive displays, a large auditorium, and the Death Valley Natural History Association sales outlet. This facility was completed in 1960 and designed when annual visitation was 250,000. In 1999, visitation was about 1.2 million. Its interpretive media is dated and focuses on the old monument lands. Actions would be taken to update this facility and improve interpretive displays and to expand the number of displays to include information on recently acquired lands. A comprehensive design plan would be prepared to update and improve the Furnace Creek visitor center.

Other structures at Scotty's Castle might be opened for public tours or adapted for other uses if these actions are compatible with recommendations from the historic resource study/historic structure report and the goals of restoring the resource's cultural landscape. Such uses might include exhibit space, audiovisual presentations, or curatorial space. The Park would prepare a study to consider ways to reduce long waits for tours and parking on busy holiday weekends at the Castle. Options might include a reservation system.

Comprehensive design packages for visitor facilities would strive to balance resource protection with visitor access and safety, minimize impacts on sensitive resources, and improve the visual quality of the areas and overall visitor experience. Measures would be taken to mitigate any potential effects of increased visitor use. Locations for such improvements include key attractions such as Badwater or especially sensitive natural and/or cultural resources such as Eureka Dunes and Devils Hole.

Developed Campgrounds

The Park's existing campgrounds would be improved by eliminating safety hazards, better defining and separating sites, improving restrooms, and adding amenities such as newer picnic tables. Camping facilities at higher elevations would be upgraded to enhance summer camping activities. All recreational vehicles (RV) campgrounds would be designed to meet national fire codes, which require 900 square feet per RV site and allow a maximum of 30 recreational vehicles per acre. The Park staff would work to identify issues and concerns related with tent camping and find ways to accommodate all types of campers, including tents, in developed campgrounds, while striving to enhance the visitor experience.

The existing campground at Stovepipe campground would be redesigned.

The Sunset, Texas Spring, and Furnace Creek campgrounds would be extensively redesigned to accommodate average winter demand and improve camping conditions. The total number of campsites at Sunset would be reduced because the campground is rarely used to capacity. Demands for additional camping areas, such as during the 49er Encampment and spring holidays, would be handled at designated overflow areas, which would be closed at other times. The Furnace Creek area development concept plan would incorporate these changes.

RECREATIONAL ACTIVITIES

The Park would support recreational activities that are compatible with management objectives and current visitor needs. It is recognized that recreational trends continue to change and that specific, detailed direction on certain activities needs to be placed under a guiding statement which provides overall direction. NPS Management Policy on Recreational Activities provides guidance for determining the appropriateness of recreational activities in national park units. NPS *Management Policies* (NPS 1988) also states that each unit of the National Park Service has the responsibility to determine which recreational activities are appropriate or inappropriate, based upon the unit's purposes and values (see the purpose and significance statements for Death Valley National Park).

Unless the activity is mandated by statute, the National Park Service would not allow a recreational activity within a Park if it would involve or result in the following:

- inconsistency with the Park's enabling legislation or proclamation, or derogation of the values or purposes for which the Park was established
- unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities
- consumptive use of Park resources (this does not apply to certain traditional activities specifically authorized by NPS general regulations or by law)
- unacceptable impacts on Park resources or natural processes
- unacceptable levels of danger to the welfare or safety of the public, including participants

Day Use Areas

The following areas would remain designated as day use recreation only with no overnight camping

- All paved road areas to 2 miles from the road
- Titus Canyon Road
- West Side Road
- Wildrose Road
- Skidoo Road
- Cottonwood Canyon Road (first 8 miles)
- Racetrack Road (from Teakettle Junction to Homestake Dry Camp)
- Inyo Mine, Lost Burro Mine
- Ubehebe Lead Mine
- The main valley floor from Ashford Mill north to 2 miles north of Stovepipe Wells.

Additional day use areas may be established in the new additions to the Park.

Backcountry and Roadside Camping

Small, primitive campsites may be established in some remote areas of the Park to offer alternative camping experiences including Hidden Valley, Butte Valley, Echo Canyon, the Nevada Triangle, Racetrack Valley, and Johnson Canyon.

If camping in wilderness areas resulted in trampled vegetation or compacted soils over widespread areas, specific campsites would be designated. The current backcountry voluntary permit system would be replaced by a mandatory permit system when and where better resource protection was needed or where visitor use had exceeded the desired future conditions for backcountry visitor experiences and resource conditions. The Park has the authority to limit any activity that is causing resource damage. Where

sensitive areas are noted as receiving or have the potential to receive adverse impacts, designated camping sites may be designated away from the area for that area's protection.

A wilderness/backcountry management plan is currently being prepared by the Park staff. This new plan is necessary because of the broad changes in the amount of area in the Park that is now designated as wilderness. Until the wilderness/backcountry management plan is completed, camping would continue to be directed under existing management. Currently there are over 350 miles of backcountry roads that are open to camping (unless designated closed) with an unknown number of informal campsites. However, use levels at most of these areas is quite light. The Park would evaluate camping in Dedecker Canyon to determine potential and direct impacts upon the local bighorn sheep population and rare plants from visitor activities in the canyon. Park staff would determine whether the canyon or sections of the canyon should be closed to camping to reduce impacts. The Park would also reconsider the issue of allowing limited campfires in the backcountry and wilderness areas during the planning process for the backcountry and wilderness management plans.

An inventory and monitoring program would be established to gather data on backcountry visitor use and related impacts associated with car and other types of camping. Small primitive campsites may be established for car campers and other camps in remote areas of the Park that receive above average use and associated threats to Park resources. The management objective would be to mitigate negative impacts to Park resources, protect human health and safety and provide an alternative camping experience. Improvements would be the minimal tool needed to solve the problem, such as defined tent pads and or anchored picnic tables. This proposal may be considered within the backcountry management plan. If camping in wilderness or other backcountry areas results in destroyed vegetation of other negative impacts to resources or the visitor experience, management actions would be taken to mitigate or eliminate impacts. Management actions may include required camping at designated campsites and or closure of areas to camping.

Backcountry and roadside camping is currently permitted under the following conditions:

- Backcountry camping is allowed 2 miles beyond any developed area, maintained road, or "day use only" area. Other areas may be closed to camping. Visitors should check at the visitor or information centers for current information.
- Vehicle campers shall use pre-existing campsites.
- No camping is allowed in some historic mining districts or on the valley floor from Ashford Mill to 2 miles north of Stovepipe Wells.
- Organized groups with 16 or more people and/or stock animals and 7 or more vehicles need a special use permit.
- The length of stay is limited to 30 cumulative days per year.
- Campfires are currently prohibited outside of designated campgrounds. The proposed backcountry/wilderness management plan will consider where such fires may be permitted under controlled conditions.
- Visitors are not allowed to collect firewood.
- The Park initiated a voluntary backcountry use registration system in 1998 (see alternatives for Saline Valley).

Backcountry Cabins. The current, interim management of backcountry cabins allows visitors to use cabins on a first-come, first-served basis. Visitors are directed to use the cabins in a way that preserves and protects cabins for future use. The length of stay is limited to 30 days. The Park is currently preparing a survey and inventory of cabins in the Park. Results of this survey would be used to prepare further management direction for these cabins based upon their historic significance, condition, and use levels.

When the survey is completed, the results would be interpreted and placed within the wilderness/ backcountry management plan.

NPS Management Policies provide the overall guidance regarding backcountry cabin management:

> "... facilities located in wildernesswill be limited to the types and minimum number essential to meet the minimum requirements for the administration of the wilderness area... "
>
> "The construction or reconstruction of shelters for public use generally will not be allowed, since wilderness users should be self-supporting in terms of shelter. An existing shelter may be maintained only if the facility is necessary to achieve wilderness management objectives or cultural resource protection objectives."

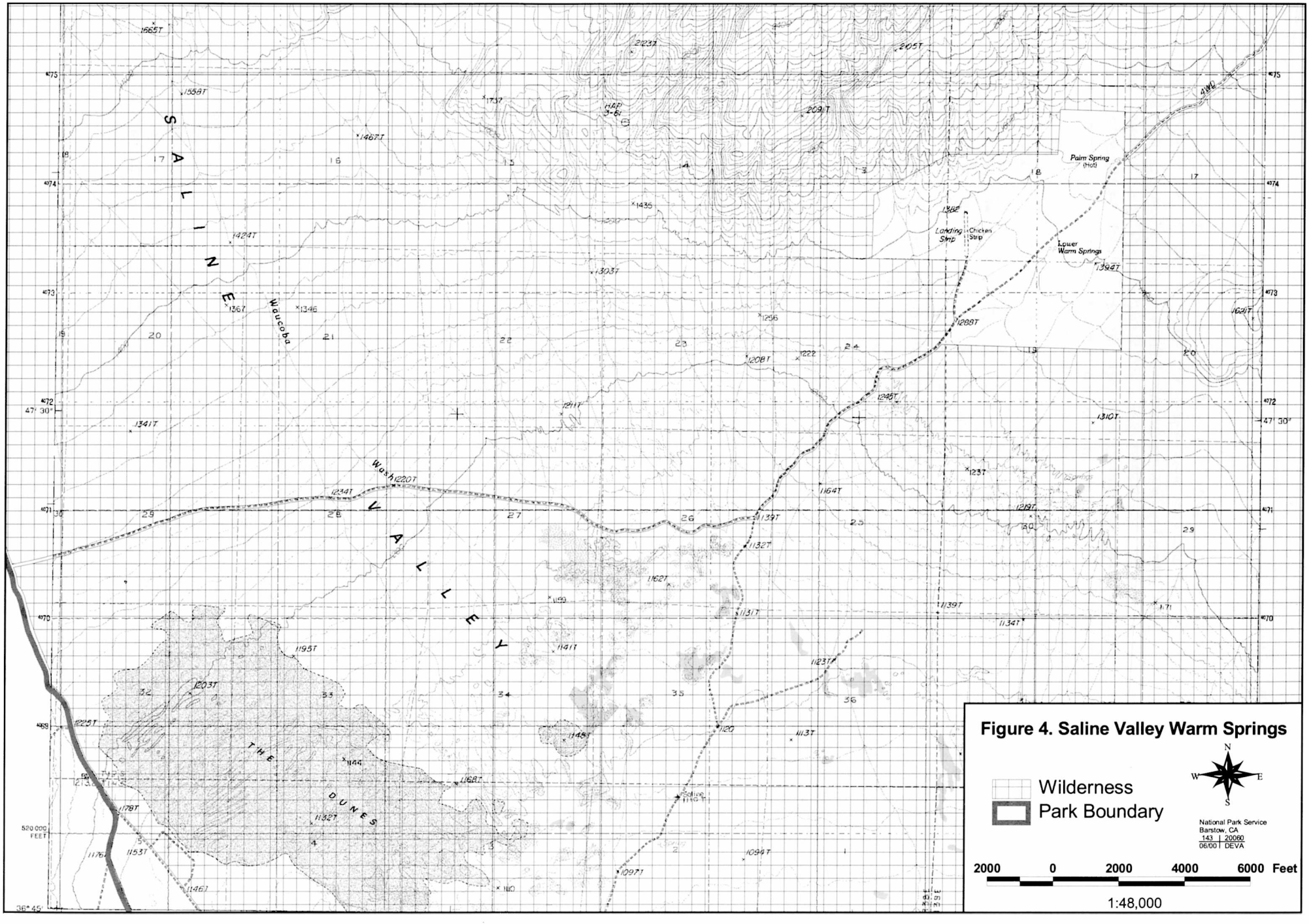
Visitor Use in Saline Valley. A site specific management plan would be prepared in consultation with interested public through the NEPA process. The goal of the plan is to create a strategy for management of the area consistent with NPS mandates and policies. The plan would address protection of natural and cultural resources, exotic species, public health and safety, and environmental restoration, environmental and social carrying capacity of the land, and designation of the site as a backcountry campground and the appropriate number and development of sites. The following would limit the scope of the activities permitted at the springs.

- Soaking tubs/spas would be limited to the current level of improvements.
- The Upper Springs would continue to be protected from human improvements and use and from burros.
- The Saline Valley Road would be maintained to its current surface condition by Inyo County.
- An analysis will be made of the Chicken Strip airstrip to determine whether to retain it under 36CFR or whether it should be closed due to safety and/or resource impact concerns.

The proposed site plan will also consider options for the active restoration of the upper springs to a natural condition.

Depending upon future use levels and priorities, the National Park Service could consider maintaining some of the facilities at the springs.

The National Park Service would work with groups associated with the springs to manage this place in a manner where all members of the public feel welcome. The National Park Service would not actively promote expanded public use of the springs.


SALINE VALLEY
THE DUNES
Wauconda
Wash
Palm Spring (Hot)
Landing Strip
Chicken Strip
Lower Warm Springs
Saline
HAP 5-61
Figure 4. Saline Valley Warm Springs
Wilderness
Park Boundary
N
S
E
W
National Park Service
Barstow, CA
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VISITOR USE FEES

Recreational fees and their use are determined in accordance with the criteria and procedures of the Land and Water Conservation Fund Act of 1965 (sec. 4, 16 U.S.C.A. 4601-6a (Supp., 1974) and section 3, Act of July 11, 1972, 86 Stat. 461), the Recreational Fee Demonstration Program (P.L. 104-134), and regulations in 36 CFR 71. The Park would continue to explore options for fee collection revenues consistent with congressional direction, including collection by third parties.

In April 2000, the National Park Service, in a partnership with the National Park Foundation, announced a new National Parks Pass. A parks pass provides entrance to all national parks for one year at a cost of $50. Parks selling the pass would be allowed to retain $35 for use on projects at that park. These passes are sold at all national parks and over the internet via several retail partners. In Death Valley National Park, entrance fees would continue to be collected at the Furnace Creek visitor center, Beatty, the Grapevine Entrance Station, Stovepipe Wells, and Baker. It is estimated that currently a significant amount of fees go uncollected. The construction of two entrance stations on Highway 190 is being actively planned to facilitate the collection of these fees and to improve visitor information at major entrances.

Nonreacreational fees would be collected for activities such as incidental business use permits, filming, and special park uses. Death Valley National Park has traditionally been an area where many companies come to film commercials and movies. The area receives a significant number of requests from automobile manufacturers to test vehicle-cooling systems. Filming and incidental business permits would continue to be granted on a case-by-case basis. Commercial tour buses are charged an entrance fee based on the seating capacity of the bus.

COMMERCIAL SERVICES

All commercial businesses that operate in the Park are required to obtain a commercial use permit. The National Park Service operates a concession contract providing lodging, a restaurant and bar, gift shops, general store, and gas service at Stovepipe Wells and food service, a gift shop, and gasoline at Scotty's Castle. It is NPS intent to continue these services. Private overnight lodging not overseen by the National Park Service exists at Furnace Creek and Panamint Springs. The National Park Service would continue to work with the private commercial operations at Furnace Creek and Panamint Springs to achieve mutual objectives and resolve potential problems. No duplicative concession services are planned; however, where additional visitor service needs arise, the Park would evaluate concessions as a means to provide such services.

Organized recreational activities, that originate from outside of the Park and for which a fee is charged (such as guided motor coach tours, guided horseback and hiking trips, photography workshops, nature seminars, etc.), are required to obtain an incidental business permit to conduct these activities. The permit is issued by Park staff and defines the terms under which the commercial activities can be conducted within the Park. The fee for this permit includes the direct and indirect costs of administering the permit. (There is currently a new law that shall require parks to issue Commercial Use Authorizations to replace the incidental business permit, but at present has not been instituted.) The Park will evaluate those commercial uses to ensure that the activities are compatible with Park purposes and that they don't detract or destroy the resources for which the Park was established. In some cases the Park may limit the number of commercial activities or operators if the Park Superintendent determines that Park values or resources are diminished or the Park visitor experience is compromised or intruded upon.

As the local and regional populations near Death Valley National Park increase, and if national and international visitation continue to increase throughout the year, the Park can expect more recreational activities to occur of a commercial nature or origin from outside of the Park. These activities may began to

occur throughout the entire Park area and not just in the major tourist corridor of Highway 190 and the Furnace Creek area as currently exists. This may be especially true of the types of activities that originate from the Las Vegas, Nevada area as those visitors are looking for other recreational opportunities that exist beyond the city. The Park will be required to evaluate the types and numbers of these activities and shall issue no more commercial use authorizations "than are consistent with the preservation and proper management of Park resources and values."

GENERAL DEVELOPMENT CONCEPTS

A development concept plan is an intermediate plan between a general management plan and a specific design with construction drawings. These plans are applied to situations where there is a need to plan for visitor, or other administrative facilities. The process involves an analysis of human activities, natural systems, cultural features, and management objectives for a specific geographic area. Recommendations are then made on appropriate activities and the areas in which they should take place and on what facilities would be needed to support the desired end results. Development concept plans would be prepared for the following areas:

SCOTTY'S CASTLE

A historic resources study, cultural landscape report, and historic structure reports would be prepared to help determine the appropriate uses of the historic structures and the appropriate manipulation of the environment. Upon completion of these reports, a development concept plan would be prepared to establish various facility requirements, the appropriateness of relocating maintenance and curatorial functions, visitor circulation patterns, staffing levels, and the location of employee housing. The concessions program at Scotty's Castle will be retained for the foreseeable future.

FURNACE CREEK AND COW CREEK

A development concept plan would be prepared for administrative and visitor facilities at Furnace Creek and administrative facilities at Cow Creek. Presently the administrative facilities are inadequate. Planning for both areas would be guided by the desire to limit the growth of development and the related demand on Park resources such as water and land. This could be done by relocating some administrative activities that do not need to be within the Park to areas outside of the Park into adjacent communities or through conservation methods.

GRAPEVINE

A development concept plan is underway. The purpose of this plan would be to remove unsightly and inadequate NPS housing and maintenance facilities from a public use area, to consolidate certain functions, provide more adequate housing for Park and concession employees, assure appropriate visitor services, visitor information, safety, and resource protection.

Employee trailer housing would be replaced and temporary facilities would be eliminated. Some National Park Service and concessioner employees now residing at Scotty's Castle might be relocated to Grapevine or another location. A small community building and recreation facilities may be provided. Some maintenance functions could be relocated from Scotty's Castle, and the museum-quality items now stored in various buildings at the castle might be moved into a climate-controlled structure at Grapevine or another location to ensure their appropriate storage (if appropriate space could not be found at the Castle or other locations).

Water and power may be limiting factors in the development of housing and maintenance areas at Grapevine. Further studies would determine if it would be feasible to utilize water in the area. All feasible alternatives would be explored in preparing the development concept plan. Some facilities may be relocated outside the Park.

STOVEPIPE WELLS

Stovepipe Wells would be renovated in accordance with a site management plan. The concessions program at Stovepipe Wells will be retained for the foreseeable future.

- The existing campground would be redesigned.
- The ultimate number of RV hookup campsites at Stovepipe Wells will be determined as a part of the site plan.
- A paved section of the existing airstrip would be converted for helicopter use. The remainder of the airstrip would be converted to a gravel strip and not be used as an overflow camping area.
- Landscaping would utilize native species and would depend on water availability.

WILDROSE

A site plan will be developed for the Wildrose area to determine the future direction of the facilities and use of the area. This may include appropriate use by the Timbisha Shoshone Tribe in accordance with a jointly developed memorandum of understanding between the Tribe and the Park.

ROADS AND CIRCULATION

ROADS

The current road management plan for the Park would be reevaluated because of changes in visitor use patterns, the addition of more roads from Park expansion, and a need to readjust maintenance priorities in reaction to funding levels. The plan would determine such things as the status of duplicate road sections, road surface conditions, and the level of maintenance. An increasing number of buses are entering the Park, resulting in changing visitor use patterns on roads and elsewhere. The management philosophy would be to protect cultural and natural resources, enhance the visitor experience while providing for safe and efficient accommodation of Park visitors. It also would include the need to provide a road system that allows for a variety of driving experiences that are consistent with the purpose and significance statements of the Park. It is very unlikely that new roads would be created in the future unless there is strong justification to do so.

The practice of not performing routine maintenance on high clearance and four-wheel drive backcountry roads would continue. However, emergency repairs might be undertaken following flash floods. Vehicle use in the Park would be limited to street legal vehicles. No offroad driving would be permitted.

A review of the alignment of Highway 190 at Stovepipe Wells would be requested from Caltrans. The intent of this action is to decrease the potential for pedestrian/vehicle accidents near the gas station.

TRAILS

Trails would be managed the same way as described in existing management. A Panamint Crest trail will not be developed. Trailhead orientation signs will be installed where appropriate to aid in visitor safety and resource protection.

SIGNS

Signs would be managed the same way as described in existing management.

ADMINISTRATIVE OPERATIONS AND FACILITIES

PARK ADMINISTRATION

Administrative headquarters for the Park are currently located at Furnace Creek. The NPS structures there were built in the 1960s and are inadequate for existing staff or storage needs. Several historic Civilian Conservation Corps-era adobe structures at Cow Creek provide limited additional space for offices. Water is a critical limiting factor in the Furnace Creek area. The Park also maintains satellite field offices at Scotty's Castle and Stovepipe Wells . Currently, there are Park operations offices located outside the Park at Beatty, Shoshone, and Owens Valley.

Approximately 70% of the Park maintenance staff are located at Cow Creek, with an additional 23% at Scotty's Castle. Four staff positions are located at Stovepipe Wells . The maintenance staff are currently responsible for over 50 visitor service and administrative buildings, 9 campgrounds, 293 miles of paved roads, more than 300 miles of dirt roads, between 100–200 miles of maintained dirt roads, 10 miles of service roads, about 91 housing units, and 8 water systems.

The Park will make an effort to replaced nonnative plants and landscapes with native plants and landscapes around administrative and visitor facilities where appropriate for interpretive, aesthetic, water conservation and other management purposes. Efforts will be made to reduce the number of exotic plants such as athel tamarisk, oleander, and palms.

EMPLOYEE HOUSING

The majority of the Park staff live at the Cow Creek housing area. As of 1998, there are about 60 housing units and 37 transient trailer/RV sites at this location. California Department of Transportation, California Highway Patrol, elementary school employees, and the Natural History Association director occupy nine additional units constructed and maintained by them. Additional housing is provided at the following areas of the Park:

- Stovepipe Wells — 7 units plus 6 transient trailer/RV sites
- Wildrose Canyon — 3 units
- Grapevine — 16 units plus 2 transient trailer/RV sites
- Scotty's Castle — 5 units

The Grapevine/Scotty's Castle area has a severe housing shortage, resulting in several staff members commuting from Cow Creek. The development concept plan underway for the Grapevine area would recommend providing housing and replacing the existing trailers for the northern district of the Park. Ongoing trailer replacement with permanent houses would continue.

Permanently placed trailers will never again be allowed at any NPS housing facility where they currently do not exist. Once the trailers at Grapevine are replaced, this policy will be extended to that location. Transient trailers and RVs are allowed in designated NPS areas, but not permanently placed trailers.

Prior to constructing additional housing for employees, the Park would evaluate the location of the housing and make a determination about whether private housing elsewhere within a one hour drive could

serve the same need, and whether the total housing units are the minimum necessary to meet the mission of the Park.

SOLID WASTE DISPOSAL

The Park landfill near Furnace Creek has been closed to further use and current law and regulations prohibit landfills in parks. Solid waste disposal would continue to be hauled to approved landfills outside the Park.

LANDOWNERSHIP AND USE

PARK BOUNDARY AND AUTHORIZED ACREAGE

No changes in the boundary of the Park are proposed. Clerical or drafting corrections may be made to the maps and legal descriptions. During the prolonged debate over the expansion of the Death Valley National Monument and the creation of the Park by the California Desert Protection Act, the boundaries were subjected to considerable scrutiny and public debate. The National Park Service believes a comprehensive examination of potential boundary modifications at this time is unwarranted. The boundary map submitted to Congress in August 1996 reflects an accurate total acreage of 3,396,172 acres for Death Valley National Park.

The National Park Service intends to locate some facilities outside the Park, consistent with the existing management direction and actions proposed in this plan. This would include, but would not be limited to, visitor facilities in Beatty, Baker, and Lone Pine, as well as possibly other communities. It also includes the potential establishment of a satellite office in or around areas east of the Park to provide office space for some employees.

WILDERNESS

In 1994, Congress enacted the California Desert Protection Act, which designated 3,158,038 acres of Death Valley National Park (95% of the Park) as wilderness.

In 1964 Congress enacted the Wilderness Act, which [sec.2.(c)] defined wilderness as:

> A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, educational, scenic, or historical value (16 U.S.C. 1131).

The Wilderness Act (section 4(c)) specifically prohibits the following activities in wilderness: commercial enterprises, permanent roads, temporary roads, use of motor vehicles, use of motorized equipment, use of motorboats, landing of aircraft, mechanical transportation, and structures or installations. Wilderness designation does not mean that existing structures within those areas have to be removed. If consideration is given to removing them, that action is covered by the same policies, regulations, and guidelines, and is subject to the same review and compliance procedures, as are historical structures in non-wilderness areas.

The Wilderness Act (section 5(a) and (b)) provides a right of access to parties recognizably vested in lands within BLM or U.S. Forest Service wilderness boundaries (sections 5 (a) and (b), are not applicable to NPS wilderness) including private landowners, state-owned lands, and valid mining rights and occupancies. These sections provide those owners of nonfederal lands or interests in lands may have a right to traverse wilderness to access these lands. Ranchers (on NPS grazing allotments) would normally be required to access wilderness on foot or horseback, similar to other users. However, certain situations may exist where motorized access is necessary to maintain range developments. These types of access could be considered under section 708 of the California Desert Protection Act that provides for adequate access and reasonable use and enjoyment to owners of nonfederal lands or interests that lie in wilderness. A minimum tool determination would be used prior to granting approval for motorized/mechanical equipment use within wilderness.

Congressional action is needed for any boundary changes to designated wilderness areas.

The California Desert Protection Act modifies some provisions of the Wilderness Act. The following are the key provisions of the act related to wilderness:

- Native Americans may gain access to sacred sites in NPS or BLM wilderness, but such access must be consistent with the Wilderness Act [sec. 705.(a)].
- Federal reserved water rights are explicitly reserved for BLM and NPS wilderness [sec. 706(a)].
- Inholders have rights of adequate access for reasonable use and enjoyment in units of the national park system, including NPS wilderness and BLM wilderness [sec 708].

For each non-emergency entry, the grazing allottee may enter Park wilderness, under certain conditions, with a motorized/mechanized vehicle or use motorized equipment with permission from the Superintendent. Emergency entry (imminent danger of loss of livestock, severe facility damage, an injured person requiring transport, or a life-threatening situation) with a motorized/mechanized vehicle and/or requiring the use of motorized equipment must be reported before or just after it occurs. Although over 95% of Death Valley is designated as wilderness, about 700 miles of roads (paved and dirt) remain open within this Park (Rothfuss 1996).

The National Park Service would manage wilderness areas for the use and enjoyment of the American people in a way that would leave them unimpaired for future use and enjoyment as wilderness. Management would include the maximum statutory protection allowed for these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. Public use of wilderness may include recreation, scenic preservation, scientific study, education, conservation, historical use, and solitude. A separate wilderness/backcountry plan (in progress) would address specific management actions.

The Wilderness Act generally prohibits motorized equipment or mechanized transport in designated wilderness areas; however, it allows them "as necessary to meet minimum requirements for the administration of the area for the purpose of this Act." The Superintendent would administer wilderness lands in the Park with the minimum disturbance to the area or its resources. All decisions pertaining to administrative practices and use of equipment in wilderness would be based on this concept. Potential disruption of wilderness character and resources and applicable safety concerns would be considered before, and given significantly more weight than, economic efficiency. If some activities must occur in wilderness, only those actions that would have acceptable impacts would be acceptable.

The Park will use the "minimum tool" concept when proposing to control exotic vegetation within a wilderness area.

The process of delineating final wilderness boundaries for the Park is provided in title VI of the California Desert Protection Act. This process of determining and mapping the S-21 wilderness boundaries is still underway. The wilderness boundaries in Figure 3 reflect the preliminary interpretation; however, the legal descriptions have not yet been prepared. Once completed, final wilderness boundary maps would be submitted to Congress. It is assumed that the actual wilderness acreage may deviate from the approximate acreage of 3,158,038 acres estimated in section 601 of the act.

The California Desert Protection Act (sec. 601b) provides for an additional 6,840 acres of the Park to become wilderness automatically upon cessation of all uses prohibited by the Wilderness Act and publication of such notice in the *Federal Register* by the Secretary of the Interior. This area is the powerline corridor from Furnace Creek to Stovepipe Wells as depicted in the *1989 Draft General Management Plan*.

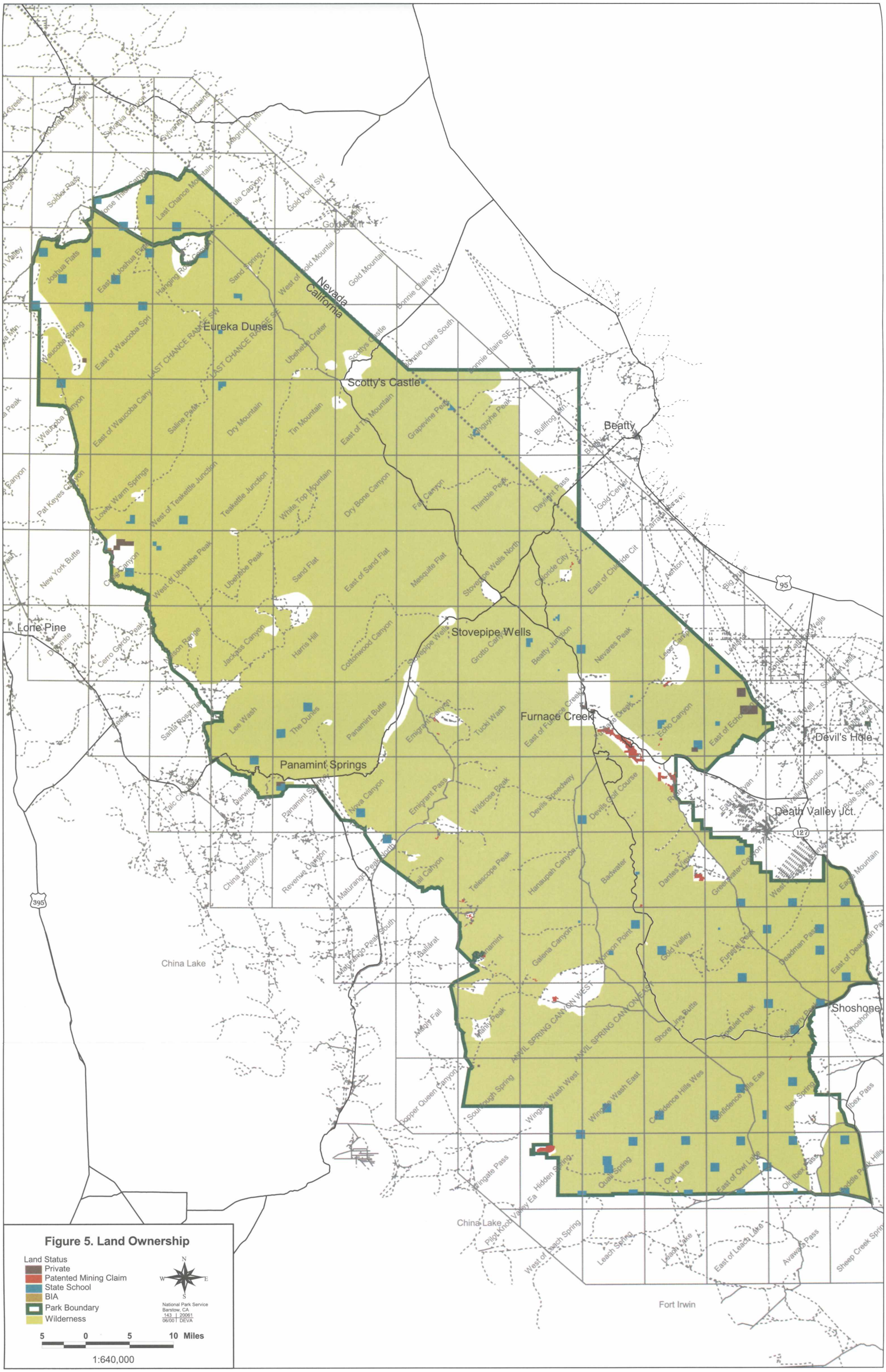
The NPS wilderness management policies are based on statutory provisions of the 1916 NPS Organic Act, the 1964 Wilderness Act and the California Desert Protection Act. In addition the Park uses the "Principles for Wilderness Management in the California Desert" for reference. These reference materials were developed in 1995 by the federal managers of the Mojave Desert for informational purposes. The managers represented the Bureau of Land Management (California Desert and Yuma Districts), the National Park Service (Death Valley and Joshua Tree National Parks and Mojave National Preserve), and the U.S. Fish and Wildlife Service (California State Supervisor). The Park staff will work with surrounding agencies to provide the maximum consistency in desert wilderness management.

LAND ACQUISITION

The National Park Service is required by the USDI policy to prepare a land protection plan for every NPS unit that has nonfederal lands or interests in its authorized boundary. The "Land Protection Plan" for Death Valley is included in this document (see appendix B). Detailed descriptions of the nonfederal lands and interests are also included. The National Park Service would seek funds to acquire the majority of private lands and interests in the Park based on priorities presented in the "Land Protection Plan." Private land at Furnace Creek and Panamint Springs would be acquired if requested by the owners. Private land in wilderness, habitat for threatened or endangered species, and riparian areas would be considered high priority for purchase. Donations and exchanges of real property from willing sellers would be a priority, and third party acquisitions from willing sellers would be encouraged. Exchange of state school sections in the new lands would continue to be actively exchanged pursuant to the California Desert Protection Act direction.

MINERAL DEVELOPMENT ACTIVITIES

The Park would administer mineral development activities under existing laws and regulations applicable to such activities. This action is the same as the existing management alternative. Please refer to that alternative for a complete description.

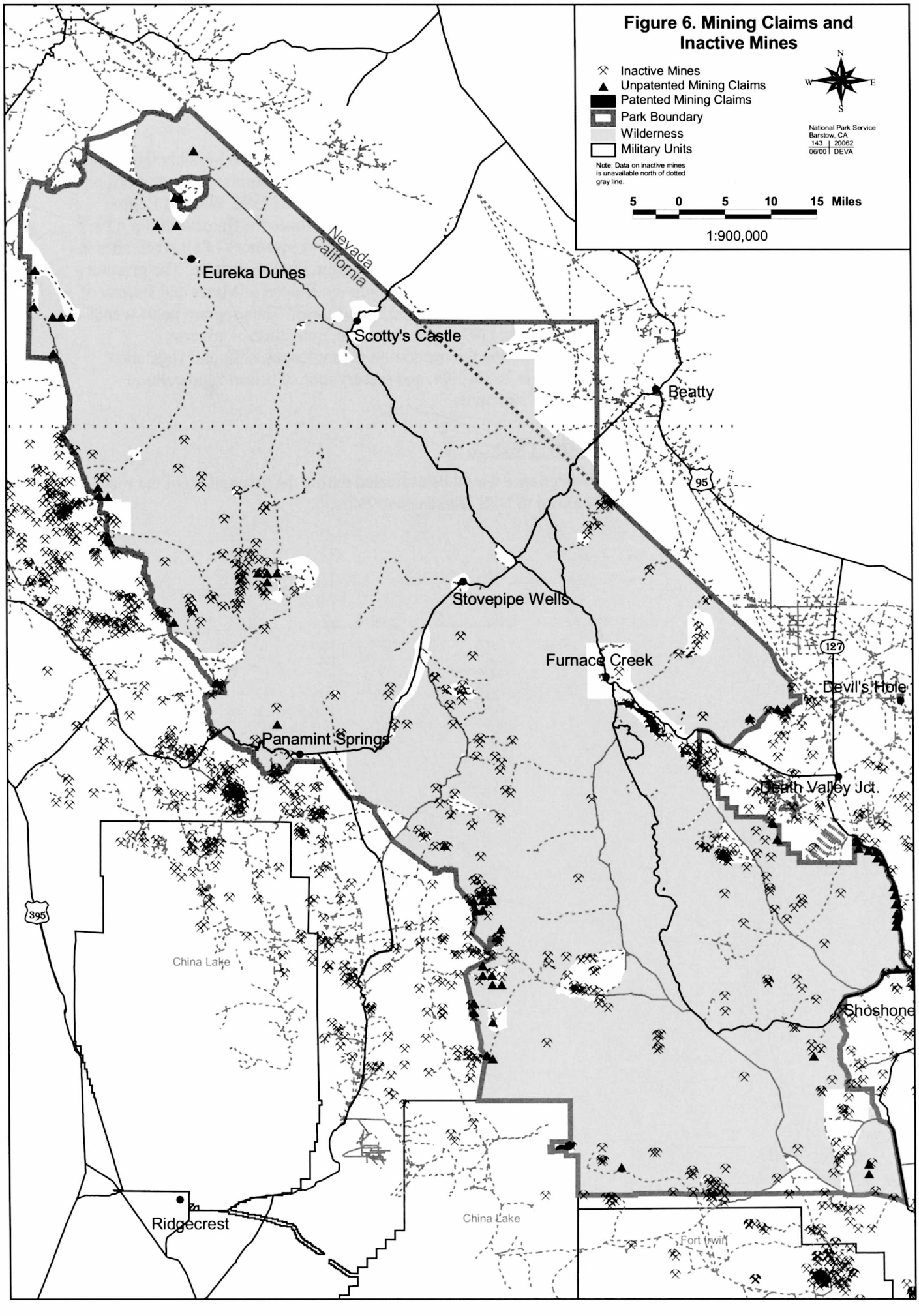

Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
Stovepipe Wells
Furnace Creek
Panamint Springs
Lone Pine
China Lake
Death Valley Jct.
Devil's Hole
Shoshone
Fort Irwin
95
395
127
Figure 5. Land Ownership
Land Status
Private
Patented Mining Claim
State School
BIA
Park Boundary
Wilderness
N
W
E
S
National Park Service
Barstow, CA
143 | 20061
06/00 | DEVA
5 0 5 10 Miles
1:640,000

ABANDONED MINES

The legacy of past mining in the Park has left hundreds of abandoned mine sites with possibly thousands of mine openings and workings. Experience in the old monument lands and preliminary observations on the new lands indicate the problem is a significant land management issue. The 1992 Western Region Directive WR-085, Management of Abandoned Mineral Lands (AML) outlines the framework for a Park AML program. The National Park Service would conduct a comprehensive inventory of all AML sites in the Park to serve as the basis for future planning and reclamation program implementation. The inventory would build upon existing information from the U.S. Geological Survey, Bureau of Mines and Bureau of Land Management databases, as well as previous data collected by Park staff. The program goals would include elimination of physical safety hazards and hazardous materials; mitigation of adverse environmental impacts to Park resources, including the restoration of landscapes, soils and vegetation; protection of important wildlife habitat such as bat habitat; and preservation of historic and cultural resources which may include stabilization of structures.

SAND AND GRAVEL FOR ROAD MAINTENANCE

The use of borrow sources for road maintenance would be evaluated during the preparation of the road management plan. Such use would conform to NPS *Management Policies.*


Figure 6. Mining Claims and Inactive Mines
Inactive Mines
Unpatented Mining Claims
Patented Mining Claims
Park Boundary
Wilderness
Military Units
Note: Data on inactive mines is unavailable north of dotted gray line.
N
W
E
S
National Park Service
Barstow, CA
143 | 20062
06/00 | DEVA
5 0 5 10 15 Miles
1:900,000
Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Stovepipe Wells
Furnace Creek
127
Devil's Hole
Panamint Springs
Death Valley Jct.
395
China Lake
Shoshone
Ridgecrest
China Lake
Fort Irwin

CATTLE GRAZING

No grazing is permitted on the former monument lands. As authorized by the California Desert Protection Act of 1994, the privilege of cattle grazing within the Park shall continue at no more than the October 31, 1994 level and is subject to applicable NPS regulations, policies, and Park management direction.

The animal unit months (AUMs) for each grazing permit (Figure 6) in Death Valley National Park at the time of the signing of the California Desert Protection Act (1994) were:

	AUMs
Hunter Mountain	1,105
Last Chance	1,628
Eureka Valley	0
Lacey-Cactus-McCloud	0

No grazing would be permitted on the NPS portions of the Eureka Valley or Lacey-Cactus-McCloud BLM allotments. No permit has been issued on the Last Chance allotment since 1996 due to the lack of forage. The NPS considers this area of the Park to be permanently retired from grazing. The NPS would work with the permittee on the Hunter Mountain allotment to develop grazing practices and levels, not to exceed 1,105 AUMs through development of a grazing management plan. This area has a defined season of use from November 20 to June 30.

The AUMs as of the date of the current planning effort (2000) within Death Valley National Park is:

	AUMs
Hunter Mountain	1,105
Last Chance	0
Eureka Valley	0
Lacey-Cactus-McCloud	0

The California Desert Protection Act directs the Secretary of the Interior to make the acquisition of "base property" from willing sellers a priority above all other acquisitions in the Park. Death Valley's management goal is to achieve the permanent retirement of grazing. If ranchers notify the Superintendent of their willingness to sell base property, the Superintendent would immediately notify the Secretary of the Interior of the priority acquisition and request Land and Water Conservation funding from Congress. The Park would also work with conservation organizations to purchase grazing permits from willing sellers. Once a grazing permit was purchased and the new owners (i.e. conservation organizations) request retirement, it would be permanently retired. Also, if an allotment were placed in a nonuse status, after a period of five years, it would be permanently retired.

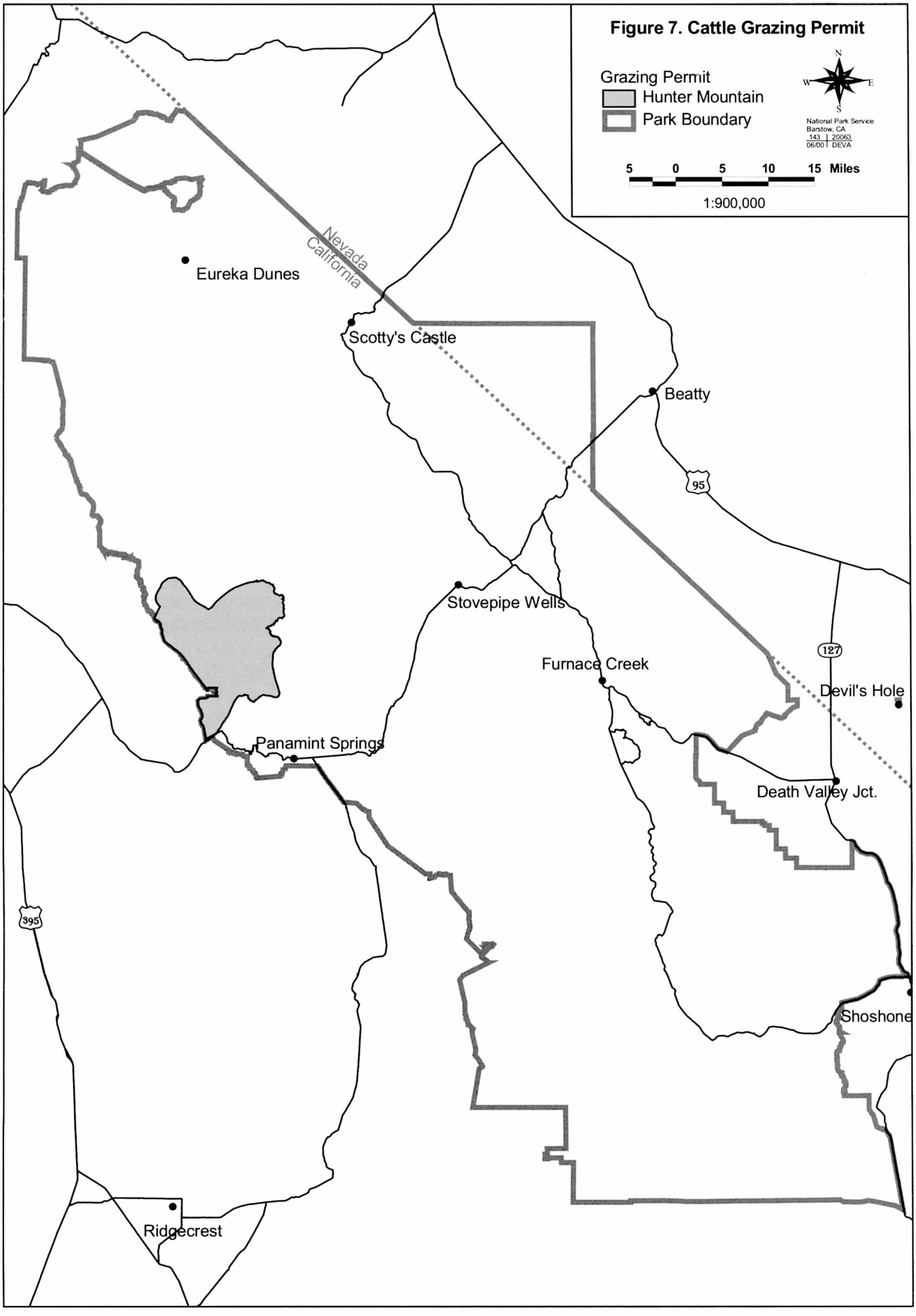
Where permits are acquired or retired, ranch developments could eventually be removed and site restoration undertaken.

The NPS grazing management plan would evaluate all significant resources the permit area. Those resources would include sensitive plants, habitats, other unusual plant assemblages, sensitive animals, and cultural resources. The plan would include how many cattle and the time and place where these cattle would be allowed to graze, seasonal restrictions, the placement/movement of mineral blocks and water facilities as a tool to alter cattle use patterns, pasture rotation, etc. The plan would also establish a monitoring protocol to allow frequent evaluations of the Park resources to evaluate efficacy of the management practices. Management changes would be made accordingly.

Fees would be based on BLM schedules and NPS Special Use Permit costs. Grazing fees would be used for Park resource management and restoration projects. Restrictions on grazing use would be based on resource conditions, visitor safety and wilderness values. The Superintendent has the discretion to lower grazing use levels, as necessary to respond to resource protection needs, visitor safety, or wilderness values. Use levels would be based, in the interim, on existing permit plans, and if changed, would be based on scientific data, and on water, forage, protection of threatened and endangered species, riparian areas, water availability, and soils.

In regard to access, ranchers would normally be required to access wilderness on foot or horseback, similar to other users. However, certain situations may exist where motorized access is necessary to maintain range developments. These types of access could be considered under section 708 of the California Desert Protection Act that provides for adequate access and reasonable use and enjoyment to owners of nonfederal lands or interests that lie in wilderness. A minimum tool determination would be used prior to granting approval for motorized/ mechanical equipment use within wilderness. Death Valley National Park would follow the Wilderness Act and the California Desert Protection act in the administration of the Park's wilderness areas.

Permit area fences would be inspected to ensure they provide for movement of wildlife. In cases where movements may be impeded modifications would be required.


Figure 7. Cattle Grazing Permit
Grazing Permit
Hunter Mountain
Park Boundary
N
W
E
S
National Park Service
Barstow, CA
143 | 20063
06/00 | DEVA
5 0 5 10 15 Miles
1:900,000
Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Stovepipe Wells
Furnace Creek
127
Devil's Hole
Panamint Springs
Death Valley Jct.
395
Shoshone
Ridgecrest

If the grazing permittee seek to acquire new water rights for the permit area, NPS *Management Policies* require that all rights to the use of water diverted to or used on federal lands within national parks would be perfected in the name of the United States.

Under this proposed action three of four permits have been permanently retired. The National Park Service will allow cattle grazing of 1,105 animal unit months on the Hunter Mountain permit area and until such time as all grazing is retired, subject to the considerations indicated above.

PLAN IMPLEMENTATION

OPERATIONAL COSTS

The existing Park operating base in FY 00 is $5.4 million and existing staffing is 108. In order to fully implement the proposed action over the 15-year life of the plan, and assuming that above proposed activities are undertaken and visitor use of the Park increases, an additional 37 staff would be needed. This would require approximately $1.7 million per year added to the Park's operating base to cover salaries, benefits, and administrative expenses (space, utilities, vehicles, etc.).

The estimated costs of acquiring private lands and mining claims under this alternative are not yet available. No comprehensive evaluation of land acquisition costs has been undertaken in accordance with NPS policy and therefore cannot be estimated at this time. The cost of acquiring property involves title searches, appraisals, relocation costs, and fair market value of the property. These specific costs would be available only on a property by property basis and would need to be determined based on current market values. An approved cost estimate for the land protection alternative selected would be prepared at a later date by the Washington office.

TABLE 3: PROPOSED ACTION COST SUMMARY

Proposed Activity	Gross Construction Costs	Pre-Design Costs & Supplemental Services	Design Costs	Total Project Costs	Phase
Remove feral burros (approx. 400 animals @ $1000/burro); fencing approx. 50 miles; census every 3-5 years @ $40,000/census	N/A	N/A	N/A	$400,000; $1,800,000; $40,000	I
Site improvements at multiple sites to protect resources (fences, boardwalks, wayside exhibits, vault toilets)	$1,060,000	$60,000	$90,000	$1,210,000	I
New wayside exhibits (total project cost)	N/A	N/A	N/A	$200,000	I
Furnace Creek visitor center rehabilitation	$4,720,000	$280,000	$400,000	$5,400,000	I
Construct office space in Beatty for 12-15 employees	$350,000	$25,000	$35,000	$410,000	I
New displays for information stations at Stovepipe/Beatty/Shoshone	$175,000	$10,000	$15,000	$200,000	I
Entrance stations & reception centers (displays, parking, kiosks, walkways) on east and west 190	N/A	N/A	N/A	$200,000	I
Campground redesign and improvements (Sunset, Furnace Creek, Texas)	$944,000	$56,000	$80,000	$1,080,000	I
Saline Valley Site Management Plan (planning and compliance)	N/A	N/A	N/A	$200,000	I
Grapevine Development Concept Plan (housing, roads, community center, RV pads, maintenance and curation buildings, water/sewer system)	$5,900,000	$350,000	$500,000	$6,750,000	II
Scotty's Castle historic studies and landscape reports; development concept plan	N/A	N/A	N/A	$500,000	I

Proposed Activity	Gross Construction Costs	Pre-Design Costs & Supplemental Services	Design Costs	Total Project Costs	Phase
Stovepipe Development Concept Plan (convert paved airstrip to gravel, redesign old campground, landscape)	$472,000	$28,000	$40,000	$540,000	I
Furnace Creek & Cow Creek Development Concept Plan (planning and compliance)	N/A	N/A	N/A	$300,000	II
Wildrose Development Concept Plan (planning and compliance)	N/A	N/A	N/A	$250,000	I
Backcountry campsite improvements (fire rings, tables)	$130,000	$8,000	$11,000	$149,000	II
Restoration of abandoned mine sites (estimated 300 sites at $15,000 each)	$5,310,000	$315,000	$450,000	$6,075,000	III
TOTALS	**$19,063,000**	**$1,132,000**	**$1,621,000**	**$25,704,000**	

PHASES

I	1-5 years
II	6-10 years
III	spread evenly over 15 years

Construction and planning cost estimates provided in the above table are conceptual estimates only. These are costs of similar types of facilities and past NPS experience derived from contract data. The estimates include indirect costs added to cover such things as design services, contract supervision, and contingencies. They also take into account the cost of contracting for such services in a remote Park setting, seasonal constraints, labor availability, and wage rates. The costs are based on 2000 values.

ALTERNATIVE 2: EXISTING MANAGEMENT (NO-ACTION)

GENERAL DESCRIPTION

This alternative describes the existing management approach that the National Park Service has been following for the management of Death Valley National Park. These actions are typically referred to as the "status quo" or no-action alternative. Death Valley National Monument operated under a *General Management Plan* that was approved in 1989 and other site-specific planning including the *1983 Resource Management Plan*. Management actions described under alternative 2 would include only those activities that have been or are actually being implemented. New Park lands added to the unit in 1994 would continue to be managed under NPS policy and regulations and an interim operations strategy. Where specific management direction is lacking in the existing *General Management Plan*, Park staff would follow guidance found in regulations, the NPS *Management Policies* (1988) and NPS guidelines.

NATURAL RESOURCES

PHYSICAL ENVIRONMENT

Death Valley National Park currently manages air quality, viewsheds, night sky, noise and overflights, geological resources, and cave resources under the policies addressed in alternative 1 and would continue to manage these resources under this strategy.

Water Resources

Water rights. State records have been searched to identify outstanding water rights.

Water Use. Same as alternative 1.

Water Developments. Maintenance of existing livestock tanks and troughs would continue to be allowed with the Superintendent's permission as long as negative impacts to Park resources don't occur. Motorized access within wilderness areas for the purpose of guzzler maintenance or filling shall be reviewed on a case-by-case basis.

Paleontological Resources

The Park, in cooperation with researchers, would continue to identify paleontological resources in the Park. Most scientific research would be conducted by entities other than the National Park Service. A paleontological comprehensive report or database would not be a priority under this alternative. Resource protection would continue to consist of random patrols of the backcountry as well as limited public closures to protect sensitive sites.

BIOLOGICAL ENVIRONMENT

Sensitive Species

The National Park Service would expand its baseline data on species of special concern (see appendix C) by continuing to gather information on the distribution, abundance, and threats for these species through cooperative efforts with universities. All compliance actions in the Park would consider the actions' impacts on those species. Steps would be taken to protect habitat to ensure the preservation of sensitive species.

Listed and special status species and their habitats would continue to be considered during the permitting process for all compliance activities in the Park. Where impacts were predicted, mitigation measures would be applied or the permit would not be approved.

NPS Activities at Devils Hole

Activities involve biannual pupfish counts, servicing of water monitoring equipment, and intermittent inventory/research activities. Each of these activities is designed to monitor the long-term status of the pupfish or its habitat.

Devils Hole pupfish counts will be conducted on a biannual basis. These counts will be scheduled for the spring and fall of each calendar year. The spring count is typically conducted in March or April, and the fall count is conducted in September or October. During a given census day, a morning and an afternoon count will be made at Devils Hole.

The water level monitoring program utilizes different types of equipment that store digital and hard copy formats of information. Operation and maintenance of the facility consists of bi-monthly inspections, monthly data retrieval, and periodic/annual maintenance. The bi-monthly inspections provide assurance of the correct equipment alignment with the staff gauges, data acquisition, equipment operation, equipment damage or misalignment resulting from seismic induced water level surges, and evidence of any vandalism to the site. Hydrologic field technicians also inspect, service, and replace equipment at Devils Hole three to five times per year.

Because Devils Hole possesses unique geologic and hydrologic characteristics, Park staff expect that a variety of research and/or inventory projects will be proposed at Devils Hole over the next several years. Many of these projects will be designed to provide baseline and research documentation of the hydrologic aspects and physical components of the pool. These studies may include but not be limited to measurements that involve dissolved oxygen content and distribution, existence and physical parameters of convection currents, water chemistry parameters, dimensions of the subterranean extent of the cavern, etc. Some of the proposed studies may also relate to biological components in the aquatic system.

Introduced Species

The Park's management goal is to minimize the existence of exotic species within the Park. New exotic species would not be introduced without the Superintendent's permission. Threatening nonnative species would be controlled or eradicated where possible.

Burros. The management of burros in the former monument would be to continue implementing the last phase of a three-phased program described under alternative 1. The National Park Service has agreed not to shoot burros as long as an animal protection group is successfully removing burros from the old monument lands at their expense.

On new lands added to Park in 1994, the Park has entered into an interim agreement with the Bureau of Land Management to manage the area at previous BLM herd management levels (297 burros and 9 horses). The existing population is estimated to be about 250–350 burros and 12 horses.

Nonnative Vegetation. As in Alternative 1 the control of invasive exotics such as tamarisk, Russian thistle, and hornwort would continue.

Disturbed Land Restoration

Disturbed lands would be managed in the same way as described in alternative 1. Natural ecosystems would be perpetuated. Natural landscapes could be manipulated to encourage the growth of native or

historically correct species. Disturbance caused by natural causes (e.g., landslides, natural fire) would not be modified unless conditions presented safety or resource protection concerns. Cultural zones like Scotty's Castle would be managed as a historic landscape. The rehabilitation of abandoned mine sites would continue.

FIRE MANAGEMENT

The Park is operating under their *1990 Fire Management Plan*. The following are goals of that plan:

- To allow fire, as an ecosystem process in the biotic communities of the Park, to resume its natural role to the fullest practical extent.
- To provide for rapid, aggressive, and safe suppression of all fires that do not meet management objectives by defining suppression responsibilities, organization levels, and decision-making processes.

RESEARCH

High quality information is vital for the proper management of the Park and protection of Park resources. The Park uses a multi-faceted process to initiate the accumulation of scientific knowledge. Studies may be conducted with in-house expertise and funding, or with outside assistance (both money and people).

Park resource information needs are defined within the Park's *Natural and Cultural Resources Management Plan*. The *Natural and Cultural Resources Management Plan* is a document that lists Park research needs, threats to Park resources, projects that would mitigate the threats, and a ranking of these projects. Each year these lists are submitted for national ranking and possible funding. The *Natural and Cultural Resources Management Plan* is updated as needed to maintain a current listing of issues and threats. Funding for projects may be from the existing Park budget, receipt of funds from system-wide competition, or outside funding sources, such as grants.

Independent researchers often apply to the Park for research permits. Such research is encouraged. The information gained may have practical application for the protection of Park resources or for visitor enjoyment. More theoretical research may, in the long run, yield the basic knowledge necessary to protect Park resources. Information may be valuable to the field of science far beyond Park boundaries. Independent research supports the concept of "parks as classrooms" when students learn from the protected natural resources of the Park. The Park functions as a natural laboratory open for observation and scientific inquiry. The Park, through scientific research, provides information to outside areas about desert ecosystems, and provides the baseline by which the uses of those areas may be evaluated.

Research permits or scientific collection permits are issued to researchers from universities, museums or other agencies when their studies are consistent with legislation, especially the NPS Organic Act of 1916, the California Desert Protection Act of 1994, the Wilderness Act of 1964, and the National Parks Omnibus Management Act of 1998. Some research projects propose techniques that unacceptably impact Park resources. Preference is given to projects which have a high benefit to Park resource protection, visitor enjoyment or science, and a low impact on Park resources.

INVENTORYING AND MONITORING

Management of the Park's resources is currently guided by direction provided in the enabling legislation and NPS regulations and policies. An existing *Natural and Cultural Resource Management Plan* provides further guidance for this program. Staffing and funding to manage this program would remain at the current level, with modest increases possible through special initiatives. Project priorities would be

determined based on existing staff availability and funding. A strategic plan would be prepared annually that provides goals, objectives and annual work plans for the Park. The strategic plan also provides five-year goals that allow some limited view of resource issues and allocation of staffing and funding.

CULTURAL RESOURCES

Cultural resources management in the Park focuses on National Park Service compliance efforts to meet the requirements of the National Historic Preservation Act, the Director's Order #28: Cultural Resource Management (1998), and NPS *Management Policies* (1988).

Cultural resource management programs would continue to include: (1) data collection and inventory of archeological sites, ethnographic resources, historic properties, and museum objects/specimens; (2) intermittent updating of the list of classified structures (the list has been updated during FY 97); (3) cultural resource studies; (4) finalization of national register nomination forms; and (5) collection/management of museum collections, including historical objects and archival documents, archeological artifacts, ethnological materials, biological specimens, geological samples, and paleontological materials.

The National Park Service would provide protection and limited stabilization of archeological sites, ruins, structures, and objects. Resources would be protected through ranger monitoring activities, with remedial actions focused primarily on sites in high-use visitor areas.

Cultural resources, including archeological sites, ethnographic resources, and historic structures would continue to be evaluated under criteria for listing on the national register on a project specific basis. Historic properties listed on, or determined eligible for listing on, the National Register of Historic Places would be afforded stabilization/preservation treatment as funding allows, with preservation efforts focused primarily on key resources having national or regional significance in high-use visitor areas. The rehabilitation and adaptive use of historic structures, such as several buildings at Scotty's Castle and CCC-era buildings at Cow Creek, would be a priority to ensure their preservation. The National Park Service would continue to cooperate with the private owners of historic properties in the boundaries of the Park, such as the Furnace Creek Ranch and Furnace Creek Inn, to preserve and interpret significant resources.

Numerous historic structures such as mining sites and backcountry cabins are located in wilderness or remote areas. Some or these resources possess national register significance; others have been determined to be ineligible for inclusion on the register; others have not been evaluated. In addition, many of these resources present safety hazards (e.g., open mine shafts). Generally, structures and sites that are listed on or eligible for listing on the national register and/or have safety concerns would continue to have higher priority. The treatment of significant properties could include documentation, stabilization, and/or preservation. Sites presenting safety risks or having hazardous materials could be treated through methods such as closing and sealing of mine shafts and tunnels, after appropriate documentation/collection of structures and artifacts. All treatment undertaken on significant or potentially significant resources would be subject to National Historic Preservation Act section 106 compliance.

For structures and resources determined not to be eligible for inclusion on the national register, treatment options could include natural deterioration, with no efforts being made to maintain the structures/sites or to provide access to them. In some special cases, nonhistoric structures with importance could be stabilized if conditions warranted.

NATIVE AMERICAN INTERESTS

Same as alternative 1.

VISITOR USE, SERVICES, AND FACILITIES

INTERPRETATION

The Park's *1990 Interpretive Prospectus* and the comprehensive interpretive plan (in progress) would reflect the recent addition of lands, individual site plans, and other appropriate support documents. In the interim, interpretive services would continue wherever NPS staff could effectively meet with the public to increase their understanding and appreciation of Park resources. Interpretive wayside exhibits within the Park would continue to be upgraded in accordance with a wayside exhibit plan prepared for Death Valley by Harpers Ferry Center. Additional wayside exhibits would be developed for key features along heavily traveled corridors within recently acquired lands and elsewhere within the Park if the need to interpret and or protect resources arises.

The primary interpretive theme as identified in the *1989 General Management Plan* for the monument is to integrate the geological, cultural, and biological aspects, concentrating on the harshness of the environment and the adaptation that all living things must make to live here. This theme would continue to be used.

INFORMATION/ORIENTATION

In addition to the visitor facilities at Furnace Creek and Scotty's Castle, staffed information/ fee collection stations are located in Beatty, Nevada, Grapevine and at Stovepipe Wells and would continue to operate on reduced schedules. Ranger stations at Grapevine, Wildrose, and Shoshone also provide visitors with information and would operate with volunteer staff. Funding would be sought to increase NPS staff presence at these facilities to meet visitor demand for assistance.

The Park would continue to support the multiagency information center at Lone Pine that serves visitors accessing Death Valley from the Owens Valley to the west and the Mojave National Preserve's Baker, California facility that assists visitors approaching the Park from the I-15 corridor to the south. These points would provide information, orientation, and interpretation for the Park and the region.

The Park would continue to maintain and enhance information on Death Valley via the National Park Service website (www.nps.gov/deva), and would continue to explore new opportunities for information distribution as technology develops.

VISITOR FACILITIES

Interpretive Facilities

The Park would continue to operate major visitor centers at Furnace Creek and Scotty's Castle and would continue to provide ranger stations at Grapevine, Wildrose, Shoshone, and Beatty. Furnace Creek would continue to include a staffed visitor information desk, interpretive displays, a large auditorium, and a sales outlet of the Death Valley Natural History Association. This facility was completed in 1960 and planned when annual visitation was 250,000. Annual visitation is now approximately 1.2 million. Its interpretive media are dated and focus on the old monument lands.

The visitor center in the historic Gas House at Scotty's Castle would continue to focus its interpretive program on the history and character of the castle and the people tied to its story. New displays, which depict the history of the people, construction of the buildings, and the complex, are now complete. The visitor center also functions as a sales outlet, and during the summer season, serves as ticket sales and general information center. The guided tour, which involves NPS employees dressed in period costumes telling the story of how Scotty's Castle came to be and the individuals who lived there, would continue. Tour fees would directly support the interpretive tours.

Developed Campgrounds

In 1998, Death Valley operated nine developed campgrounds, providing a variety of camping experiences from tent camping at higher elevations to facilities for recreational vehicles at Furnace Creek. Campgrounds would continue to exist in the following locations but the number of campsites could vary slightly over time. Smaller campgrounds or parts of campgrounds could be eliminated if situations arise where threats to visitor health and safety can not be mitigated.

The following are the nine developed campgrounds and the number of campsites at each campground:

- Emigrant with 10 sites
- Furnace Creek with 126 sites
- Mahogany Flat with 10 sites
- Mesquite Springs with 30 sites
- Stovepipe Wells with 200 sites
- Sunset with 1000 sites
- Texas Spring with 92 sites
- Thorndike with 10 sites
- Wildrose with 30 sites

RECREATIONAL ACTIVITIES

All recreational activities would be the same as those described in alternative 1 except for visitor use in Saline Valley.

Visitor Use in Saline Valley. Improvements such as pit toilets, fire grills, a shower, hot tubs, and picnic tables would continue to be maintained by the public using the springs. Roadside camping would continue to be allowed. The Park's 30-day camping limit would apply to the valley. Park volunteers at the springs would assist visitors and would provide a radio link to Park rangers for emergency situations. Visitor protection and resource education rangers would patrol the area to provide assistance, enforce regulations, and educate visitors but not on a daily basis. The Saline Valley Road would continue to be maintained by Inyo County. The Park would consider a request by advocates and users of the springs to enter into an agreement for maintenance assistance in the area.

Two airstrips exist in the valley, the Chicken Strip (located north of the road to the springs) and the Tail-Dragger airstrip (located south of the road), which were created and maintained by the public to provide air access to the valley. The Tail-Dragger airstrip would remain closed.

VISITOR USE FEES

Death Valley National Park currently collects recreational fees at the Furnace Creek visitor center, the Grapevine entrance station and information/ranger stations at Stovepipe Wells and Beatty, Nevada, and

Baker, California. Recreational fees are also collected for camping at the developed campgrounds located within the Park and for the guided tour offered at Scotty's Castle.

Filming and incidental business permits would continue to be granted on a case-by-case basis. Commercial tour buses are charged an entrance fee based on the seating capacity of the bus.

COMMERCIAL SERVICES

The Park oversees and manages contracts for concession services located at Stovepipe Wells and Scotty's Castle. Stovepipe Wells offers visitors general services such as lodging, food, gasoline, and a small market, while Scotty's Castle provides food, gasoline and a gift shop. A development concept plan for Stovepipe Wells provided guidance for improvements to buildings and other facilities. No plans exist to significantly expand the current level of concession services there. The Park also permits other commercial services such as guided tours, hikes, and trail rides that occur in a variety of areas in the Park, both in the backcountry and developed areas. The Park works cooperatively with the owners of Panamint Springs Resort and with Amfac Resorts, which owns and operates commercial services at Furnace Creek, but does not have any authority over management of these commercial services.

GENERAL DEVELOPMENT CONCEPTS

A development concept plan is an intermediate plan between a general management plan and a specific design with construction drawings. These plans are applied to situations where there is a need to plan for visitor, or other administrative facilities. The process involves an analysis of human activities, natural systems, cultural features, and management objectives for a specific geographic area. Recommendations are then made on appropriate activities and the areas in which they should take place and on what facilities would be needed to support the desired end results. A development concept plan for Stovepipe Wells was completed in 1980 and is being updated. A development concept plan for Cow Creek was completed in 1984. A development concept plan for the Grapevine area is in progress and would be completed. (See Alternative 1 for details).

ROADS AND CIRCULATION

ROADS

There would be no changes in the existing roads. Some limited upgrading of heavily used roads might be undertaken as funds permit. The Park would continue to maintain 243 miles of paved roads and 442 miles of non-paved roads (see "Affected Environment"). The state would continue to maintain Highway 190, which traverses the Park east to west through Furnace Creek Wash and over Townes Pass. Inyo County would continue to maintain an estimated 75 miles of paved and unpaved roads in the Park, principally in Saline Valley and the new additions on the north and west side of the Park.

Little or no maintenance would be performed on high-clearance and four-wheel-drive backcountry roads. However, emergency repairs might be undertaken following flash floods. Vehicle use in the Park would be limited to street-legal vehicles. No offroad driving would be permitted.

Highway 190 is designated as a national scenic byway from Townes Pass to the eastern boundary of the Park, one of only two of the national designations in the state of California. The road will continue to be managed for its superb scenic and historical values.

TRAILS

At the present time, hiking is allowed on all open trails, while equestrian use is allowed in most areas. Single-track pedestrian walks or trails, such as Golden Canyon, would not be open to equestrian use. Bicycles would not be allowed on single-track trails or in wilderness. Cross-country foot or equestrian travel is allowed. No new trails are currently planned but would be considered in the wilderness/backcountry management plan.

The wilderness/backcountry management plan would address specific trail use by hikers, equestrians, and people with disabilities. The plan would also address the intensity of trail development, including the type and number of signs, trails, and trailheads, long distant trails extending into other jurisdictions, and the anticipated maintenance levels for developed trails. Abandoned roads in wilderness would continue to be closed to mechanized use (vehicles and bicycles) according to the Wilderness Act, but would be considered for use as trails in the wilderness plan. The *1989 General Management Plan* called for a Panamint Crest Trail to be developed from Aguereberry Point south into Johnson or Warm Spring Canyon. The need for this is somewhat questionable given the open character of the area. This proposal would be re-examined by the Park in the wilderness/backcountry planning effort.

SIGNS

The Park's management direction on signs is for signs to be unobtrusive, minimal, and blend with the natural environment so that the undeveloped wild character and sense of exploration remains. A sign plan would be prepared by the National Park Service that would ensure this vision is carried out. The sign plan would provide for directional signs to major points of interest which are typically located on the major roads that receive most of the traffic. Secondary or backcountry roads would remain relatively free of directional signs. It is the intention of this management direction to keep visitors from becoming lost and allow the backcountry roads to remain lightly traveled. Efforts would be made in the sign plan to use international symbols or other appropriate methods to keep signs simple and easily understood for the broad spectrum of visitors entering the Park. Because the desert can be unforgiving in the summer, consideration would be given in the sign plan for signs that could help protect the health and safety of visitors unfamiliar with the desert. Boundary signs would be maintained at all Park access points in the backcountry to inform people that all historical, archeological, and natural objects are protected under federal law. A variety of media would also be used to minimize the proliferation of signs.

ADMINISTRATIVE OPERATIONS AND FACILITIES

PARK ADMINISTRATION/EMPLOYEE HOUSING

Existing and future Death Valley National Park headquarters, administrative, resource management, visitor and resource protection, interpretative, and maintenance staff buildings and employee housing would remain in the Furnace Creek, Cow Creek, Grapevine, Scotty's Castle, Stovepipe Wells , and Wildrose areas of the Park (see "Affected Environment" for complete description).

SOLID WASTE DISPOSAL

The Park landfill near Furnace Creek has been closed to further use. Current law and regulations prohibit landfills in parks. Solid waste disposal would continue to be hauled to approved landfills outside the Park.

LANDOWNERSHIP AND USE

PARK BOUNDARY AND AUTHORIZED ACREAGE

Section 302 of the California Desert Protection Act established the Park and abolished the previous monument, incorporating all the previous monument lands into the new Park. No authorized acreage was specified in the act. The Congressional maps delineating the boundary of the Park and referred to in section 302 are dated July 1993, and are often commonly called the S-21 Maps. This set of 26 map sheets provided the basis for the preparation of the official boundary maps and legal description (see appendix A of the "Land Protection Plan") by the National Park Service . The National Park Service prepared the official boundary maps (9 map sheets dated July 1996) according to section 304 and submitted them to Congress in August 1996, completing the process of preparing official boundary maps of the Park. These maps are on file with the Superintendent for inspection. Figure 2 provides an overview of the Park boundary and preliminary wilderness. The "Land Protection Plan" (appendix B) provides a breakdown of the landownership.

WILDERNESS

Wilderness would be managed as described in alternative 1. Recommendations of the wilderness/ backcountry management plan (in progress) would be implemented. Wilderness management would continue to focus on horse patrols and backcountry road patrols on open corridors to assist visitors and identify illegal activities. Wilderness would be considered in all compliance and permitting actions, and appropriate mitigation would be applied. The "Principles for Wilderness Management in the California Desert" would be used for reference.

LAND ACQUISITION

The Park would continue to regulate nonfederal rights through existing law or other regulations. Purchases of nonfederal properties is not an ongoing or active program, but would occur on an opportunity basis from willing sellers as funding is available. Donations and exchanges are pursued from willing sellers, and third party acquisitions from willing sellers are encouraged. State school sections in the new lands are actively being exchanged by the Bureau of Land Management pursuant to the CDPA direction.

The National Park Service is required by USDI policy to prepare a land protection plan for every NPS unit that has nonfederal lands or interests in its authorized boundary. A draft land protection plan for Death Valley National Monument was prepared in the mid-1980s, but never finalized. This draft plan has been updated to reflect the addition of new land. (See appendix B).

MINERAL DEVELOPMENT ACTIVITIES

The Mining in the Parks Act of 1976 (P.L. 94-429) prescribed that all activities resulting from the exercise of valid existing rights on patented and unpatented mining claims within any area of the national park system shall be subject to regulations developed and administered by the National Park Service. The regulations governing mining activities on all patented and unpatented claims found at 36 CFR Part 9A require operators to file a plan of operations with the National Park Service for all mineral related activities. Proposed mining operations must meet the approval standards provided in the regulations and post a performance bond equivalent to the cost of reclamation before an operation would proceed.

No specific mining is authorized by this general management plan. Each mining proposal is required to submit a detailed mining and reclamation plan and undergo separate environmental impact analysis.

Consultation for listed species and cultural resources would occur at that time. When mining is authorized, full reclamation of the site is required upon cessation of mining activity.

Congress also closed the Park to all new mining claim location and all other forms of appropriation and disposal. Section 305 of the California Desert Protection Act withdrew the Park from all forms of entry, appropriation or disposal under the public land laws; from location, entry and patent under the United States mining laws; and from disposition under all laws pertaining to mineral and geothermal leasing and the sale of mineral materials. This provision of the act is subject to valid existing rights.

The National Park Service also regulates mineral development on valid nonfederal oil and gas interests in accordance with 36 CFR Part 9B. This involves property where the surface is held by the federal government, but the mineral rights were retained by the private party when the land was acquired.

Whenever a proposed mineral development fails to meet the regulatory approval standards and no alternative development scenario is feasible, the National Park Service would seek funding to initiate acquisition of the mineral rights.

ABANDONED MINES

The Park has not developed a comprehensive inventory of abandoned mine lands for the old Monument area. General information is provided in the "1981 Historic Resources Report" by Greene and Latschar. A preliminary inventory of abandoned mining properties on the new lands was generated from existing information in the U.S. Geological Survey and Bureau of Mines databases. Additional detailed surveys would be conducted to provide more detailed information on the abandoned mineral properties parkwide. Appropriate stabilization, reclamation, and hazardous material clean-up would be carried out after development plans and environmental and cultural resources compliance had been completed, and, as funding was available.

SAND AND GRAVEL USE FOR ROAD MAINTENANCE

Building materials (sand, gravel, cinder, etc.), geothermal resources, oil, and gas on federal lands would remain unavailable for extraction or sale. The use of borrow materials for road maintenance would have to conform to existing NPS policy that requires materials to be obtained from nonpark sources, unless economically infeasible.

CATTLE GRAZING

No grazing is permitted on the former monument lands. The California Desert Protection Act provides for grazing to continue at no more than the current level (1994) on the new Park lands. The National Park Service allows cattle grazing on one previous BLM allotment under a special use permit. A permit for 1,105 animal unit months for the Hunter Mountain permit currently covers the 1999–2000 grazing period. There were 1,628 animal unit months on the Last Chance permit, but there has not been a special use permit issued to the permittee for several years (1996). Small portions of the BLM Eureka Valley and Lacey-Cactus-McCloud permit areas existed in the Park. Currently, these permits have neither range developments nor cattle grazing on Park lands. Cattle grazing would not be permitted on the Death Valley National Park portion of these permit areas. The Bureau of Land Management has stated that with the permits' small size and location on NPS land, their elimination would result in no change in the permittees' BLM lease arrangements or in the number of cattle permitted to graze on BLM lands (Lee Delaney, BLM, pers. comm., December 1997).

The California Desert Protection Act directs the Secretary of the Interior to make the acquisition of "base property" from willing sellers a priority above all other acquisitions in the Park. Death Valley's

management goal is to achieve the permanent retirement of grazing. If ranchers notify the Superintendent of their willingness to sell base property, the Superintendent would immediately notify the Secretary of the Interior of the priority acquisition and request Land and Water Conservation funding from Congress. The Park would also work with conservation organizations to purchase grazing permits from willing sellers. Once a grazing permit was purchased and the new owners (i.e. conservation organizations) request retirement, it would be permanently retired. Also, if an allotment were placed in a nonuse status, after a period of five years, it would be permanently retired.

Where permits are acquired or retired, ranch developments could eventually be removed and site restoration undertaken, subject to environmental and cultural compliance (including a determination of national register eligibility and National Historic Preservation Act section 106 compliance on all cultural features over 50 years old).

The NPS grazing management plan would evaluate all significant resources in each viable permit. Those resources would include sensitive plants, habitats, other unusual plant assemblages, sensitive animals, and cultural resources. The plan would include how many cattle (at no more than the current level on 10/94) and the time and place where these cattle would be allowed to graze, seasonal restrictions, the placement/movement of mineral blocks and water facilities as a tool to alter cattle use patterns, pasture rotation, etc. The plan would also establish a monitoring protocol to allow frequent evaluations of the Park resources to evaluate efficacy of the management practices. Management changes would be made accordingly.

Fees would be based on BLM schedules and NPS Special Use Permit costs. Grazing fees would be used for Park resource management and restoration projects. Restrictions on grazing use would be based on resource conditions, visitor safety and wilderness values. The Superintendent has the discretion to lower grazing use levels, as necessary to respond to resource protection needs, visitor safety, or wilderness values. Use levels would be based, in the interim, on existing permit plans, and if changed, would be based on scientific data, and on water, forage, protection of threatened and endangered species, riparian areas, water availability, and soils.

In regard to access, ranchers would normally be required to access wilderness on foot or horseback, similar to other users. However, certain situations may exist where motorized access is necessary to maintain range developments. These types of access could be considered under section 708 of the California Desert Protection Act that provides for adequate access and reasonable use and enjoyment to owners of nonfederal lands or interests that lie in wilderness. A minimum tool determination would be used prior to granting approval for motorized/ mechanical equipment use within wilderness. Death Valley National Park would follow the Wilderness Act, and the California Desert Protection act in the administration of the Park's wilderness areas.

Permit area fences would be inspected to ensure they provide for movement of wildlife. In cases where movements may be impeded modifications would be required.

If grazing permittees seek to acquire new water rights for their allotments, NPS *Management Policies* require that all rights to the use of water diverted to or used on federal lands within Parks would be perfected in the name of the United States.

PLAN IMPLEMENTATION

The Park currently has about 108 permanent employees and an operating budget of $5.4 million. Staffing and funding for most visitor services and maintenance of facilities is expected to remain at approximately

constant levels. Some special initiative projects, repair and recreational fee demo replacement funds, and routine cyclic maintenance funding are anticipated.

TABLE 4: DEATH VALLEY NATIONAL PARK EXISTING STAFFING

Function	Existing Staffing
Park Management	2
Administration	10
Resource Mgmt.	15
Protection/Fee*	27
Maintenance	34
Interpretation**	20
Total	108

*Included in Protection/Fee are 12 for fee collection positions funded out of fee collection receipts

**12 interpretation positions for Scotty's Castle living history, are funded 100% out of interpretive tour receipts

ALTERNATIVE 3: OPTIONAL MANAGEMENT APPROACH

GENERAL DESCRIPTION

This alternative is the same as alternative 1 (proposed action), except for developed campgrounds, visitor use in Saline Valley, and landownership and use. Only those sections that are different from alternative 1 are included below.

VISITOR USE, SERVICES, AND FACILITIES

Developed Campgrounds

The Emigrant campground would be closed because of the potential flood hazard.

Backcountry and Roadside Camping

Visitor Use in Saline Valley. All areas within the Eureka-Saline wilderness road corridor would be open for roadside camping. Designated car camping would be established in the area of springs.

Road maintenance, between Saline Valley Road and Lower Warm Springs, trash pick up and removal, toilets and all other maintenance functions at the warm springs would continue to be done by user groups under agreements with the Park. A volunteer camp host system would continue to provide visitor services.

No airstrips would be permitted in Saline Valley.

LANDOWNERSHIP AND USE

LAND ACQUISITION

Private land or interests would be only acquired on an opportunity basis if the National Park Service was approached by a landowner wanting to sell, or if a development project would adversely affect Park resources. Exchange of state school sections would continue.

MINERAL DEVELOPMENT ACTIVITIES

The Park would administer mineral development activities under existing laws and regulations applicable to such activities. This action is the same as the existing management alternative. Please refer to that alternative for a complete description.

The Park would also undertake a sensitive resource analysis based on an objective analysis of physical, biological, cultural and visitor use values relative to projected mining impacts. This analysis would examine potential mineral development scenarios that would be likely to occur on each property based on the deposit, and assuming operator performance standards and specific mitigation would be applied to protect resources and values. The results of this analysis would be used to identify areas of the Park where mineral development would be inconsistent with the mission of the Park and likely mineral development would not be able to meet 36 CFR Part 9A or 9B approval standards. In these areas, acquisition of the mineral rights would be pursued.

PLAN IMPLEMENTATION

OPERATIONAL COSTS

The existing Park operating base in FY 00 is $5.4 million and existing staffing is 108. In order to fully implement the proposed action over the 15-year life of the plan, and assuming that above itemized activities are undertaken and visitor use of the Park increases, an additional 37 staff would be needed. This would require approximately $1.7 million per year added to the Park's operating base to cover salaries, benefits and administrative expenses (space, utilities, vehicles, etc.).

The costs of implementing proposed activities identified under this alternative are the same as the proposed action. The estimated costs of acquiring private lands and mining claims under this alternative are not yet available. No comprehensive evaluation of land acquisition costs has been undertaken in accordance with NPS policy and therefore cannot be estimated at this time. The cost of acquiring property involves title searches, appraisals, relocation costs, and fair market value of the property. These specific costs would be available only on a property by property basis and would need to be determined based on current market values. An approved cost estimate for the land protection alternative selected would be prepared at a later date by the Washington office. Refer to "Table 3: Proposed Action Cost Summary."



AFFECTED ENVIRONMENT



NATURAL RESOURCES

PHYSICAL RESOURCES

AIR QUALITY AND VISIBILITY

The management and enforcement of the Clean Air Act's air quality standards in the Death Valley National Park area is conducted by two entities, the Mojave Desert Air Quality Management District and the Great Basin Unified Air Pollution Control District. The Mojave Desert Air Quality Management District includes the desert portion of San Bernardino County (within the South East Desert Air Basin) and the Great Basin Unified Air Pollution Control District includes Inyo and Mono Counties (within the Great Basin Valley Air Basin).

The Congress established the Prevention of Significant Deterioration program as part of the Clean Air Act. To facilitate the implementation of this program, an area classification scheme was established. This classification scheme has class I receiving the highest degree of protection with only small amounts of certain kinds of additional air pollution (sulfur dioxide and particulate matter) allowed. The other two areas are class II, which allows moderate increases in certain air pollutants; and class III, which allows a large amount of new air pollution (Congress has yet to designate any class III areas). There are no class I areas in the California Mojave Desert. Death Valley National Park is a class II "floor" area, meaning that it may never be redesignated to class III.

Federal and State Nonattainment Areas

The Clean Air Act developed national ambient air quality standards for a finite number of pollutants called "criteria pollutants." The criteria pollutants are: sulfur dioxide, carbon monoxide, total suspended particulates, nitrogen oxides, lead, ozone, and particulate matter less than 10 microns in diameter (PM_{10}). State of California standards, which are stricter than federal standards, include additional standards for hydrogen sulfide and particulate sulfates.

Nonattainment areas are areas that are not in compliance with the national ambient air quality standards, and therefore must reduce pollution to reach compliance. Nonattainment requirements include reasonable controls on existing stationary sources, most stringent controls on new sources, emission offsets, transportation control plans (including inspection and maintenance), and sanctions for failing to submit a plan.

The Environmental Protection Agency has classified most of the South East Desert Air Basin as nonattainment areas for ozone. Mono County levels have exceeded the national ambient air quality standards and may be designated nonattainment for ozone in the future. The Searles Valley planning area is also nonattainment for state hydrogen sulfide and particulate sulfate standards (Searles Valley planning area shares its boundaries with three air pollution control districts: the Mojave Desert, Great Basin Unified, and Kern County). The San Bernardino County portion of Death Valley National Park is in nonattainment for California's state ozone standards.

Federal PM_{10} nonattainment areas include the San Bernardino County desert area, Owens Valley, Mammoth Lakes, Mono Basin, and the Searles Valley planning area. Mono and the eastern portion of Inyo counties have not recorded PM_{10} emissions in excess of the national standards.

Pollution Sources

Visibility is probably the most important air quality resource within the desert region and is the most easily affected by activities that generate dust (especially fine particulates) and sulfur dioxide. Visibility impacts occur from long-range transport of pollutants from as far away as the San Joaquin Valley and the Los Angeles basin (RESOLVE study 1988, cited in BLM 1995a). The RESOLVE study estimates that two-thirds of the visibility degradation was attributed to sources within the San Joaquin Valley with the balance coming from local sources and the Los Angeles basin (BLM 1995a).

One nearby source of pollution is the Searles Valley (Trona) complex that produces soda ash, borax, potash, and other chemicals from Searles Dry Lake. Other nearby sources of emissions include Owens Lake, Owens Lake Soda Ash Company, U.S. Army's National Training Center at Fort Irwin, China Lake Naval Air Weapons Station, Briggs Mine, and Panamint Valley Limestone Quarry. Air quality monitoring activities occur at Death Valley National Park and at the Briggs Mine. The Briggs Mine transmits (via the Internet) its air quality data daily to the Great Basin Unified Air Pollution Control District.

Exposed lakebeds and farmlands lie in the Owens Valley and Mono Basin between mountain ranges. Wind-carried dust from these exposed lands in the valley adversely affect air quality over the area (U.S. Forest Service, 1988). Visibility has been affected to the extent that Department of Defense test flights over the Owens Valley are hampered or shut down 6 to 12 times each year (U.S. Forest Service, 1988). The county, the Great Basin Unified Air Pollution Control District, the city of Los Angeles, the Department of Defense, and the Inyo National Forest are making coordinated efforts to resolve this concern.

Local pollution sources in the desert consist primarily of particulate matter from offroad vehicles, windblown soil, mining operations, livestock grazing, and agricultural activities. These sources have left certain areas denuded or sparsely vegetated, allowing wind erosion to occur and air quality to suffer, occasionally causing particulate standards violations at some locations.

Death Valley National Park currently has an air quality monitoring program which monitors ozone (including meteorology) and particulates. Both are managed under the NPS national program contracts. The Park will soon be adding wet and dry acid deposition monitoring. All air quality monitoring occurs at a monitoring station at Cow Creek, 5 miles north of Furnace Creek.

NIGHT SKY

Within Death Valley National Park, the night sky toward the southeast is noticeably impacted by lights from Las Vegas, perhaps with some Pahrump influence. This is especially apparent while heading south from Grapevine and Stovepipe toward Cow Creek and Furnace Creek. Other light sources are essentially limited to the Furnace Creek and Stovepipe Wells areas of Death Valley National Park, residential lighting from small communities such as Shoshone and Death Valley Junction, vehicles, and minor stationary lighting. Nighttime activities at Briggs Mine and Panamint Valley limestone quarry may be observed from Panamint Valley and portions of Death Valley National Park overlooking Panamint Valley.

NOISE

A high level of traffic is observed along State Highway 127 between Baker and Death Valley Junction (Caltrans 1996). Vehicle noise is generally not an issue in the Park in spite of the many and heavily used roads including State Highways 127, 190, and 178, and NPS major paved roads. Because of the Park's size, most areas are well away from traffic and its noise.

Other areas where localized noise occurs are at the BLM-managed Dumont Dunes off-highway vehicle open area and at mining operations. Less localized is noise from military overflights. Frequent low-level military overflights are often seen in the Panamint and Saline Valleys. If the National Training Center's (Fort Irwin) expansion is approved, sporadic and significant localized noise would be generated in the southern boundary of Death Valley National Park (BLM 1996).

The Park is in the vicinity of several U.S. Department of Defense facilities: Fort Irwin Military Reservation, China Lake Naval Air Weapons Station, Edwards Air Force Base, and Nellis Air Force Base. Military aircraft from these facilities often use airspace in the Park. Although aircraft noise does not appear to affect wildlife, visitors to the area often react adversely to jet noise and sonic booms. In addition, some booms have caused damage to natural and cultural resources (NPS 1988).

Military overflights constitute the primary source of high-level noise incidents in the Park. Parts of the Park are within a joint service R-2508 special use airspace complex designated as a military operations area (MOA) (Saline, Panamint, and Shoshone MOAs) that permits aircraft to fly at speeds exceeding 250 knots and at altitudes 200 feet above ground level or higher (DOD 1995). The military operations area is used on a daily basis by Navy and Air Force aircraft. Low-level overflights of various military aircraft are common in the vicinity of the Park.

In 1976, Death Valley National Monument and Edwards Air Force Base signed an agreement stating that pilots would be instructed to fly at least 3,000 feet above ground level while within the monument boundary. Jet pilots from the Navy, Marines, Air Force, and the National Guard, fly over 60,000 flights per year from Edwards. Occasionally pilots have erred or ignored flight restrictions and have flown in Death Valley below the 3,000 foot restriction. Upon receiving complaints from the public, the National Park Service will typically notify Edwards on the reported agreement violation. This policy will continue and will be considered for incorporation in any future NPS/military agreement.

Title VIII of the California Desert Protection Act, 1994, provides that:

> Nothing in this Act, the Wilderness Act, or other land management laws generally applicable to the new units of the National Park or Wilderness Preservation Systems (or any additions to existing units) designated by this Act, shall restrict or preclude low-level overflights of military aircraft over such units, including military overflights that can be seen or heard within such units.

WATER

Groundwater

Groundwater is found throughout the Park and varies greatly in depth and quality. The Park's groundwater basins are recharged from surface and subsurface infiltration. Depletion of groundwater basins and a diminishing of water quality are some of the concerns that were expressed at public meetings. Groundwater is the Park's principal source for desert springs , seeps, and streams. The maintenance of groundwater quality and quantity is critical to the survival of desert surface waters and their associated plant and animal life.

The major concern is that Park water and water-related resources will be affected by up-gradient withdrawals and contamination. Death Valley National Park receives much of its water from the lower portion of the Death Valley groundwater flow system's flow from Nevada (Pal 1995). The Death Valley groundwater flow system is defined in general terms as the area where groundwater flow is toward Death Valley. Some groundwater inflow also occurs from areas in California that are adjacent to the Park. The Death Valley groundwater flow system is believed, by the National Park Service, to be fully, if not over,

appropriated. Existing and future appropriations of limited water resources from the flow system may result in impacts to Park water resources. Additionally, potentially contaminated groundwater plumes from the Nevada Test Site or from cyanide runoff from the large mining operation near Bullfrog could contaminate the regional aquifer that drains into the Park (NPS 1988a). The Bullfrog mine is and will continue to conduct groundwater testing until 2005. That company reported that no ground water contamination has been detected (Barrick/Bullfrog Mine, January 14, 1999 letter to NPS regarding the DEIS).

Water Use

TABLE 5: 1994 WATER USE AT DEATH VALLEY NATIONAL PARK.

Water System	Average Annual Use (Millions of Gallons)	Average Annual Use (acre feet)	Comments
Cow Creek	58.400	179.2	Unmetered
Furnace Creek	42.828	131.4	Meter broken in 1992
Wildrose	0.748	2.3	Unmetered
Stovepipe Wells	0.131	0.4	Meter removed 1993
Scotty's Castle	72.237	221.7	Sep 89- Apr 94 data
Grapevine	3.561	10.9	Unknown type and period
Mesquite Campground	1.041	3.2	Unmetered
AMFAC at Stovepipe Wells	1.280	3.9	Jan 90 – Mar 94
AMFAC at Furnace Creek	611.971	1,878	Sep 89 – Mar 94
Timbisha Village	12.572	38.6	Dec 91 – Mar 94
Totals	**804.768**	**2,470**	

(Source: Provisional data from NPS Files)

Another site where extensive groundwater is being used at rates that exceed normal groundwater recharge is the Briggs Mine adjacent to the Park. The Briggs Mine has an approved mining plan that calls for the groundwater withdrawal of about 640 acre-feet per year (BLM, 1995a). This increase in groundwater withdrawal is in addition to the existing groundwater withdrawal of 750 acre-feet per year from the Panamint Valley (BLM 1995a).

Surface Water

Known surface water sources in the Death Valley region include seeps, wells, springs, and ponds. The small springs and seeps in the Park offer isolated and limited water for plants, wildlife, domestic, or commercial purposes. Some springs produce potable water, but overall, water quality is poor because of high dissolved mineral concentrations (BLM 1996).

In 1972, some 330 water sources of varying dependability and quality were recorded within the monument's boundaries (FWS 1972). The majority of these water sources were found in the Cottonwood, Panamint, and Grapevine mountains. Discharges from these sources range from a minimal seep to rates exceeding 200 gallons per minute. Death Valley's enlargement to a National Park in 1994 added an additional 1.3 million acres. These new lands include additional water sources such as Darwin Creek, Saline Warm Spring, and many springs in the Nelson Range and Whippoorwill Flat areas of the Inyo Mountains.

Death Valley's perennial streams include Salt Creek, Furnace Creek , Cottonwood Creek, and Darwin Creek. The Amargosa River is also perennial, but only for short stretches, with its length varying

seasonally. Other streams flow seasonally from springs in some of the larger canyons on the west side of Death Valley, such as in Hanaupah and Johnson canyons (NPS 1988a).

Perennial ponds are rare within the Park, and they fluctuate in size with the season. The largest ones (more than 6 acres) are immediately north of Saratoga Springs. Several artificial ponds and ditches supplied by the Travertine Springs are maintained by AMFAC, Inc., on its Furnace Creek properties (NPS 1988a).

Cattle ranching, mining, and resort development in the desert required changes in the natural water flow, quality, and supply. Flows from springs and seeps were diverted or dammed, water was piped miles away from the source, wells were drilled, stock tanks were excavated, and other developments were needed such as wind mills and troughs. These changes brought with them changes to the natural environment. When the flows from the springs and seeps were diverted, the remaining aquatic/riparian flora and fauna were greatly reduced or eliminated. The water piped from the springs and seeps or taken from wells and piped to tanks and troughs is used by cattle, burros, and wildlife.

Water Rights

Initial research on outstanding water rights in the Park at the State Water Resources Control Board in Sacramento revealed that there are approximately 45 appropriated water rights claims on 41 water sources (springs, seeps, streams, wells) in the Park. See "Land Protection Plan" (appendix B) for a list.

Guzzlers (Water Catchments)

A guzzler is a permanent self-filling water catchment. Most are similar to a cistern and are simple, low-maintenance devices that are essentially tanks filled by rain-collecting aprons (Giles 1971). Guzzlers are installed and used to provide water for hunted species in arid areas. Nongame species such as reptiles, songbirds, and insects also use these manufactured devices. Birds enter the covered tank through an opening and walk down a ramp to the water. For bighorn sheep, piping extends from the storage tank to a drinking trough, which has a float valve to regulate the flow.

Game numbers have been increased greatly in parts of the arid West by the use of guzzlers (developed by Ben Glading, California Department of Fish and Game) (Dasmann 1964). Professor Dasmann warned that while the guzzler is functioning, animal numbers should be limited to the area's carrying capacity as "excess numbers of game can easily damage food and cover in areas near water, and in arid lands this damage is long lasting" (Dasmann 1964). This type of damage has been observed in the Mojave Desert near big game guzzlers but not in guzzlers designed for game bird use (McGill, pers. comm., 1997).

Death Valley National Park has five big game and two game bird (gallinaceous) guzzlers. The guzzlers were developed by the California Department of Fish and Game, the Bureau of Land Management, and volunteers prior to the Park's expansion in 1994. A review of guzzler use by Park staff concluded that two of the big game guzzlers received little or no use.

PALEONTOLOGICAL RESOURCES

Death Valley National Park contains a rich and diverse, but fragile and irreplaceable paleontological record. The fossil record in the Park area is nearly as extensive and complicated as the geological record. Much of the area's geology is exceptionally well exposed. Soil development has been greatly retarded throughout much of the area, and the outstanding exposures of geological features support an equally notable exposure of fossil remains. These organisms have value as (1) stratigraphic indicators for correlation of deposits containing them and for determination of relative geologic age (2) records of past

life forms showing the course of evolutionary trends of plants and animals and (3) evidence of changing paleoenvironments.

A literature and records search was completed for the Death Valley National Park region by Earth Sciences curator, Robert E. Reynolds, at San Bernardino County Museum in Redlands. The records and literature search identified a number of potentially sensitive fossiliferous areas within the Park area. Significant paleontological resources and records relating to paleobiostratigraphic events that occur within the Park include:

- The world's oldest mitosing cells, 990 million years old, are preserved in silica in the Beck Spring Formation.
- Significant Cambrian trilobite and invertebrate fossil localities that mark the boundary of the Paleozoic Era, 550 million years of age.
- Significant occurrences of Paleozoic invertebrate fossils and the possibility of very old fossil fish in Death Valley National Park.
- Panamint Range localities that contain significant marine cephalopods and invertebrate fossils.
- The early record of the Oligocene Tertiary Era from north of the Mojave Desert is found in the Grapevine Mountains in Death Valley National Park; important fossils include rodent, canid, horse, helaletid, brontothere, rhinoceros, oredont, and leptomerycids.
- Extremely important Late Miocene trackways, associated with important vertebrate fossils, occur in the Black Mountains in Death Valley National Park and in the Avawatz Mountains south of the Park; the Black Mountains area includes a wide range of camel, horse, gompothere, and aquatic bird trackways associated with a shallow freshwater lakeshore.

GEOLOGIC RESOURCES

Death Valley National Park is, geologically speaking, a part of the larger Basin and Range Province. The Park's oldest rocks were formed about 1.8 billion years ago. The weathered sandstone and limestone rocks from the Funeral and Panamint Mountains are much younger, about 500 million years old, and indicate that this area was the site of a warm, shallow sea throughout most of the Paleozoic Era (570–250 million years ago).

About 3 million years ago, the dynamics of crustal movement changed, and Death Valley proper began to form. At this time, compressional forces were replaced by extensional forces. This "pulling apart" of the earth's crust allowed large blocks of land to slowly slide past one another along faults, forming alternating valleys and mountain ranges. Badwater Basin, the Death Valley salt pan, and the Panamint Mountain Range comprise one block that is rotating eastward as a structural unit. The valley floor has been steadily slipping downward, subsiding along the fault that lies at the base of the Black Mountains. Down-dropping continues today.

Concurrent with the subsidence has been slow but continuous erosion. Water carries rocks, sand, and gravel down from surrounding hills and deposits the pieces on the valley floor. Beneath Badwater lies over 9,000 feet of accumulated sediments and salts.

Recent signs of volcanic activity exist in the northern third of the Park at Ubehebe Crater. Caused by violent steam explosions, the craters formed several thousand years ago when molten material came in contact with groundwater.

There are five dune areas within the Park. They are located near Saratoga Springs, Stovepipe Wells, Panamint Springs, Saline Valley, and Eureka Valley. "[The Eureka Valley Dunes are] the highest dunes in the Basin and Range Province and possibly in the United States. When observed at sunset from the west, against the backdrop of the Last Chance Range, its nearly vertical west facing slopes resemble a marvelous parfait-like melange of pink, white and numerous other tones of earth colored rocks" (BLM 1982).

BIOLOGICAL RESOURCES

VEGETATION

The diversity of Death Valley National Park's plant communities result partly from the region's location in the Mojave Desert, a zone of tension and overlap between the Great Basin Desert to the north and the Sonoran Desert to the south (Kearney and Peebles 1960). This location, combined with the great relief found within the Park — from 282 feet below sea level to 11,049 feet above sea level— supports vegetation typical of four biotic life zones: the lower Sonoran, the Canadian, and even the Arctic/Alpine in portions of the Panamint Range (Jepson 1923; Storer and Usinger 1968). Based on Munz and Keck (1968) classifications, seven plant communities can be categorized within these life zones, each characterized by dominant vegetation and representative of three vegetation types: scrub, desert woodland, and coniferous forest. Microhabitats further subdivide some communities into zones, especially on the valley floor.

Scrub or Desert

Scrub is the most extensive vegetation type in Death Valley. It dominates about three-fourths of the Park landscape and includes the alkali sink, creosote bush scrub, shadscale scrub, and sagebrush scrub communities. The alkali sink or salt flat community occurs in the lower elevations of the Park.

Desert Woodland

Desert woodland is an open, well-spaced community ranging from elevations of about 7,000 feet up to about 9,500 feet. Much of the soil within this community is bare and surfaced with a hard, wind scoured layer similar to desert pavement. The community is dominated by single-leaf pinyon pine (*Pinus monophylla*) and scattered individuals of juniper (*Juniperus osteosperma*).

Coniferous Forest

Coniferous forest in Death Valley National Park includes subalpine forest and some bristlecone pine forests. Both communities occur in narrow belts at upper elevations. Dominants of subalpine forest, including limber pine *(Pinus flexilis),* occur in mosaic concentrations rather than uniformly throughout the area. The bristlecone pine forest community occurs chiefly above 10,000 feet in the Panamint Range, where spacing of individual bristlecones *(Pinus aristata)* and limber pine *(Pinus flexilis)* appear more as an open woodland rather than a forest.

WILDLIFE

Death Valley National Park and the adjacent desert support a variety of wildlife species. Within Death Valley and the surrounding desert there are 51 species of native mammals, two species of exotic

mammals, over 346 species of birds, 36 species of reptiles, three species of amphibians, and six species of fishes (Hansen 1972 and 1973; Landye 1973). Small mammals are more numerous than large mammals, such as desert bighorn, bobcat, mountain lion and mule deer.

The Nelson bighorn *(Ovis canadensis nelsoni)* is the subspecies native to Death Valley. Bighorn occur in desert mountain ranges where the terrain includes rolling hills for feeding areas and nearby cliffs within steep canyons that can be used for escape. Their range does not correlate with any specific vegetative type. The present population is estimated to be between 500 and 1000 animals. Some researchers believe that the sheep population in the Park is declining in numbers. The cause of this possible decline has not been determined; however, several factors may be involved, including the introduction of diseases from livestock, poor range conditions, rapid increase in human activities (such as mining, road building, urbanization, and increased recreation), illegal hunting, and appropriation of water (Seymour 1972). Competition with other animals and drying of springs are additional factors resulting in loss of habitat. Alternatively, it may be possible that the Park herd is not declining, and the use of different census methods that have varying degrees of accuracy are responsible for "fluctuating" numbers of sheep. To reduce visitor impacts and prevent undue disturbance of wildlife, backcountry camping is not permitted within .25 mile of springs.

Exotic Species

Exotic species can include both plants and animals. They are generally defined as those species that occur in a given place as a result of direct or indirect, deliberate, or accidental actions by humans. Examples of exotic species in the Park include wildlife such as burros and chukar and plants like tamarisk and Russian thistle.

Vegetation

Tamarisk, Russian thistle, some palms, introduced annual grasses (from Europe and Asia), and hornwort are some of the more pernicious exotics in the Park. These species often outcompete native vegetation, subsequently eliminating or displacing natives and associated native animals. Annual plants, such as introduced grasses and Russian thistle, often provide an unnatural increase in the amount of dried material available as wildfire fuel.

The tamarisk (*Tamarix ramossissima*), or salt cedar, an introduced shrub or small tree, 5 to 20 feet tall, is an opportunistic invader of moist areas. There are many areas in the Park where this plant has choked out native vegetation. Both the Bureau of Land Management and the National Park Service have ongoing control programs that are attempting to manage this invasive plant. Continuing control is needed to prevent this weedy tree from outcompeting and eliminating native vegetation. A larger relative, the athel (*T. Aphylla*), has been planted, typically as a windbreak or sand-break, in a number of locations in the Park (e.g. near Furnace Creek, Death Valley Junction, and Shoshone). Although not as invasive as tamarisk, the athel is also believed to be an invader of native habitats. Death Valley National Park is reducing the potential for reintroduction by encouraging the use of other types of shade trees, landscaping, and windbreak plantings in developed areas within and outside the Park.

Russian thistle (commonly called tumbleweed) is common in many disturbed portions of the Park, including the Eureka Dunes area, approximately 300 acres near Harrisburg Flats at Skidoo, other old mining sites, and along roadsides.

Date and Washington palms have become established at several backcountry springs in Death Valley National Park. These palms may be removed if it is determined that they are not part of the historical scene.

Introduced annual grasses, such as *Bromus* and *Schismus* species, are serious pests when mature (Hitchock and Chase 1971). "The narrow, sharp-pointed minutely barbed florets (or fruits) with their long rough awns work into the eyes, nostrils, and mouths of stock, causing inflammation and offer serious injury"(Hitchock and Chase 1971). The increase of these grasses throughout much of the arid west is believed to be an important contributing factor in the increase in desert wildfires, which used to be uncommon.

Hornwort, an aquatic annual plant with dense growth, is being removed from Saratoga Spring near the southeast boundary of the Park (NPS 1988a).

Animals

Aquatics. Death Valley National Park has a number of aquatic exotic species. Mosquito fish, goldfish, crayfish, and bullfrogs are common in the Saline Valley. Mosquito fish are also found at Furnace Creek and goldfish are found at China Garden Spring. The aquatic exotic species listed have all been documented to result in adverse impacts to native aquatic fauna (CDF&G 1/12/99 letter to NPS). Wherever and whenever possible these exotics would be controlled to a level eliminating their adverse impacts, or they would be extirpated altogether from Park habitats.

Chukar. The chukar (*Alectoris chukar*) an upland game bird, popular among hunters, was first introduced into California (from India) in 1932 (Mallette c. 1970). Between 1932 and 1955, over 52,000 birds were released by the California Department of Fish and Game (Mallette c. 1970). The birds prefer rocky open hills and flats. Sightings have been reported from below sea level to above 12,000 feet in the White Mountains and Sierra Nevada. Chukar is abundant in every valley and mountain range in Death Valley National Park.

Burros and Wild Horses. Burros were used in the Southwest between 1530s, when the Spanish explorers first brought them to North America, until the 1850s, when the discovery of gold in California led to the burro becoming the prospector's principal means of transportation (Douglas and Leslie 1996). When mines played out or when motorized vehicles became the more practical mode of transport, the miners' burros were often released into the wild (NPS 1979).

From about 1920 to the 1960s, burro populations were kept at low levels by government agencies like the National Park Service and by the public by organized and random shooting of the burros. These efforts to reduce or eliminate feral burros from national park lands were park managers'response to the burros damaging park resources and changing the ecological composition at the expense of the park's native biotic communities.

The National Academy of Sciences concluded that wild horses and burros are exotic animals and are not in equilibrium with the environment. The North American Pleistocene equids and their habitats no longer exist:

> Ecological niches to which Pleistocene equids related do not exist today, and no other animals in the contemporary North American fauna would have the same niche relationships as the modern-day equids, with or without the latter's presence (NRC 1982).

In the 1950s the states of Arizona and California passed burro protection laws that limited the killing of these animals by private citizens. In the late 1960s, Grand Canyon National Park was prevented by public outcry from continuing the 40-year custom of shooting burros (NPS 1979). In 1971 the Federal Wild Free-Roaming Horse and Burro Act was passed. This act limited the killing of horses and burros on public lands administered by the Bureau of Land Management and the U.S. Forest Service. This law does not apply to NPS lands.

Before the passage of the California Desert Protection Act wild horse numbers were few to none within California desert national park units. Presently, the wild horse numbers within NPS units are low, about 10–20 animals. However, numbers are high in the four BLM herd management areas that are adjacent to Death Valley National Park. In these herd management areas, there are about 305 wild horses (BLM 1995b).

Before the passage of the California Desert Protection Act, the Bureau of Land Management managed 13 herd management areas in the California Desert District. Now the agency manages nine herd management areas, with four former herd management areas now within areas managed by the National Park Service. Of the Bureau of Land Management's remaining nine herd management areas, four are outside the Northern and Eastern Mojave planning area. The National Park Service agreed to manage new park lands to existing BLM authorized herd management levels until management plans were in place. These management levels are 334 burros and 9 wild horses for Death Valley. The existing burro population levels for the new lands added to Death Valley National Park greatly exceed the BLM herd management levels.

TABLE 6: BLM'S WILD HORSE AND BURRO HERD MANAGEMENT AREAS FOR HERDS ADJACENT TO DEATH VALLEY NATIONAL PARK

Herd Management Areas (HMA)	BLM's Herd Management Levels (revised*)	BLM's October 1996 Population Estimate**
Piper	82 burros and 17 horses	5 burros and 54 horses
Lee Flat	9 burros (70%)***	60 burros
Centennial	0 burros and 160 horses (5%)	116 burros and 280 horses
Chicago Valley	27 burros and 27 horses (5%)	6 burros and 9 horses
Total	118 burros and 204 horses	187 burros and 343 horses

* Herd numbers are adjusted to correspond with decrease in herd management area boundaries due to added lands to Death Valley National Park. For example, about 70 % of the Lee Flat HMA is now within Death Valley National Park; therefore 30% of the former herd size (30 animals) equals the revised BLM herd management level, nine animals in this case (.30 x 30 = 9).

** BLM estimates includes animals on BLM and on adjacent NPS lands.

*** Actual percentage of herd management area now within Death Valley National Park

TABLE 7: BURRO AND WILD HORSE POPULATION DATA

	Horses	Burros
BLM's desertwide pre-California Desert Protection Act herd management levels	267	843
Post-CDPA herd management levels (does not include burros and horses on NPS land)	247	307
Actual estimated California desert population*	411	2,343

* BLM 1996 population estimates

Nevada's BLM Las Vegas Field Office has two herd management areas adjacent to the Park, Amargosa and Ash Meadows herd management areas. Both are south of Amargosa Valley, Nevada, and both presently have zero animals and have management levels of zero animals. Other herd management areas within this resource area are at least 6 miles from the stateline. The Bureau of Land Management's policy is to remove all burros outside of their herd management areas. The Tonopah Resource Area has three herd management areas (HMA) adjacent to the Park. Bull Frog burro HMA, near Beatty, Nevada, has a recommended management level of 53 burros; Gold Mountain burro HMA, between Gold Point and Scotty's Junction, Nevada, has a management level of zero burros and 50 horses; and Palmetto horse HMA west of Lida, Nevada, which has a management level of 76 horses (BLM 1997). It was reported that about 50 burros exist in the northern portion of Fort Irwin near the Leach Lake area (Steve Ahmann, pers. comm., 1996).

Units of the national park system must be managed under the mandates of the Organic Act of 1916 (16 U.S.C. 1), the 1970 Act for Administration as amended by the 1978 Redwood National Park Expansion Act (16 U.S.C. 1a-1) and the NPS *Management Polices* (1988). The Endangered Species Act requires that actions by federal agencies do not jeopardize the continued existence of endangered or threatened species or result in adverse modification or destruction of their habitat. It should be reemphasized that the Federal Wild Free-Roaming Horse and Burro Act is not applicable to NPS-administered lands (*Kleppe v. New Mexico*, 426 U.S. 529, 49 l. Ed. 34, 96S. Ct. 2285 (1976)).

Death Valley National Monument was established in 1933. In 1938 there were an estimated 1,500 burros in the monument, occurring in both the Panamint Range on the west and the Amargosa Range on the east side of Death Valley. Burro reduction had started on a limited scale in 1939 and was carried on more extensively between 1958 and 1967. By 1967, 3,570 burros had been removed from the population: 1,790 by live trapping and removal, and 1,780 by direct reduction (shooting). In 1968, due to public sentiment, shooting was discontinued. Although all burros have been removed from the east side of the monument, by fall of 1970, there were an estimated 1,350 in the Panamint Range.

In 1973 the Park staff again began live trapping and shooting burros. About 400 burros were shot before discontinuing the practice in 1978.

Death Valley prepared an environmental impact statement in September 1977, which included 20 options for removal of burros. The Death Valley plan meshed with the interim management plans of the BLM's Bakersfield District, both of which supported NPS policies of removal of exotic species from units of the national park system. A cooperative agreement regarding burro management was drawn up among the Bureau of Land Management, the National Park Service, and China Lake Naval Weapons Center.

The approved plan was conducted in three phases:

> Phase one: Death Valley National Monument's capture and adoption ? Remove all burros through live trapping over a three-year period, turning the burros over to animal protection groups to place in adoptions, live; and to construct 35 miles of fence in Nevada to exclude burros and cows. (In the Nevada triangle portion of the old monument cattle were as severe a problem as were burros).
>
> Phase two: animal protection groups remove stragglers over a one year period.
>
> Phase three: zero population - go to direct reduction - shooting any remaining burros, to approach a zero population.

An agreement (to conduct the roundups) was made with the Bureau of Land Management and with the animal protection groups. The agreement was signed on July 2, 1982. The three-year roundup began in

October 1983. Phase one ended in April 1986, removing alive nearly 6,000 burros. (The 1981 census was 2,501 burros). The government's cost was $1.7 million. Animal protection groups agreed to take all burros captured out for adoption, but took only 60%.

During phase two from fall 1986 to winter of 1987, 230 burros were removed by animal protection groups. Phase three began on July 1, 1987 and will continue as long as necessary within the old monument boundary.

On February 28, 1995, the Superintendent of Death Valley National Park agreed to an interim management policy for burros on lands formerly managed by the Bureau of Land Management. The policy is to maintain the BLM-approved management levels until a final decision is derived through the formal planning process, which includes the preparation and public review of this document. That level is 297 burros and 9 wild horses for Death Valley National Park .

The National Park Service estimates that at least 110 burros per year from Death Valley National Park need to be removed to reach the BLM-approved management levels. Under this interim policy all wild horses and burros removed would be captured and made available for adoption to the public.

In Death Valley National Park the estimated total wild horse and burro populations were about a dozen horses and 575 burros (December 1997 NPS data). The Park's Nevada triangle boundary and its southern boundary near Owlshead Mountains are its only areas where there is no adjacent BLM herd management area.

Death Valley National Park is still managing its burros for its former monument boundary under a management strategy developed when it was a national monument. In 1995, a volunteer burro protection group began removing burros via live capture in lieu of the Park's removal policy. The Park has not abandoned its existing plans for burro removal within the old monument boundary, but has suspended its own removal plans while the volunteer group's efforts are underway. This group has removed about 20–30 burros per year. This volunteer operation has been at minimal cost to the federal government; however, it is questionable whether this removal level is helping to reduce the numbers toward zero.

Since many of the herd management areas are adjacent to National Park Service lands, this plan will consider options, developed with Bureau of Land Management and National Park Service interagency cooperation for wild horse and burro management within both NPS units and BLM lands.

The National Park Service initiated an aggressive removal program in 1999. Approximately 200 burros were rounded up using a combination of a volunteer group and BLM contract wranglers and helicopter. Approximately 190 additional burros were rounded up in 2000 by the same methods as 1999. It is estimated that about 300–350 burros remain in the Park

SPECIES AND HABITATS OF SPECIAL CONSIDERATION

Within Death Valley National Park there are confirmed populations or habitats for 21 state or federally recognized species of concern (see appendix C).

Federally listed species in Death Valley include: desert tortoise (*Gopherus agassizii*), Devils Hole pupfish *(Cyprinodon diabolis)*, southwestern willow flycatcher *(Empidonax trailli extimus)*, least Bells vireo *(Vireo bellii pusillus)*, Eureka Dunes evening primrose *(Oenothera californica* ssp. *eurekensis)*, Eureka Valley dunegrass *(Swallenia alexandrae),* and spring-loving centaury *(Centaurium namophilum)*.

Federally listed species for which final recovery plans exist are desert tortoise, Devils Hole pupfish, Eureka Dunes evening primrose, and Eureka Valley dunegrass. A draft recovery plan is in development

for the least Bell's vireo with a subsequent final plan scheduled for public release in the summer or fall of 1998 (Benz personal communication, 1997).

California listed species, other than those also federally listed or proposed, are California (or western) yellow billed cuckoo (*Coccyzus americanus occidentalis*), willow flycatcher (*Empidonax trailli*), Cottonball Marsh pupfish (*Cyprinodon salinus milleri*), and Mohave ground squirrel (*Spermophilus mohavensis*).

California rare plant species, not otherwise federally listed or proposed, are July gold (*Dedeckera eurekensis*) and rock lady (*Maurandya petrophila*).

The species detailed in the text below are Federally endangered (FE), Federally threatened (FT), Federally proposed threatened (FPT), California Endangered (CAE), California threatened (CAT), or California Rare (CA Rare), Nevada Critically Endangered (NVCE), or Nevada threatened (NVT).

Desert Tortoise (*Gopherus agassizii*) — FT, CAT

The range of the desert tortoise includes the Mojave and Sonoran deserts in southern California, Arizona, southern Nevada, the southwestern tip of Utah, and Sonora and northern Sinaloa, Mexico. The Mojave population of the desert tortoise (an administrative designation for animals living north and west of the Colorado River) is listed as a threatened species by the Federal government and the state of California. Critical habitat for this species was designated in 1994 (FWS 1994). There is no desert tortoise designated critical habitat within Death Valley National Park. The desert tortoise's range within Death Valley National Park extends to its southern half. Within the Park the current populations (and for at least the last 60 years) are not believed to be very numerous.

The Mojave population of the desert tortoise occurs primarily in valleys and on bajadas characterized by scattered shrubs. The soils range from sand to sandy-gravel, though caliche soils, desert pavement, and rocky, boulder terrain are occasionally used. Desert tortoises spend a large portion of the year underground to avoid extreme temperatures and, for younger tortoises, to avoid a variety of predators, such as coyotes, foxes, raptors, and ravens (BLM 1996). Tortoises are active during the spring, early summer, and autumn when annual plants are most common and daily temperatures are tolerable. Additional activity occasionally occurs during warm weather in winter months and after summer rainstorms (BLM 1996).

Species Addressed in the Ash Meadows Recovery Plan

Devils Hole Pupfish (*Cyprinodon diabolis*) — FE, NVCE
spring-loving centaury (*Centaurium namophilum namophilum*) — FT, NVCE
Ash Meadows sunray (*Enceliopsis nudicaulis* var. *corrugata*) — FT, NVCE
Ash Meadows gumplant (*Grindelia fraxino-pratensis*) — FT, Nevada Watch List

Devils Hole is a small tract of land administered by Death Valley National Park while part of a larger spring complex in Nevada called Ash Meadows. Devils Hole falls within the boundaries of Ash Meadows National Wildlife Refuge. A limestone cave at Devils Hole, bearing the same name, is the only natural habitat of the Devils Hole pupfish, listed as endangered by the federal government and state of Nevada. The underground aquifer determines the cave's water level, which has no surface outlet. Historic and ongoing mining of groundwater in Ash Meadows has occasionally directly lowered the water level in Devils Hole, occasionally exposing a shallow limestone shelf on which the pupfish depend for food and spawning (Soltz and Naiman 1978; E.P. Pister, pers. comm., 1997).

Decline of the Devils Hole pupfish drove litigation resulting in a U.S. Supreme Court ruling upholding the maintenance of a minimum water level at the cave. From 1980 to at least 1990, the population status was upward but "persistently small and localized." The species is considered not delistable; criteria for its protection are the maintenance of water levels and water chemistry. Other species of special consideration located at the limestone cave or at springs within the 40 acres are: Devils Hole warm springs riffle beetle, Amargosa tryonia snail (*Tryonia variegata*), (FWS 1990). Water levels are currently monitored by the National Park Service. The combined records from water level monitoring by the National Park Service and the U.S. Geological Survey dating from the 1960s demonstrated a maximum level of recovery in 1989; thereafter, a downward trend has persisted.

The 1990 FWS recovery plan for listed species of Ash Meadows embraced goals of the 1980 recovery plan for the Devils Hole pupfish and addressed the following federally listed species located at Ash Meadows, Nevada, and on National Park Service or BLM-managed areas within adjacent lands in California:

spring-loving centaury (*Centaurium namophilum namophilum*)
Ash Meadows sunray (*Enceliopsis nudicaulis* var. *corrugata*)
Ash Meadows gumplant (*Grindelia fraxino-pratensis*).

Also noted were Ash Meadows endemics including, but not limited to the following:

Listed species

Warm Springs pupfish (*Cyprinodon nevadensis pectoralis*)
Ash Meadows Amargosa pupfish (*Cyprinodon nevadensis mionectes*)
Ash Meadows speckled dace (*Rhinichthys osculus nevadensis*)
Ash Meadows naucorid (*Ambrysus amargosus*)
Ash Meadows blazing star (*Mentzelia leucophylla*)
Ash Meadows ivesia (*Ivesia eremica*)
Ash Meadows milk-vetch (*Astragalus phoenix*)

Other species of concern

Ash Meadows montane vole
white-faced ibis
Amargosa naucorid bug
a host of spring snails (including Amargosa tryonia)
alkali mariposa lily *(Calochortus striatus)*
Tecopa bird's beak.

Not all of the above-referenced species are directly addressable within this plan because they are not found on lands within the planning area; they do, however, merit mention due to a common regional water drawdown threat and potential benefits of regional monitoring and conservation. Decline of the listed species at Ash Meadows has been attributed to groundwater removal, presence of exotic species and habitat alteration.

The Ash Meadows recovery plan describes "essential habitat" for the Devils Hole and Warm Springs pupfish (the latter found only in proximity to Devils Hole) and critical habitat as designated for the following plants and animals:

Amargosa niterwort
spring-loving centaury
Ash Meadows sunray
Ash Meadows gumplant
Ash Meadows Amargosa pupfish
Ash Meadows speckled dace
Ash Meadows naucorid
Ash Meadows blazing star
Ash Meadows ivesia
Ash Meadows milk-vetch

Essential habitat for the Devils Hole pupfish includes 21,760 acres encompassing the area where groundwater removal most influences the water level in Devils Hole.

Although the 1989 *General Management Plan* for Death Valley National Monument called for a transfer of management for Devils Hole to the U.S. Fish and Wildlife Service, this plan and the recovery plan recommends that the National Park Service retain legal responsibility for the 40 acres under its jurisdiction.

Amargosa pupfish and speckled dace, Amargosa niterwort, spring loving centaury, Ash Meadows sunray, Ash Meadows gumplant, alkali mariposa lily, Tecopa bird's beak, and white bear poppy range into California at locations along the Amargosa drainage and at various sites supporting stream, spring, salt marsh, moist alkaline soil, calcareous, or riparian habitats.

Riparian-Dependent Bird Species

southwestern willow flycatcher (*Empidonax trailli extimus*) - FE, sp. level CAE
least Bells vireo (*Vireo bellii pusillus*) — FE
California/western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) — CAE

Mesic habitats in the planning area are not noted for high numbers of the riparian obligates listed above (relative to their known ranges), but such habitats do provide a degree of essential foraging and nesting habitat. To date, other than along the Colorado River, the study of the vireo and flycatcher in the desert have been concentrated along the Mojave River. Small numbers of all three species have been confirmed along the Amargosa River and in Death Valley.

In May 1986, *Vireo bellii pusillus* was federally listed. Its critical habitat was designated in February 1994. Endangered status took effect for *Empidonax trailli extimus* in March 1995, and a final determination of critical habitat was made in July 1997. Listing of the willow flycatcher by the state of California is at the species level. Federal recovery planning is underway for both the vireo and flycatcher. There is no critical habitat located within Death Valley National Park for either subspecies.

The western yellow-billed cuckoo, state endangered since 1988, generally requires a broader stand of riparian growth than the vireo or flycatcher, although loss of riparian habitat is the major common factor influencing the decline of all.

The cuckoo does not appear to be affected by brood parasitism by the brown-headed cowbird (*Molothrus ater*) which is a severe problem for the vireo and flycatcher. In this behavior, cowbirds introduce their offspring to the nest and care of a host bird species, competing directly with the success of the host's young and sometimes eating or ejecting the host's eggs. (Thelander 1994). If a cowbird problem is identified, Death Valley would work with the U.S. Fish and Wildlife Service to develop a solution to cowbird nest parasitism.

Species Addressed in the Eureka Valley Dunes Recovery Plan

Eureka Valley evening primrose (*Oenothera californica* ssp. *eurekensis*) — FE
Eureka Valley dunegrass (*Swallenia alexandrae*) — FE

shining milk-vetch (*Astragalus lentiginosus* var. *micans*) (*note: has been removed from FPT list)*
Sodaville milk-vetch (*Astragalus lentiginosus sesquimetralis*) — CAE, NVCE, (*note: has been removed from FPT list)*

Prior to the administrative transfer to the National Park Service in 1994, the Bureau of Land Management established the Eureka Valley area of critical environmental concern and in 1982, the U.S. Fish and Wildlife Service adopted the *Eureka Valley Dunes Recovery Plan*. Stemming from these, by draft agreement, a voluntary joint conservation strategy is being developed by the U.S. Fish and Wildlife Service and Death Valley National Park to protect sites where there are two federally listed and two sensitive plants. The agreement targets actions over entire dune ecosystems to benefit these plants and other species of special consideration including endemic beetles. Two federally endangered species, Eureka Valley evening primrose (*Oenothera californica* ssp. *eurekensis*) and Eureka Valley dunegrass (*Swallenia alexandrae*), and a sensitive species, shining milk-vetch (*Astragalus lentiginosus* var. *micans*), are only found on dunes within Death Valley National Park. Additionally, the California population of another sensitive species, Sodaville milk-vetch (*Astragalus lentiginosus sesquimetralis*), is located at the Park (Diane Steeck, pers. comm., 1997).

The largest population of Eureka Valley dunegrass is found on high, unstable areas of Eureka Dunes, with remaining known stands located in smaller dunes on the west side of Eureka Valley. The major occurrence of Eureka Valley evening-primrose is at Eureka Dunes, but this species is also known from two smaller sites on the west side of Eureka Valley, growing on lower slopes and dune flats. Eureka Dunes and one site on the western Eureka Valley comprise the known range of shining milk-vetch, which grows on mid- and lower-dune slopes and some sandy flats. Sodaville milk-vetch has been found at Death Valley National Park and at two sites in Nevada; it relies on margins of alkaline wetlands, near cool springs (Diane Steeck, pers. comm., 1997).

Notable recolonization of shining milk-vetch has occurred in areas where motorized vehicle use is no longer authorized, but concerns remain with occasional motorcycle and other vehicle trespass, vandalism to barriers and signs and other human uses, including sandboarding/skiing and horseback riding. Possible encroachment and competition with the mid- and lower-dune endemics by the nonnative Russian thistle (Salsola sp.) is another concern. It is believed that the most persistent threat to the Sodaville milk-vetch population at Big Sand Spring has been habitat trampling and modification by burros and cattle (Diane Steeck, pers. comm., 1997). This area has been fenced by the Park to protect the plants.

Other Death Valley National Park Rare Plants

July gold (*Dedeckera eurekensis*) — CA Rare
rock lady (*Maurandya petrophila*) — CA Rare

The July gold (*Dedeckera eurekensis*) and rock lady (*Maurandya petrophila)* grow only in areas containing carbonate soils.

Cottonball Marsh pupfish (*Cyprinodon salinus milleri*) — CAT

This killifish subspecies is found only in Death Valley, in "portions of Cottonball Marsh on the west side of the central valley floor approximately 5 miles south of Salt Creek" (*Death Valley National Monument Draft General Management Plan* 1988). Threats to its survival include direct and indirect habitat alteration from changes to water levels, quality, and/or chemistry. An overall concern with regional water diversion is not limited to this species, rather, has the potential to affect a large number of sensitive aquatic species (including insects and snails) and riparian obligates.

Mohave ground squirrel (*Spermophilus mohavensis*) — CAT

The only known occurrence of the Mohave ground squirrel in Death Valley National Park is at Lee Flat. This represents the northernmost extension of the squirrel's range, which is limited to the northwestern Mojave Desert. No records exist of traditional or current presence of the squirrel in Panamint Valley nor Saline Valley (Leitner, pers. comm. 1997).

Although previously found in a variety of vegetation associations to 5,600 feet elevation, the species seems to "prefer large alluvial-filled valleys and deep, fine-to-medium textured soils vegetated with creosote bush scrub, shadscale scrub, or alkali sink scrub wherever desert pavement is absent" (FWS 1995a). Winterfat (*Krascheninnikovia lanata*) and spiny hopsage (*Grayia spinosa*) are important dietary components; the squirrel favors forbs in wet years and winterfat in dry years. The diets of domestic sheep more closely overlap that of the Mohave ground squirrel than do those of cattle or feral burros (Leitner, pers. comm. 1997).

The species' state threatened status is based on habitat loss due to agriculture, recreational, and military vehicle use. In 1995, the U.S. Fish and Wildlife Service reviewed a petition to list the species as federally threatened and while advising continued monitoring for impacts due to habitat degradation/ fragmentation and drought, determined a lack of sufficient information to warrant a status review (FWS 1995b; FWS 1995c). Substantial new information is still lacking about recent trends in squirrel populations, historic occupied range, current habitat, and vulnerability of key populations (Gustafson, pers. comm. 1997).

Other Sensitive Animals

Bighorn sheep are found in most of the Park's mountain ranges. Although there has been no recent surveys, Dr. Douglas who has conducted extensive research on bighorn sheep, believes that the sheep populations are stable (UNLV, pers. comm., 1999). Existing threats to this species include tamarisk invasion of springs and resource competition with feral burros.

The many abandoned mines within the Park provide excellent habitat for many bat species. Any mine reclamation and its potential disturbance would initial include an environmental assessment and implementation of mitigation for the bats.

Riparian habitats are valuable for other species as well. The "Partners in Flight" organization lists 14 birds species dependent on riparian habitats including the black-headed grosbeak, blue grosbeak, common yellowthroat, song sparrow, Swainson's thrush, warbling vireo, Wilson's warble, yellow-breasted chat, and yellow warbler.

CULTURAL RESOURCES

ARCHEOLOGICAL RESOURCES

Various cultural resource studies have examined archeological resources in the Death Valley National Park area. The most significant studies are: Hunt, *Archeology of Death Valley Salt* Pan (1960); Wallace, *Death Valley National Monuments' Prehistoric Past: An Archaeological Overview* (1977); Davis, Brown, and Nichols, *Evaluation of Early Human Activities and Remains in the California Desert* (1980); Warren, Knack, and Warren, *A Cultural Resource Overview for the Amargosa-Mojave Basin Planning Units* (1980); Norwood and Bull, *A Cultural Resource Overview of the Eureka, Saline, Panamint and Darwin Region, East Central California* (1980); Brooks, Wilson, and Brooks, *An Archaeological Inventory Report of the Owlshead/Amargosa-Mojave Basin Planning Units of the Southern California Desert Area* (1981); and Fowler, Dufort, Rusco, and the Historic Preservation Committee, Timbisha Shoshone Tribe, *Residence Without Reservation: Ethnographic Overview and Traditional Land Use Study, Timbisha Shoshone, Death Valley National Park, California* (1995).

PLEISTOCENE ERA

During the Pleistocene Era, a period that witnessed a cool, moist climate south of the continental ice sheets, rivers from glacial meltwater formed an integrated drainage system, along with several extensive lakes, including Lake Mojave, that ultimately drained into Death Valley, forming pluvial Lake Manly. Although some researchers believe that they have found evidence of human occupation in the Death Valley region during the Pleistocene Era, such evidence remains a controversial subject.

LAKE MOJAVE PERIOD, 10,000–5000 B.C.

Claims have been made for archeological assemblages dating to times earlier than the Lake Mojave period, but all are debatable and have little or no known relationship to later cultural developments in the Mojave Desert. However, the Lake Mojave complex, which is considered to be a Paleo-Indian assemblage by most archeologists, is also thought to be ancestral to the early Archaic cultures of the Pinto period.

Sites of the Lake Mojave period are nearly always limited to the surface, and it is possible that two or more assemblages are represented at some of these sites. Many of the sites are associated with shoreline features of Pleistocene lakes, such as the shorelines of extinct Lakes Mojave and Manly, and near springs. While some scholars have postulated that the cultural assemblages of the Lake Mojave period were the remains of a widespread generalized hunting adaptation in pursuit of large mammals, others have argued that they are associated with a more specialized adaptation to lacustrine resources of the pluvial lakes or with a more generalized hunting and collecting economy for this early population in which the lakeside sites represented a "marsh orientation" during a portion of the seasonal round.

PINTO PERIOD, 5000–2000 B.C.

Dramatic environmental changes came to the Mojave Desert with the end of the Pleistocene Era, characterized by harsh climatic conditions with higher temperatures and lower precipitation. Lakes and rivers dried up, and resources available were much reduced. Human adaptation to these new environmental conditions appears to be represented by the Pinto period assemblages.

The Pinto sites are most often limited to surface manifestation or have poorly developed middens with relatively low artifact density. They appear to be seasonal camps by small groups of highly mobile people.

The small number of Pinto period sites, together with their apparent temporary occupation of hunting large and small game and collecting vegetable resources, suggests that the population was sparse and poorly adapted to the increasingly arid conditions of the desert environment. During particularly arid periods, they probably withdrew to the margins of the desert and to perennial springs and microenvironments less affected by the overall climatic deterioration, and during more moist periods they likely expanded their territory in the lower desert areas to take advantage of the shallow lakes, marshes, and springs. During the later part of the Pinto period, when the Mojave Desert was at its most arid, the population of the Mojave Desert seems to have decreased, although a mosaic of microenvironments permitted localized habitation throughout the desert.

GYPSUM PERIOD, 2000 B.C.–A.D. 500

The beginning of the Gypsum period coincided with the commencement of a more moist climatic era, often referred to as the Little Pluvial, about 2000 B.C. The Gypsum period was a time of intensive occupation of the desert, coupled with a broadening of economic activities and increasing contact with the California coast and Southwest. The bow and arrow was introduced late in this period, making hunting more efficient. The split-twig figurines and Coso Range petroglyphs, located just outside the planning area, suggest the existence of a rich ritual life.

Although hunting continued to be an important economic pursuit during the Gypsum period, milling stones and handstones became common during this period, indicating increased use of plant foods and reliance on hard seeds. Mortars and pestles and manos and metates are reported at numerous sites within Death Valley and on the Amargosa River, where they dated between 2080 and 3250 B.C. These sites are located near or in mesquite groves, suggesting that the processing of mesquite pods with the mortar and pestle may have become an important element in the subsistence system.

Generally, the Gypsum period was a time in which the Mojave Desert population incorporated new technological items and ritual activities and increased socioeconomic ties through trade. Because of these new means of adaptation, the return of arid conditions toward the end of the Gypsum period had relatively little effect on the Mojave Desert's population density and distribution.

SARATOGA SPRINGS PERIOD, A.D. 500–1200

During this period, large village sites were developed. The settlement pattern in these places appears to have shifted from a circulating pattern of temporary camps to one with more specialized camps radiating outward from the larger habitation sites.

In the northern Mojave, from Death Valley to the Sierra Nevada, the sites of the Saratoga Springs period appear to exhibit cultural continuity with the Gypsum period. The biggest change was most apparent the reduction in size of projectile points as a result of the introduction of the bow and arrow. Changes in subsistence systems cannot be adequately identified, but reduction in mammal hunting such as deer, in the northern Mojave may be postulated. During the Saratoga Springs period, there appears to be a refinement of adaptation to the arid environment of the northwest Mojave. Presumably the beginnings of an eastward expansion occurred at about this time across the Mojave by Numic-speaking groups who were the ancestors of the historic Shoshone and Paiute inhabiting the eastern California desert region at the time of Euro-American contact.

Essentially, the same assemblage was present across the Mojave Desert north of the Mojave River. However, Basketmaker-Pueblo influences increased with Anasazi occupation of the lower Virgin and Muddy Rivers. Research suggests that the Anasazi controlled turquoise mines near Halloran Spring in the east-central Mojave between about A.D. 700 and 900, followed by Hakataya peoples who withdrew about

A.D. 1200–1300. Finally, the Southern Paiute utilized the area in late prehistoric times. The mining of turquoise resulted in Anasazi influence in much of the eastern Mojave, because small parties of these Virgin and Muddy River villagers used the region for intermittent and seasonal foraging. The extent of these forays has not been determined, but it appears to have been considerable, particularly in well-watered areas such as Las Vegas Valley, Ash Meadows, and the Spring Mountains. The area of this influence can be mapped by the distribution of Anasazi sherds occurring in considerable frequency at sites in southern Nevada and in California as far west as the Cronise Basin, west of Soda Lake. Anasazi influence set the eastern Mojave apart from the remainder of the desert.

SHOSHONEAN PERIOD, 1200 A.D.–EURO-AMERICAN CONTACT

The Shoshonean period clearly anticipates the historic Native Americans with evidence of bow and arrow hunting, exploitation of plant resources using milling stones, and use of circular houses. The Anasazi influence faded after A.D. 1200 as a result of changes in climatic conditions, population movements, settlement patterns, social organization, and trade alignments.

This northern Mojave assemblage extended from Owens Valley on the west to the Valley of Fire on the east, and is represented by a variety of sites in Death Valley and the surrounding area.

HISTORIC ARCHEOLOGY

Historic archeological sites in the Park are largely associated with transportation corridors, water sources, and mining and ranching operations of the late 19th and early 20th centuries. The research and information potential of historical archeological sites is an important aspect of their National Register eligibility.

STATUS OF ARCHEOLOGICAL RESEARCH

Although it is estimated that only about 6 percent of the lands within the boundaries of pre-1994 Death Valley National Monument (and an even smaller proportion of the lands added to the monument in 1994) have been surveyed for archeological resources, the overall cultural sequence is well documented. In particular, the archeological research and survey efforts of Alice Hunt and William Wallace, conducted primarily during the 1950s and 1960s, have formed the bulk of extant data about prehistoric native cultures. Over 2,000 archeological sites, covering some 10,000 years of human activity, have been identified. Archeological sites include house circles; habitation areas; complex sites; rockshelters; campsites; workshops; quarries and lithic scatters; hunting blinds; plant food processing stations; storage pits; cemetery and burial areas; rock art (petroglyphs/pictographs); rock alignments; and rock traps or caches. Areas of particular archeological significance within the Park boundaries include Butte Valley, Mesquite Flat, the floor of Death Valley, Grapevine Canyon, high elevation localities in the Panamint Mountains, alluvial fans on the west side of Death Valley, and springs.

More recent archeological survey has been driven by compliance actions and salvage operations related to Park development plans. These efforts, although more up-to-date in terms of professional scientific standards, have sometimes lacked a cohesive research design which would tie them to larger issues of a parkwide or desert-wide nature. As a result, past researchers have often been forced to treat individual sites in different portions of Death Valley as culturally distinct entities, resulting in sometimes confused cultural sequential chronologies.

At present, the National Park Service is completing a three-year systematic, parkwide archeological survey of at-risk areas under a cooperative agreement with the University of California, Riverside.

LANDFORMS AND ARCHEOLOGICAL RESOURCES

While archeological sites are found on virtually every type of landform in the Park, the persistent association of certain features with archeological sites allows for fairly reliable estimates about the types of landforms that are likely to support sites. Proximity to fresh water and food resources are the primary variables influencing Native American site location. For example, a spring in or near a mesquite grove would be an optimal location for a site. An alluvial fan generally lacks resources and would not have been a primary occupation or food collecting and processing site, but may have been the location of food storage facilities or a temporary campsite, trail, burial site, or rock art site, all of which fall outside of the parameters of a model based solely on subsistence variables.

However, previous environmental conditions must also be considered. Ancient late Pleistocene Era/early Lake Mojave Period beach features associated with now-extinct lacustrine and riparian habitat were prime occupation or food collecting and processing sites over 6,000 years ago, in spite of what the present landscape may look like.

Euro-American sites, while generally more easily identified than prehistoric sites, are generally associated with transportation networks and resource procurement/exploitation features. In the Park, transportation routes, water sources, and mining operations are prime locations where such archeological sites may be found. The network of interconnecting roads is usually preserved and is easily discernible from aerial photographs and early maps.

NATIONAL REGISTER OF HISTORIC PLACES

No prehistoric archeological sites or districts within the Park boundaries are listed on or have been determined eligible for listing on the National Register of Historic Places.

Draft National Register nomination forms for archeological districts in the Park that have been prepared include: Butte Valley, Mesquite Spring, Racetrack-Goldbelt, Ubehebe Crater, Upper Emigrant, Upper Panamint, Death Valley Salt Pan, Furnace Creek, Mesquite Flat, Grapevine Canyon, Ibex Spring, Keane Wonder Mine, Saratoga Springs, and Lower Vine Ranch.

The National Park Service is planning to prepare national register nomination forms for archeological districts such as Furnace Creek Wash, Saline Valley, and Eureka Valley.

HISTORIC RESOURCES

Various cultural resource studies and publications have examined historic resources in Death Valley National Park. The most significant studies and publications are: Levy, *Death Valley National Monument Historical Background Study* (1969); Evans, Taylor, and Rapp, *Special Report 125, Mines and Mineral Deposits in Death Valley National Monument, California* (1976); Westec Services, Inc., *A History of Land Use In the California Desert Conservation* Area (1978); Warren, Knack, and Warren, *A Cultural Resource Overview for the Amargosa-Mojave Basin Planning Units* (1980); Norwood and Bull, *A Cultural Resource Overview of the Eureka, Saline, Panamint and Darwin Region, East Central California* (1980); Greene and Latschar, *Historic Resource Study, A History of Mining in Death Valley National Monument*, 4 vols. (1981); Vredenburgh, Shumway, and Hartill, *Desert Fever: An Overview of Mining in the California* Desert (1981); Lingenfelter, *Death Valley & The Amargosa: A Land of Illusion* (1986); Fowler, Dufort, Rusco, and the Historic Preservation Committee, Timbisha Shoshone Tribe, *Residence Without Reservation: Ethnographic Overview and Traditional Land Use Study, Timbisha Shoshone, Death Valley National Park, California* (1995); and Unrau, *A History of the Lands Added to Death Valley National Monument by the California Desert Protection Act of 1994* (1997).

The Park has an impressive inventory of historical resources. The mountains and valleys contain sites associated with early Spanish and American exploration and survey of the vast Mojave Desert region, and the area is laced with remnants of prehistoric and protohistoric Native American trails as well as Euro-American trails, wagon roads, railroads, highways, and other early transportation arteries. The region contains numerous remnants of abandoned mining operations, sites of settlements long gone and nearly forgotten, railroad grades and railway structures. Fence lines, water tanks, and corrals testify to a continuing ranching-grazing industry and scattered remains of homesteads tell of a time when small farming operations were attempted in this arid land. There are significant reminders of early recreational and resort development associated with the advent of tourism to the region, as well as reminders of early federal government administration of portions of the area, including administration, maintenance, and residential buildings constructed by the Depression-era Civilian Conservation Corps.

EXPLORATION

The first known Euro-American visitors to the Death Valley region were more than 100 emigrants who found themselves trying to escape the desolate region after having attempted a "shortcut" from the Old Spanish Trail, across Death Valley, to the northern California goldfields during the winter of 1849–50. The name Death Valley symbolized the suffering and anxiety endured during their wanderings through the isolated region with its stark mountain ranges and arid valleys. Because of the reputation it acquired, the region remained largely unvisited until rumors of its possible mineral riches spread throughout the West during the 1850s and early 1860s, attracting such explorers as E. Darwin French who made discoveries leading to a mining rush in the Coso Mountains west of Death Valley.

During the 1850s, railroad surveying parties reconnoitered the present Park area, attempting to locate a transcontinental railroad route across eastern California. In the fall of 1853, Lieutenant Tredwell Moore led a party of 17 surveyors, financed by the San Francisco-based Pacific and Atlantic Railroad Committee, to the Death Valley region to locate a railroad route through eastern California and find a suitable connecting pass over the Sierra Nevada. Although the party failed to find a railroad route, Moore's assistant, George H. Goddard, a British artist, cartographer, and amateur naturalist, collected more than 600 geological and botanical specimens, and much new country, including the upper reaches of Death Valley, was mapped for the first time.

The next surveyors to enter the Death Valley and Mojave Desert region arrived with contracts for cadastral surveys to run township, range, and section lines for the U.S. Department of the Interior's General Land Office, and subdivide the land into 160-acre quarter sections for settlers who might come someday. William Denton and his crews surveyed the south end of Death Valley and the Amargosa Desert region in late 1856. At the same time, Allexey W. von Schmidt surveyed Panamint Valley to the west. Early the following year, "Colonel" Henry Washington was hired to extend the surveys into the heart of Death Valley and up the Amargosa until he and his surveyors reached what they judged to be the California–Nevada boundary. The surveys, published in the surveyor general's map of California in 1857, provided the first detailed topography of Death Valley, although the valley itself was marked only as an unnamed "Dry Lake."

During 1861, the United States and California Boundary Commission passed through the Death Valley region. Starting from the Colorado River, the commission completed only about one-third of the boundary between California and Nevada toward its destination at Lake Tahoe. It was not until 1872 that von Schmidt returned to the Death Valley country to run the first complete survey of the boundary line from Lake Tahoe to the Colorado River.

Nevada mining interests turned covetous eyes to Death Valley as a possible shortcut route from the state capital at Carson City to the Pahranagat Mining District near the southeastern border of the state. In 1866,

Nevada's first governor, Henry G. Blasdel, accompanied by the State Mineralogist, R. H. Stretch, led a survey party through Death Valley looking for a shorter route.

The search for a route between Owens Valley and Silver Peak and Pahranagat east of Death Valley in Nevada brought another expedition through the Death Valley region during the spring of 1867. This party was led by Cavalry Lieutenant Charles E. Bendire from Camp Independence, a fort that had been established in Owens Valley on July 4, 1862, to protect the growing Euro-American mining and agricultural settlements in that area from Indian attack. The party scouted the region east of Coso, through the Panamints, and across Death Valley to the Amargosa and beyond. Maps compiled by some of the scouting parties from Camp Independence during the years from 1862 to 1877, although not easy to interpret, provide information on early routes that passed through some of the lands that were added to Death Valley National Monument in 1994.

George M. Wheeler's extensive topographic and scientific surveys west of the 100th meridian for the U.S. Corps of Engineers during the 1870s earned him national recognition and made an invaluable contribution to the knowledge of the West. During his first major expedition in 1871, Wheeler's men reconnoitered some 72,250 square miles, covering portions of lower Nevada, eastern California, southwestern Utah, and northwestern, central, and southern Arizona and including the Death Valley and Mojave Desert regions. The success of this expedition enabled Wheeler to obtain congressional support for the extensive program of exploration that he would undertake throughout the remainder of the decade. During 1875, his detachments again penetrated Death Valley via Darwin Canyon and Panamint Valley and the Mojave from the south edge of Death Valley to the Colorado River. The Wheeler surveys recorded data on archeology, geology, botany, zoology, and Native Americans and developed topographic maps of the region.

Beginning in the 1890s, scientific exploration expeditions penetrated the region. One of the most noteworthy undertakings was the U.S. Department of Agriculture's Death Valley Expedition in 1891. Crisscrossing the country from Panamint to Pahrump and Saratoga Springs to Sylvania, this expedition was one of the first in a series of biological surveys of the West conducted by naturalist Clinton Hart Merriam, chief of the department's Division of Ornithology and Mammalogy in Washington, D.C., who initiated studies of the geographic distribution of plants and animals in order to define life zones that could be used to assess the suitability of land for farming and ranching.

During the late 1890s and early 1900s, state and federal government geologists arrived in the eastern California desert to conduct the initial scientific studies of the area's geological formations and mineralogical potential. Surveyors from the U.S. Geological Survey mapped most of the region during the early 1900s, producing the first reliable topographic maps of the region. In 1909, Walter C. Mendenhall, who would later become director of the Geological Survey, issued a guide to the "watering places" throughout the eastern California–southern Nevada desert country, providing detailed information and maps on the main routes of travel and the location and description of irrigating and artesian waters and springs in the region.

TRANSPORTATION

During the early 1900s, Francis M. "Borax" Smith attempted to tap his Amargosa Valley borax properties near Death Valley with a traction road, consisting of a rock base wagon road from his newly developed Lila C. Mine to the California Eastern railhead at Ivanpah II (There were three settlements with the name of Ivanpah). In April 1904, a traction engine left Ivanpah on the inaugural trip, but it completed only 14 miles before bogging down. Smith then determined to build the Tonopah and Tidewater Railroad, extending northward from Ludlow through the region to Beatty, Nevada. Operating from 1907 to 1940, the railroad, along with its feeder lines, tapped the growing mining settlements in the region. Clark would

also construct the Las Vegas and Tonopah, a feeder line extending from Las Vegas to Beatty and Goldfield that passed through a segment of present eastern Death Valley National Park.

MINING

Mining activities in the present Inyo and San Bernardino counties of the eastern Mojave began during the winter of 1849–50. In Inyo County, two of the Forty-Niners who blundered into Death Valley discovered a promising mineral deposit near one of their campsites in Panamint Valley and carried some of the ore out of the Death Valley region. Because this ore was reportedly used later to fashion a gunsight, this has since been known as the "Lost Gunsight Mine." The location of the ore deposit is unknown, but is believed to be somewhere in the Panamint or Argus ranges.

In San Bernardino County, gold was discovered at Salt Springs near the Amargosa River in December 1849. This discovery was made by a member of the Forty-Niners who chose not to take the shortcut through Death Valley. This party was led to San Bernardino by Jefferson Hunt, a veteran of the Mormon Battalion.

Fueled by rumors of the Lost Gunsight, a stampede of prospectors scoured the eastern California desert after the discovery of the Comstock silver deposits in 1858–59. During the early 1860s, two groups of prospectors, one led by E. Darwin French and the other by Samuel G. George, discovered and named mountain peaks, a waterfall, a "volcano" (Coso Hot Springs), an antimony mine in Wildrose Canyon, and gold and silver mines in the Coso and Slate ranges, those over-promoted mines being worked until the mid-1860s. Miners from Aurora, Nevada, traveled south to discover the White Mountain City mines, north of Death Valley, in 1861.

In 1865, silver-lead ores were discovered by Mexican miners at Cerro Gordo in the Inyo Mountains west of Death Valley, and southeast of the valley lead deposits were noted east of Tecopa that would be developed as the Gunsight Mine. Cerro Gordo was the most significant discovery of the 1860s, and its development would stimulate the economy of Los Angeles much as the Comstock had contributed to the growth of San Francisco. Mining engineer Mortimer Belshaw systematically developed the entire hill, now known as Cerro Gordo Peak, conquering problems in linking Cerro Gordo to the outside world, smelting ore, and bringing water to the desolate area. Criticized as a ruthless businessman, Belshaw nevertheless furnished the technology and obtained the capital needed to extract a large percentage of the $17,000,000 in ore values that would be extracted from the peak.

Although the mines at Salt Springs and in the Providence, Coso, and Slate ranges were vacated during the late 1860s because of trouble with Native Americans who sought to protect their traditional lands against the influx of Euro-American miners, the threat of Indian attack was removed by 1870, and prospectors began heading back to the abandoned portions of the desert.

The prosperous national economy after the Civil War stimulated mining ventures in the California desert region, but the bank panic in 1873 and subsequent depression curtailed speculative capital for mining at the moment when three significant discoveries were made west of Death Valley at Panamint (discovered six months before the crash), Darwin, on the west side of the Argus Range, and Lookout, on the east side of the Argus Range. Charcoal kilns in the Wildrose area were constructed to supply charcoal to the area's mines. Of these three silver-lead districts, Panamint, located on the west side of the Panamint Range, was the most famous and least productive. Within two years after its discovery, over-promoted Panamint City was already on the decline. Darwin and Lookout, located just outside Death Valley National Park, shared the spotlight equally as the significant California desert mining districts of the 1870s, each producing approximately $2,000,000. Lesser mining ventures were established at Chloride Cliff and Lee in the Funeral Mountains on the east side of Death Valley.

The discovery of nonmetallics in the eastern Mojave, initially of borax and later of talc, ensured the region's industrial future, because in time these commodities far outweighed the more sought-after metallic elements in lasting commercial value. The first productive mining operations in the Death Valley region focused on the extraction and processing of borax during the 1880s. The first borax mine in the valley was operated at the Eagle Borax Works near Bennett's Well from 1882–84, while the later Harmony Borax Works (1883–88) popularized Death Valley with the famous 165-mile 20-mule team wagon run to the railhead at Mojave. The Conn and Trudo Borax Works operated in Saline Valley, west of Death Valley, from the late 1880s to the early 1900s. Borax was discovered at Old Ryan on the east side of Death Valley in 1903, the result of the Pacific Coast Borax Company's search for a deposit to replace the diminishing ore reserves at its Borate mine. In 1915, New Ryan replaced Old Ryan as the center of the company's operations, when the Biddy McCarthy Mine superseded the Lila C. During the early 1900s, borax and sodium carbonate were mined at Soda Lake. In 1911, the Saline Valley salt deposit was developed, and during subsequent years its production would be transported over the Inyos via an engineering marvel known as the salt tram.

Gold mining dominated mining ventures in the eastern California desert region during the 1890s. The Panic of 1893 resulted in political decisions favorable to gold interests over those of silver ventures. During this time, the widespread use of cyanide for treatment of gold ore sent many prospectors out to rework old dumps, and formerly unprofitable mines were reopened. These developments led to discovery and development of the Ratcliff (Radcliffe) and World Beater mines in Pleasant Canyon, the Gem Mine in Jail Canyon, the Oh Be Joyful Mine in Tuber Canyon on the western slopes of the Panamints, and mines in the Ibex Mountains southeast of Death Valley.

Not until the early 1900s did conditions become conducive to large-scale hard-rock mining operations in the eastern California desert region, prompted in part by the improvement of transportation facilities and by a renewal of interest in gold and silver. The significant discovery at Goldfield, Nevada, in 1903 led to a stampede early the following year. During the fall of 1904, the mining rush extended southward to Rhyolite, and soon spilled over into Inyo and San Bernardino counties in eastern California. A variety of metallic minerals were exploited during the 1900s, including gold (Bullfrog Hills, Skidoo, Ubehebe, Chloride Cliff, Funeral Mountains [especially the Keane Wonder Mine], Black Mountains; antimony (Wildrose Canyon); copper (Greenwater, Kunze, Black Mountains); lead, zinc and silver (Ubehebe, Titus Canyon, Lemoigne Canyon, Galena Canyon, and Wingate Wash); and tungsten (Harrisburg Flats, Trail Canyon). This activity resulted in the formation of boom towns whose progress paralleled for a time the maturation of Goldfield, Tonopah, and Rhyolite in Nevada. Ephemeral mining camps, such Greenwater sprang up throughout the desert region. These mining ventures flourished until the financial panic of 1907, which resulted in an immediate slowdown of work and often total cessation of mining activity.

During the years immediately preceding and during the nation's involvement in World War I, mining in the eastern California desert region experienced a general revival as prospectors began searching the old dumps for overlooked fortunes in manganese, lead, zinc, talc, and tungsten. Darwin and Cerro Gordo, among others, were "rediscovered," and had record productions during the war years. Nitrate prospecting was conducted in the Ibex and Saratoga Springs areas of Death Valley, prompted by the nation's need for the product to manufacture explosives and fertilizers.

Although the inflationary 1920s put a damper on new mineral discoveries and mining development in the California desert, the Shoshone silver mines provided a modest output. Sulphur deposits were opened in the Crater area in northern Death Valley during the mid-1920s and developed during the 1930s and early 1940s.

The 1930s witnessed a revival of gold mining in the desert. Although the major discoveries occurred in Kern County, older districts experienced revivals. Prospect holes appeared where gold was known to have

occurred, and some new discoveries, such as the Marble Canyon placers north of Saline Valley, were made as a result of this heightened interest.

The United States recovered from the Depression largely as a result of the world-wide demand for industrial and military-related products with the onset of World War II. Factories were placed in full production to turn out war materials, and the government paid premium prices for minerals such as tungsten, antimony, manganese, iron, copper, lead, and zinc necessary for military industrial production. Darwin produced more than 100,000,000 pounds of lead and 5,000,000 ounces of silver during 1941–51. Manganese and iron deposits were developed in the Owlshead Mountains south of Death Valley. Concerned that more than 20,000 men were employed at 250 gold mines and 700 placer mines throughout the western United States, the War Production Board issued Limitation Order L-208 on October 8, 1942, classifying gold mines (lode mines producing less than 1,200 tons in 1941 were exempt) as non-essential for the war effort and giving mine owners 60 days to cease operations.

Uranium fever, much like the gold fever of earlier days, swept the eastern Mojave during the mid-1950s. Tungsten prospecting revived after World War II, and a major talc industry that had begun during World War I but had never thrived because of limited markets and remoteness of the deposits revived. Talc has been produced for some years in the Death Valley region, including the Warm Spring-Galena Canyon area, southern Ibex Hills, Owlshead Mountains, and Talc Hills.

RANCHING/HOMESTEADING

Throughout the eastern California desert region, little oases with rich pockets of ground could become for a time more profitable bonanzas than most of the surrounding mineral lands. These isolated patches of fertile soil and perennial springs could produce crops of vegetables, fruit, and hay, or fatten a herd of beef cattle, thus providing quick fortunes for the homesteader or rancher as long as the neighboring mining camps boomed. Although most ranchers held 160-acre homestead claims, they were usually able to irrigate only a fraction of that, while their stock ranged free for miles beyond. The proximity of ranches and mining camps determined the profitability of both, but ultimately it was the size of the ore pocket that limited the size of the salable crop, so as the mines went from boom to bust, so did the ranches.

The natural fecundity of watered land in the region had long been demonstrated by Native Americans, who raised abundant crops of corn, beans, melons, and squash around some of the springs and seeps. During the late 1860s, Mormon Charlie, a progressive Paiute, started a stock ranch east of Death Valley in Pahrump Valley, Nevada, with animals left to him by the miners at Potosi. Euro-American homesteaders soon followed.

Andrew Jackson Laswell, a Kentucky native, is generally credited with being Death Valley's first homesteader, establishing, along with his partner Cal Mowrey, a hay ranch at Bennett's Well during the summer of 1874 to supply the Panamint mines. The Panamint boom also attracted William Johnson, another Kentuckian who started a truck garden and planted fruit trees in the canyon that now bears his name on the west side of Death Valley some six miles east of Panamint City. During the early 1870s, William L. Hunter started a seasonal ranch, which would become known as the Hunter Mountain Ranch, where he left his pack animals, used for his pack train enterprise at Cerro Gordo, to graze while he pursued his mining interests. In 1872, Noah T. Piper, son of English immigrants and a native of Michigan who arrived in California in 1855, established the Oasis Ranch north of the Last Chance Range in Fish Lake Valley to provide foodstuffs for the emerging mining camps in the surrounding areas of eastern California and western Nevada. A few ranchers, such as Charles Murphy who squatted at Pigeon Spring about 1873, also settled in the hills of the Last Chance range north of Death Valley during the Lida, Nevada, boom.

During the late 1870s and 1880s, Euro-American, as well as Native American, settlers established ranches in Death Valley and in areas to the west. Hungry Bill, a Panamint Shoshone, moved back onto Johnson's abandoned ranch, and with the help of George Hansen, generally known as Indian George, replanted the garden, terraced and irrigated several more acres, and set out more peach trees. Hungry Bill's brother, Panamint Tom, established a ranch in Warm Spring Canyon, and Indian George established a ranch at the mouth of Hall Canyon north of Warm Spring on the east side of Panamint Valley. The Saline Valley Indian Ranch, which may have had 125 inhabitants at its peak, was developed using the waters of Hunter Creek, and on June 30, 1892, a 160-acre land grant, consisting of two 80-acre parcels, was issued to Tom Hunter and Caesar, heads of the ranch's principal families. At the north end of Death Valley, Jacob Staininger, who would become known as the "Hermit of Death Valley," patented land in Upper Grapevine Canyon where he raised mustangs and quail and tended a vineyard. The largest and most profitable ranch in Death Valley, however, was the Greenland Ranch at the mouth of Furnace Creek, established in 1883 as part of the extensive borax operation of William Tell Coleman. Ultimately, this ranching operation would become known as the Furnace Creek Ranch, serving as the focus of tourist accommodations and as the headquarters of Death Valley National Park. Nevares Springs, above the Cow Creek residential area, was homesteaded by Adolphus Nevares in the early 1900s where he grew alfalfa, melons, and vegetables.

Many of the best ranch lands in the Death Valley region were located east of the valley on the Amargosa at Resting Spring, Ash Meadows, and Oasis Valley, and farther east at Pahrump where more than a dozen ranches were started during the mining booms of the 1870s. Charles King, a Yankee from Maine who had joined the gold rush to California in 1850, was the first rancher to settle on the Amargosa, purchasing 1,300 head of cattle in southern California and driving them to Ash Meadows in January 1873 to supply the mining settlements of Panamint, Ivanpah, and Chloride Cliff. Philander and Leander Lee arrived in the Amargosa region with a herd of cattle from the San Joaquin Valley during the Panamint rush in the winter of 1874–75, staking out a spring near King. Farther south in the Amargosa, William and Robert Brown started the first ranch at Resting Spring after discovering silver at Tecopa. Another ranch was established on Willow Creek near Resting Spring to serve the Tecopa mines, and after Ah Foo, a Tibetan, farmed it for several years during the 1880s it became known as China Ranch.

During the 1930s–50s, a few families established homesteaded "recreational ranches" in the Goler Wash and Butte Valley areas in the southwest portion of present Death Valley National Park. Examples of such homesteads are the Myers and Barker ranches.

Many homes stood empty in the east Mojave at the beginning of the Depression. Driven by the economic downturn, people moved into some of these abandoned sites and managed to eke out a living, some people attempting to mine gold on an almost primitive scale. These proud people, unwilling to face the urban soup lines, quietly wrote a chapter in the history of the eastern California desert.

FEDERAL ADMINISTRATION

Until the 1930s, the public lands in the region were administered by the General Land Office (GLO), established in 1812 as a bureau in the U.S. Treasury Department and later transferred to the Department of the Interior in 1849. In 1934, the Taylor Grazing Act provided for the segregation of up to 8,000,000 acres (later raised to 142,000,000 acres) for grazing purposes under the jurisdiction of the newly established Grazing Service (GS) in the Interior Department. The Bureau of Land Management was established in 1946, uniting the functions of the former General Land Office and Grazing Service. The Bureau of Land Management was given responsibility for administration and management of all public lands in the United States and Alaska, including its surface and subsurface resources.

On February 11, 1933, President Herbert C. Hoover issued Executive Proclamation 2028 (47 Stat. 2554), establishing Death Valley National Monument under the provisions of the Antiquities Act of 1906. The original monument's acreage of approximately 1,600,000 acres was expanded by presidential proclamations in 1937 and 1952, increasing the monument's size to nearly 2,100,000 acres. Under the provisions of Title III of the California Desert Protection Act of October 31, 1994 (Public Law No. 103-433; 108 Stat. 4471), Death Valley was designated a national park and acquired jurisdiction over more than 1,200,000 of additional lands formerly administered by the Bureau of Land Management.

CIVILIAN CONSERVATION CORPS (CCC)

The Civilian Conservation Corps, established in 1933 as a New Deal unemployment relief measure during the Depression, maintained three permanent camps in Death Valley National Monument during 1933–42 — the twin camps of FuneraRange and Cow Creek (constructed in 1933) and Camp Wildrose (constructed in 1935). The camps were used, and surviving standing structures are still being used, as Park administrative and maintenance buildings. Several spike camps operated for varying periods at Mesquite Spring, Emigrant Canyon, Daylight Pass, and Butte Valley. The CCC developed wells and springs and constructed administration and maintenance buildings, including the Emigrant ranger station, residences, facilities at the Timbisha Shoshone Village, roads, trails, parking areas, campgrounds, picnic facilities, and the monument's airplane landing field and water system.

RECREATIONAL DEVELOPMENT/TOURISM

Recognition of the recreational and Park values of the California desert was first undertaken during the pre-World War I years by such organizations as the Automobile Club of Southern California and the International Desert Protective Association, both of which encouraged their members to tour the desert and assisted them to do so with maps, sign programs, and lobbying campaigns for better roads. Since that time, the eastern California desert region has attracted an ever increasing number of tourists interested in taking advantage of its recreational opportunities, including hunting, trapping, rockhounding, hiking, camping, and sightseeing.

Several resorts were developed in the Death Valley region during the 1920s and 1930s to provide visitor accommodations, thus stimulating travel to the national monument. In 1925, Herman W. Eichbaum began construction of a toll road extending from Darwin Wash to Stovepipe Wells via Panamint Valley and Towne Pass. The following year, Eichbaum opened the Stovepipe Wells Resort, consisting of 20 modified tent houses, restaurant facilities, a swimming pool, tennis courts, and a landing strip for the first passenger air service to Death Valley.

About 1927, the Pacific Coast Borax Company converted its employee dormitories at New Ryan to the Death Valley View Hotel and its headquarters building at Death Valley Junction to the Amargosa Hotel. Both resorts, however, were short-lived.

The Furnace Creek Inn was opened in 1927 by the Pacific Coast Borax Company. Like Stovepipe Wells, Furnace Creek Inn employees conducted motor trips to area attractions and led tours to local borax mines. The facility included a swimming pool, golf course, and tennis courts.

Furnace Creek Ranch, initially operated as a ranch associated with the borax operations of William Tell Coleman, was developed into a resort by the Pacific Coast Borax Company in 1933, designed to provide less costly lodgings than the Inn. The ranch features the Borax Museum, telling the story of borax extraction in Death Valley.

During the 1930s, a short-lived small resort and water bottling enterprise was established at Saratoga Springs, and a store, cafe, gas station, and cabins were constructed in Wildrose Canyon, the latter being used until the 1970s when they were removed by the National Park Service.

Construction of Scotty's Castle, a vacation retreat for millionaire Albert Johnson and his wife Bessie on Jacob Staininger's old Upper Grapevine Ranch, began about 1922. Construction continued until 1931, but the never-completed castle became a well-known tourist attraction because of its association with the widely reported antics of Walter Scott (Death Valley Scotty). During the mid-1930s, tours were offered to castle visitors and the Johnsons began charging entrance fees, hired people to staff the tours, and opened a small gift shop. The Gospel Foundation, established by Johnson to administer the castle prior to his death, provided formal tours, overnight accommodations, a gift shop, and a cafe until 1970 when the property was purchased by the National Park Service. The complex looks much as it did during the 1930s, and interpretation and preservation efforts have been focused on the 1931–54 period, the latter year being the date of Scotty's death.

TIMBISHA SHOSHONE VILLAGE

The Timbisha Shoshone people have lived in and around Death Valley since prehistoric times. During the late 1920s and early 1930s, members of the Tribe lived in four different locations in the Furnace Creek area. Finally in 1936 the Bureau of Indian Affairs and the National Park Service agreed on a site for a permanent residential area south of Furnace Creek Ranch. This site of approximately 40 acres became known as the Timbisha Shoshone Village.

In 1936, under NPS supervision, construction started on nine adobe residences, using materials provided by the Bureau of Indian Affairs. Adobe was one of the common construction materials of the day, also used in many NPS structures.

The following year two communal facilities— laundry and a trading post–were constructed by the Civilian Conservation Corps under NPS supervision. Up until the 1940s, the village adobe structures housed most of the Timbisha Shoshone families living in the Death Valley area. Some moved elsewhere during World War II because of the lack of employment opportunities in the area of the Park. In the 1950s the National Park Service removed five adobe structures that were perceived to be vacant or semi-occupied, leaving six structures.

During the early 1980s, the remaining structures were rehabilitated and additional housing was purchased and moved to the village. The village has maintained a population of approximately 40–50 persons through the 1980s and the 1990s.

Beginning in the 1930s, and for many years afterwards, the Tribe was issued a permit for use of the village site. In 1983 the Timbisha Shoshone Tribe was granted federal recognition by the Secretary of the Interior. No permitting procedure has been used for many years.

WARM SPRINGS – SALINE VALLEY

Three natural hot springs in Saline Valley, known collectively as the Warm Springs, have become a popular recreational spot during the post-World War II era. Although events surrounding the early recreational use of the Warm Springs are somewhat obscure, local Euro-Americans had begun visiting and soaking in the springs by the early 1940s. By 1947, a small concrete tub had been constructed at the Lower Warm Spring, presumably by a cattleman or a sheepherder, to catch the runoff.

As growing numbers of people began visiting Lower Warm Spring, the most accessible of the three springs, to camp and soak in the warm water, the area slowly became "trashed." Despite the gradual

"trashing" of the Warm Springs vicinity, however, some visitors wrote accounts describing the natural beauty of the area. During the fall of 1964, visitors to the Warm Springs began cleaning up the area, and in 1965 a new and larger tub was constructed at the Lower Warm Spring that could accommodate as many as a dozen people for soaking.

Palm Spring, sometimes referred to as Middle Warm Spring, is located about one-half mile above Lower Warm Spring. Less protected from the wind and sun than Lower Warm Spring because it is not surrounded by mesquite trees, it nevertheless became increasingly attractive as an alternate soaking area, partly because of the panoramic view of the surrounding valley and mountains that it provided. Like Lower Warm Spring, Palm Spring has a source pool of its own. People soaked in the source pool until 1968 when a group of users built a small retaining wall around the pool, laid a buried pipe to it, and constructed the first soaking pool.

The isolated Upper Warm Spring, located some three miles above Palm Spring, has no man-made soaking facilities. During the early 1980s, however, the Bureau of Land Management constructed a fence around the spring to prevent feral burros from having access to the water. Desert pupfish were introduced in the springs, but they did not long survive. Thereafter, Upper Warm Spring was used as a soaking site by those who wanted to get away from the more popularly-used springs below.

By the late 1960s the Warm Springs had become a mecca for "hippies" and those preferring hedonist lifestyles characteristic of the era. Since that time, the Warm Springs have been the focus of steadily increasing visitation as a result of word of mouth recommendations and listings in popular hot springs literature. Whereas one party a week was common during the early 1960s, visitors began to stay at the springs for longer periods of time. Often parties of two or more began to camp at the springs for weeks or months, particularly during the winter season, but the greatest use of the springs came from "regulars" who began to make short but frequent trips to the springs. To accommodate the growing numbers of visitors during the 1960s and 1970s, the users constructed various improvements at Lower Warm Spring, including several larger soaking pools, a deck, separate pools for washing dishes, and a fish pond. In addition, a lawn and palm trees were planted and two airstrips were laid out nearby.

During the past two decades, "regulars" to the Warm Springs, "consisting of an eclectic collection of bohemians, loners, individualists, tourists, and others who simply share a love for hot springs and a desire to escape from the complexities of modern life," have developed an informal self-policing community that maintains and cleans the springs and their vicinity. As a result of the increasing concern of springs' users that federal land management agencies would regulate activities at the Warm Springs, the users have formed an organization to protect their interests — the Saline Preservation Association (SPA).

CULTURAL LANDSCAPES

Many cultural landscapes exist in the Park that are potentially eligible for listing on the National Register, but cultural landscape studies have not been undertaken to identify their character-defining elements. Landscapes reflecting mining, ranching, ethnographic, and administrative activities can be seen throughout the Park. Especially significant landscapes are found at Scotty's Castle, Lower Vine Ranch, and the salt tram in Saline Valley, and, in association with many of the CCC-era national monument administration structures. Other significant cultural landscapes include the: (a) contemporary Timbisha Shoshone Village; (b) Chloride Cliff and Keane Wonder mining sites; (c) Cow Creek CCC maintenance yard and administrative area; (d) Harmony Borax Works; (e) various large and small mining sites; (f) cultivated areas and orchards connected with ranching and agricultural activities; and (g) extensive layouts of gardens, groves, and recreational facilities related to tourist resorts.

NATIONAL REGISTER OF HISTORIC PLACES

Six historic period properties in Death Valley National Park are listed on the National Register of Historic Places:

- Skidoo — April 16, 1974
- Harmony Borax Works — December 31, 1974
- Eagle Borax Works — December 31, 1974
- Saline Valley Salt Tram Historic Structure — December 31, 1974
- Leadfield — June 10, 1975
- Death Valley Scotty Historic District — July 20, 1978

Five historic properties in the Park have been determined eligible for listing on the National Register of Historic Places:

- Residential, Administrative, Maintenance, and Visitor Use Facilities in Death Valley National Monument Built by the Civilian Conservation Corps — (Multiple Property Nomination) — May 10, 1989: Camp Wildrose Historic District, Cow Creek Historic District, Emigrant Junction Comfort Station (E-85), Park Village Comfort Station (PV-69), Texas Spring Campground Comfort Stations (TS-113, TS-114) and stone picnic tables
- Original Bullfrog–Bullfrog West Extension Mine — September 18, 1980
- Homestake-King and Gold Bar Mines and Mills — July 6, 1981
- Las Vegas and Tonopah Railroad Grade — July 8, 1981
- Lee Historic District — October 5, 1982

Seventeen draft national register nomination forms have been prepared for the following properties in the Park in connection with the aforementioned *Historic Resource Study: A History of Mining*. The forms have been submitted to the Pacific-Great Basin Support Office in San Francisco, but no formal determinations of eligibility have been processed for them:

- Big Talc Mine
- Garibaldi Mine
- Gold Hill Mill
- Harrisburg Historic District
- Hungry Bill's Ranch Historic District
- Journigan's Mill
- Lemoigne Mine and Cabin
- Lost Burro Mine and Mill
- Panamint Treasure Mine
- Queen of Sheba Mine
- Wildrose Canyon Charcoal Kilns
- Chloride Cliff Historic District
- Echo Canyon Historic District
- Greenwater Historic District
- Keane Wonder Historic District
- Corduroy Road
- Furnace Creek Wash Historic District

Three draft national register nomination forms have been prepared for the following historic properties in the lands that were added to the national monument in 1994:

- Barker Ranch
- Panamint City
- Gem Mine and Mill

Four draft national register nomination forms were prepared by the Timbisha Shoshone Tribe through a NPS Historic Preservation Grant:

- Mushroom Rock
- Ubehebe Crater
- Navel Spring
- "Tumpisa" District (Furnace Creek area)

MUSEUM COLLECTION

Park staff are responsible for monitoring, documenting, and preserving a large, diverse museum collection that includes more than 177,000 cataloged objects and specimens, some stored in substandard conditions. An additional 23,000 archeological artifacts and records are at the NPS Western Archeological Center in Tucson, Arizona. Museum collections include historical objects and archival documents, archeological artifacts, ethnological materials, biological specimens, geological samples, and paleontological materials. Numbers of currently cataloged objects in the various disciplines range from an estimated 78,900 historical objects to approximately 280 ethnological items. There are potentially 1,600 objects associated with the Native American Graves Protection and Repatriation Act of 1990. Many of these objects may be returned to the Tribe as a result of this act.

In 2000, the National Park Service opened a new state-of-the-art curatorial facility at Cow Creek. The museum collection constitutes an important part of the overall resources offered by the Park. In historic districts, the collection constitutes a primary resource that visitors view. A relatively large number of historic objects are on display in the national register–listed Death Valley Scotty Historic District. Diverse material types are exhibited in the historic house museum as well as on the grounds.

RELATIONSHIPS OF NATIVE AMERICAN CULTURES TO THE DEATH VALLEY AREA

For millennia, American Indian peoples lived within the Death Valley area, using the resources and lands to sustain their lives and cultures. These lands have been and continue to be subject to active, often dramatic, and ever-changing natural forces that can alter water supplies, change vegetation zones, make new landforms from tectonic or volcanic events, and include cutting or filling geological processes. Climatic changes that have occurred since the end of the Ice Age have altered moisture in lakes and marshes, affected animal populations and plant life, and challenged humans to adapt. This area is characterized by a series of parallel, northward-draining trough-like valleys between north-south oriented mountain systems that form rain shadows, resulting in more evaporation than precipitation and general aridity. The basic necessities for human life of American Indian peoples are present — water and food, materials for tools, access to routes for traveling, special places for spiritual rites that continue today, and a sense of land association and place identity. These peoples' presence has resulted in a tangible heritage of cultural materials, remembered place names and associations, and attachments to the land from history to modern times.

Nonnative people describe lands as typical of the Great Basin geomorphological zone and of the Sonoran-Mojave Deserts in biological terms. From valley floors to mountain peaks, a series of environmental zones is described from lower elevation scrub plant communities, through Joshua Tree and pinyon/juniper woodlands, to higher elevations of mixed pine and pinyon woodlands. The valleys often contain dry lakes or playas. Transitional foothill zones are cut by drainage systems, forming seeps, springs, and active seasonal streams. To American Indians now known as Mojave, Shoshone, Paiute, Serrano, Chemehuevi, and Kawaiisu, the lands were occupied and used in many ways, with flexible boundaries among these tribal groups. These tribes are differentiated by language, varied subsistence patterns, and self-identification. Specific historic geographical associations to the planning area and places are known from compilations of information used in Federal Indian Land Claims court cases during the 1950s and 1960s.

In general, tribal peoples historically occupied their lands in small, mobile social units of related families who traveled in regular patterns, establishing summer or winter camps in customary places with water supplies, often located at a border between scrub or woodland zones. Some localities contained richer and more dependable food resources than others, but the lands did not support large numbers of persons at any one location. Many plants yielded seed, nut, tuber, or fiber foods, prepared for consumption or for storage at convenient caches. Large or small land mammals were hunted or caught, birds such as doves or quail were snared, and reptiles were collected, but not all plants or fauna were sought. The diet for these native peoples was largely vegetarian, supplemented by mammals, reptiles, and insect sources. Certain places on the lands were and are today considered specially significant; for example, landforms named in oral accounts of travels by supernatural beings, "hot" springs that have curative purposes, petroglyph sites believed to be the products of the shamans' supernatural helpers, or topographic landmarks identified in complex chants known today as "bird songs." In essence, "oral maps" of the planning area still exist today in ceremonial knowledge held by certain Mohave and Chemehuevi individuals. Other tribal members have documented descriptive names in Shoshone language for places of settlement, gathering camps, and other important locations in the study area.

In the past two centuries American Indians inhabiting the area have changed their territorial ranges in reaction to European and later American direct and indirect pressures, as well as intertribal struggles. A U.S. military presence increased at Camp Cady, east of Mojave National Preserve, at established posts in the Owens Valley, and at Fort Mohave along the Colorado River in response to increasing numbers of American settlers, miners, and ranchers. This resulted in establishment of more concentrated reservations and communities by the early 20th century. Earlier movements were caused by groups of families moving

toward growing towns, shifting populations from more traditional scattered patterns. For example, from the southern Nevada portion of Southern Paiute-held areas, people now known as Chemehuevi had moved toward the Colorado River valley early in the 19th century. Kawaiisu, Koso (also known as Panamint Shoshone) and Serrano peoples were jointly using terrain around the Granite and Providence Mountain ranges during the 19th century. Four parcels of land held in trust for American Indian families and individuals became established around Death Valley. These Bureau of Indian Affairs allotments of 160 acres each of trust land, designated for residential and ranching purposes for families already living in the immediate area, were called Indian Ranch, Saline Valley Ranch, Warm Springs Ranch, and Hungry Bill's Ranch. Lands within Indian Ranch and Saline Valley Ranch are now retained by descendants. The Warm Springs and Hungry Bill's parcels were purchased for inclusion in the former Death Valley National Monument.

In the 1950–1960s, Federal Indian Lands Claims cases involving Chemehuevi, Mojave, and Owens Valley Paiute tribes included documented occupation and use of many mountain ranges, valleys, and resources in the Northern and Eastern Mojave planning area. Today's tribal governments and communities historically associated with the study area are as follows:

- Lone Pine, Fort Independence, Big Pine, and Bishop Indian Reservations were originally established by presidential executive order in 1912. These Owens Valley reservations were altered by land exchanges in the late 1930s for residential purposes for Owens Valley Paiute populations. Each reservation is several hundred acres but cannot support development of tribal enterprises. Wage work, some small-scale ranching and gardening, and some crafts provide income to tribal members. Each community is from 250 to 400 enrolled persons, including intermarried Shoshone and other individuals.

- Timbisha Shoshone tribal peoples include those known as Coso, Panamint and Death Valley Shoshone who ranged within a large area including most of Death Valley National Park and nearby Bureau of Land Management Lands north of Ridgecrest, CA, and along the Nevada–California state line. The Timbisha Shoshone Tribe was federally recognized in 1983 and has approximately 300 enrolled members.

- The Las Vegas Piute Tribe is composed of "Nuwuvi" people, called Paiute by others, who inhabited present-day southern Nevada from pre-European time to present. In 1911 a small parcel of trust land was established near the town of Las Vegas. Today, the Tribe owns the original 16-acre area and a 3,800-acre area north of metropolitan Las Vegas. The Tribe numbers about 100 people who gain their economic support from tribal tourism enterprises, retail sales, and wage work.

- The Pahrump Paiute Colony is a nonfederally recognized community of Paiute families in the Pahrump, Nevada area. This organization has served the social and political purposes of the people for more than two decades. It has an informal council leadership and operates on traditional principles of consensus. Population is unknown.

VISITOR USE, SERVICES, AND FACILITIES

Death Valley National Park has long provided recreational opportunities for people from all over the world. Its nearness to major population centers such as Los Angeles and Las Vegas, combined with major interstate highways, gives residents the opportunity for relatively easy access to many parts of the desert. Most of the landscape is open, with broad vistas of relatively undeveloped land. The vastness of the landscape offers visitors an opportunity for seclusion and a sense of wilderness, even while in a vehicle. Early miners and ranchers developed roads that today offer visitors a chance to drive into many remote locations where informal camping has traditionally occurred. The many roadless areas offer hikers the experience to explore. There are many cultural sites such as abandoned mining districts that many people love to visit. The mountain ranges, such as the Panamint and others offer a contrast to the dry hot valleys, attracting many people in the summers with cooler temperatures and forested areas. Exposed geology and unique wildlife and vegetation are other elements that attract people. The land has many extremes and contrasts which people come to experience, such the high summer temperatures. Most visitors come to the desert simply to see the outstanding scenery of this diverse landscape.

OUTDOOR RECREATION

TABLE 8: DEATH VALLEY NATIONAL PARK ANNUAL VISITATION

Year	1985	1990	1995	1997	1998	1999
Visitation	576,400	691,000	1,109,400	1,222,762	1,222,848	1,273,830

Most visitation to Death Valley National Park has historically occurred during the cooler months of fall, winter and spring, but recent visitation figures indicate that visitation during the summer months has increased significantly to the point that Park staff no longer consider summer the slow part of the year. The months with the highest visitation figures in past years had been November, March, and April. High visitation in November is associated with the 49ers encampment. Recent visitation figures show a close balance between visitation in cool and hot months.

Death Valley has attracted people for many reasons, but the prime reasons seem to be the scenic beauty, the opportunity to visit the lowest and hottest place in the Western Hemisphere, and the notoriety of the name "Death Valley." People are also drawn to the area because of the contrasts that the desert provides to their place of residence. The majority of all visitors spend their time on the paved roads sightseeing and going to major attractions such as Dantes View, Scotty's Castle , and Badwater. Currently, very few of the total number of visitors venture onto unpaved roads to visit the remote sections of the Park. These sections include such places as Eureka Dunes, Saline Valley and Hunter Mountain, but that number is expected to increase as a result of recent newspaper and magazine articles and the promotion efforts of local communities.

Visitor surveys were conducted in 1990, 1994, and 1996. The 1990 survey was conducted by contacting visitors in developed and remote areas of the Park. The 1994 survey focused on backcountry areas of the Park and the 1996 survey was conducted in developed areas and major visitor attractions. The 1994 survey included Saline Valley. The results of these surveys indicate that visitors participated in the following activities:

TABLE 9: DEATH VALLEY NATIONAL PARK VISITOR ACTIVITIES

Activities	July 1990 Visitor Survey	March 1994 Backcountry Survey	September 1996 Visitor Survey
Viewing the scenery	96%	97%	96%
Took photographs	91%	NA	92%
Day hiked on trails		74%	
Day hiked cross-county	NA	33%	
Day Hiked <2 hours	32%		42%
Day Hiked >2 hours	5%		7%
Visits to mine or historic sites	37%	73%	37%
Toured Scotty's Castle			18%
Picnicked	NA	45%	
Went Shopping	50%	NA	
Car camped overnight		23%	
Drove on dirt road in non 4x4 vehicle		45%	26%
Drove on dirt road in 4x4 vehicle		44%	6%
Rode bike on dirt road		10%	

Blank cells indicate that no information was available on this topic for that particular survey.

Other activities which reported less than 20 % participation include: visiting Scotty's Castle, stargazing, driving backcountry roads, taking a tour of the castle, hiking more than two hours, golfing and a mixture of other miscellaneous activities.

- 72% of foreign visitors were from France, Germany and Switzerland.
- 21% of all visitors were from California.
- 72% of the visitors spent less than 1 day in the Park.

The 1994 backcountry (remote sections of the Park) survey asked people why they came. People gave the following reasons:

- 96% came to view desert scenery
- 82% came to enjoy the wilderness and open space
- 81% enjoyed recreation such as hiking, driving back roads and camping
- 78% came to experience solitude and quiet
- 57% were there to learn more about local history
- 56% came to view and study plants and animals
- 16% came for "other" reasons such as photography, riding bicycles, study geology and geography, enjoy the warm clean air, and visit family and friends

The backcountry of Death Valley has been primarily used by California residents who return to seek solitude and desert scenery. Most visitors took day hikes and visited cultural sites. The survey also sampled visitors in the recently acquired Eureka and Saline Valleys. The Saline Warm Springs area continues to attract many visitors. It is estimated that 14,000 people travel the Saline Valley road each

year. Park rangers reported approximately 120 vehicles parked at the warm springs the day after the Thanksgiving holiday in 1996. Visitors on the ground on that weekend reported the number of vehicles at 76. Visitation to the Eureka Dunes is unknown at this time, but recent observations indicate a steady flow of visitors during the cooler months. Visitation to the Greenwater Valley and Saratoga Springs is relatively light at this time but may increase in the future.

There is a growing number of people who are choosing to explore the land with a mountain bike. Bicyclists have traveled the Saline Valley road and the Steele Pass road, which connects Saline and Eureka Valleys. BLM rangers have reported an increase in mountain bike use in the Deep Springs Valley, which is north of Eureka Valley. A 1995 backcountry visitor survey for Death Valley indicated that 10% of the users had ridden bikes on dirt roads.

TABLE 10: DEATH VALLEY NATIONAL PARK VISITOR PROFILE

Visitor Profile	July 1990 Visitor Survey	March 1994 Backcountry Survey	September 1996 Visitor Survey
California Resident	21%	59%	32%
Foreign Country	72%	9%	69%
Repeat visitor	19%	56%	18%
First time visitor	82%	44%	82%
Average age	41 years	43 years	43 years
Average length of stay	72% stayed less than 1 day	48% stayed 2–3 days	66% stayed less than 1 day

Death Valley is an internationally recognized destination. Commercial tour groups visit Death Valley, often as part of a loop tour, which includes Las Vegas, Grand Canyon and Yosemite. Overnight stays associated with tour buses have increased significantly from 342 buses in 1983 to 2,185 buses in 1995. Many Europeans come by rental car and Asian visitors often come in tour buses. International tourism continues to be strong as currency exchange rates continue to be favorable. Many Europeans come during the hottest part of the summer to experience the extreme temperatures of summer and a landscape that is often a drastic contrast to their homeland.

VISITOR INFORMATION CENTERS

The Park has visitor centers at Furnace Creek and Scotty's Castle. The largest complex, centrally located at Furnace Creek, includes a staffed visitor information desk, interpretive displays on the natural and cultural features of the Park, a large auditorium featuring both orientation film and slide programs, and a sales outlet of the Death Valley Natural History Association. This facility, completed in 1960, was planned when annual visitation was 250,000. Its interpretive mediums are dated and focus on the monument lands. The 49ers association has provided assistance to the development of the visitor center.

Scotty's Castle visitor center is located in one of the historic structures north of the castle. New displays, which will depict the history of the people, construction of the buildings, acquisition by the National Park Service, and the significance of the complex are now in place. The visitor center contains a sales outlet, and during the summer season, it serves as a general information and ticket sales counter. The guided tour of the castle involves employees dressed in period costumes that tell the story of how the castle came to be and of the individuals who lived there.

Staffed information/fee collection stations in Beatty and at Stovepipe Wells operate on a full schedule seven days a week year-round. Ranger stations at Grapevine, Wildrose, and Shoshone provide visitors with information and operate with available volunteers.

The Park supports a multiagency information center at Lone Pine serving visitors accessing Death Valley from the Owens Valley to the west. Mojave National Preserve's Baker facility assists visitors approaching the Park from the I-15 corridor to the south. These facilities provide information, orientation, and interpretation for the Park and the region.

CAMPGROUNDS

Death Valley National Park has nine developed campgrounds that offer a variety of camping experiences. Most campground use occurs primarily from November through April because of the cooler temperatures. Most visitor use is concentrated at Furnace Creek and Stovepipe Wells. The Sunset campground at Furnace Creek consists of an expansive open area, which is used by recreational vehicles and trailers. Many people stay overnight in recreational vehicles, but the number of such users appears to be declining. The Park recorded 231,902 overnight stays by recreational vehicles in 1979 compared to 165,253 in 1995, a 28% decrease in RV users. Campgrounds at Furnace Creek and the group site at Texas Springs are on a campsite reservation system. Furnace Creek, Stovepipe Wells, Sunset and Texas Springs campgrounds are wheel chair accessible. Mahogany Flat, Thorndike, and Wildrose, on the west side of the Panamint mountain range (4,100–8,200 feet elevation), are subject to seasonal closures due to snow and other weather.

Death Valley has over 600 developed campsites. The following is a list of the campgrounds and their campsite numbers:

- Emigrant — 10 sites
- Furnace Creek — 136 sites
- Mahogany Flat — 10 sites
- Mesquite Spring — 30 sites
- Stovepipe Wells — 200 sites
- Sunset — 1000 sites
- Texas Spring — 92 sites
- Thorndike — 10 sites
- Wildrose — 30 sites

In 1997 five all campgrounds charged a fee, either $16.00 or $10.00. Emigrant, Mahogany Flat, Thorndike, and Wildrose campgrounds do not charge fees.

The entrance fee to the Park in 1997 was $10.00. Fees are collected at the Grapevine Entrance Station, Beatty ranger station, Stovepipe Wells ranger station, Furnace Creek visitor center, and Baker visitor center. This is paid on a voluntary basis at all locations except the entrance station. Since there are no entrance stations on State Highways 190 or 178, it is not known how many people traveling these roads actually pay the entrance fee.

BACKCOUNTRY CAMPING

The backcountry is defined as any area located away from Park development such as campgrounds, visitor or administrative facilities; typically a place where development is out of view. Designated wilderness is included within backcountry areas.

Eureka Dunes and Saline Valley Warm Springs have informal campgrounds, which receive moderate to heavy use. The dunes are easily accessible by car while the springs can be accessed by car if the weather provides for good road conditions. The National Park Service traffic count figures indicate a monthly average of 200 cars that go to the dunes. The dunes are habitat to two endangered plants. One of the major threats to these plants is illegal offroad vehicle use. There are an estimated four or five informal campsites north of the dunes along dirt roads. Visitors may also camp along a spur road northeast of the dunes. A day use parking area with a vault toilet and two or three picnic tables is located on the northwest corner of the dunes.

Another day use parking lot is located on the north central end of the dunes. This parking area is large enough to handle an estimated fifteen to twenty cars, depending on how people use the space. A two-foot-high pipe fence frames part of the parking lot to contain vehicles and discourage any driving on the dunes. The parking lot provides direct access to the dunes for hikers and those wanting to play on the sand. To protect endangered plants, minimum impact activities are encouraged.

Saline Valley Warm Springs receives use throughout the year. Over several years, visitors to the springs have built concrete hot tubs, a water system for the tubs, dug pit toilets, maintained the short access road, planted palm trees and a lawn to make their time at the springs more comfortable. In 1997 the National Park Service initiated the 30-day limit on camping that exists in the old monument. Marking posts have been placed in the ground to define the wilderness boundary surrounding the area in an attempt to keep vehicles out of wilderness and designate the camping area.

Public use of the springs has a history that goes back many years, but use began to rise during the 1960s, with this use level being sustained through the 1970s, 1980s, and into the 1990s. The place developed a social culture of its own, highlighted by a spirit of independence and freedom from the norms of traditional society of the day. Before the National Park Service obtained this land, visitors to the springs had developed their own social order and developed and managed constructed pools, camping and other facilities relatively independent of government funding or oversight. Visitors to the springs continue to provide maintenance to the facilities they have constructed, with the Park Service evolving the use and management of the area as a national park.

Backcountry camping must be more than 200 yards from any water source but is allowed at previously disturbed campsites that are 2 miles beyond developed areas, maintained roads, or day use areas. Camping is not allowed near the Inyo Mine, Lost Burro Mine, and Ubehebe Lead Mine or off several "day use only" dirt roads such as Titus Canyon and Racetrack road.

COMMERCIAL SERVICES

There are no commercial operation facilities located on federal lands recently acquired. Commercial use permits have been requested for filming and guided horse pack trips tours. More permits for other nonfacility-based commercial operations will most likely be requested in the future. Park employees review compliance requests with Park regulations and approve appropriate uses.

Amfac Resorts operates a major visitor resort with lodging, food services, recreation, and employee housing. All of the commercial services are located on private land and are not under control by the National Park Service. Park management continues to work on a cooperative relationship between Amfac's local manager. The Furnace Creek Inn and Ranch are their two major operations, both located on 342 acres of private property. Amfac also manages the concessions operation at Stovepipe Wells, which has lodging, a restaurant, gas station, and swimming pool. They also manage a snack bar and gift shop at Scotty's Castle . Both operations at Stovepipe Wells and Scotty's Castle rest on NPS land and are subject to NPS controls on pricing and operations. The private operations at Furnace Creek provide visitors with 294 rooms, 2 swimming pools, an 18-hole golf course, tennis courts, restaurants, gift shops, a service station, and general store. During the fall, winter, and spring, visitor accommodations are often sold out. Amfac now has 300–325 employees living at Furnace Creek; 89–90 live at Stovepipe Wells and 6 live at Scotty's Castle.

Panamint Springs Resort is on Highway 190 within the Park. This commercial operation is on private land and serves as a western gateway to the Park. The Park Service has no control over this operation but works in a cooperation with the owners. The resort has camping, lodging, a restaurant, and gas pumps.

SOCIOECONOMIC DESCRIPTION OF THE PLANNING AREA

Additional information on the socioeconomic environment is provided in a separate analysis entitled "Economic Impact Analysis: Northern and Eastern Mojave Planning Area" by Dean Runyan and Associates (Dean Runyan and Associates 1998).

The planning area covers three California counties. Roughly 40% is in San Bernardino, 59% in Inyo and the rest in Mono County. From a regional perspective there are relatively very few people living on private property within the planning area boundary, particularly when the large metropolitan cities of Los Angeles and Las Vegas are considered. Both of these large cities are within 150 miles of the planning area and make a large contribution to the pool of annual visitors. In a recent survey, 81% of all visitors to Mojave National Preserve were from California. About 35% drove 100–200 miles to arrive; 40% traveled between 210 and 500 miles. That would indicate that most visitors are from the Los Angeles or San Francisco areas. There is a great contrast between visitors to Death Valley and Mojave: only 32% of the total visitors to Death Valley are from California, and 69% are international visitors.

LOCAL AND REGIONAL COMMUNITIES

Population figures and trends of communities that surround Death Valley are shown on page 5 in the "Economic Impact Analysis Report, Northern and Eastern Mojave Planning Area, June 1998." The population of each community was not available for every year being considered in the report.

Trona, California

This small mining town is the nearest community to the southwest entrance of Death Valley. It has a high school and elementary school, gas stations, small markets, housing, and a few small restaurants. A doctor was present in 1993, while most residents travel to Ridgecrest for medical services. Water, sewer, and other utilities are available. Police protection is provided by the San Bernardino County Sheriff Substation in Trona.

Lone Pine, Independence, and Big Pine, California

These cities are along California Highway 395. Most services are available in Lone Pine, including a school with elementary through high school classes, small markets and restaurants. Police protection is available through the Inyo County Sheriff. Available housing is limited. Growth in the valley is limited by ownership of water rights by the Los Angeles Department of Water and Power. Employment is provided by agriculture, wholesale and retail trade and finance and service related jobs.

Bishop, California

Bishop is the largest community in Inyo County. The community offers a variety of services including city parks and a recreational complex, county fair grounds, a variety of businesses including motels, gas stations, markets, restaurants and medical services. There are two elementary schools, one high school, and a community college. There are several outdoor recreational areas which are close to the town that provide opportunities for hiking, fishing, camping and other outdoor recreational activities. Most of the employment is in retail sales, travel, dining, recreational services, other services, and local government.

Shoshone, California

Shoshone is a small town whose ownership is dominated by one family. Public services include a post office, gas station, general store, small cafe, motel, medical clinic, and elementary school. Emergency services are provided by the San Bernardino County Sheriff, Highway Patrol, and NPS Ranger who share an office in Shoshone. Available housing is limited.

Pahrump, Nevada

This community is the nearest source of most major services for residents of the Furnace Creek area. The community has shifted from an agricultural economic base to being a bedroom community for Las Vegas, which is 60 miles to the east. The community is growing at a fast pace. Almost all services are available including, schools, a full emergency medical center, a chain grocery store, banks and other community services. Housing is available with minimal development and no zoning restrictions.

Beatty, Nevada

The town is primarily sustained by gaming, mining and tourism. Public services include facilities such as a medical clinic, elementary and high schools, banks, stores, restaurants, post office and motels. Beatty is the nearest town for Park residents living at Furnace Creek and serves as the high school for children of employees living in the Park.

TABLE 11: POPULATION OF COMMUNITIES THAT SURROUND THE NORTHERN AND EASTERN MOJAVE PLANNING AREA, 1980–1996

Communities	Population			Average Annual % Increase
	1980	1990	1996	
Beatty (Nye County, NV)	1,509	1,630	1,893	1.4%
Big Pine (Inyo County, CA)	1,510	1,086	1,158	-1.6%
Bishop City (Inyo County, CA)	3,333	3,475	3,480	0.3%
Lone Pine (Inyo County, CA)	1,684	1,818	2,100	1.4%
Pahrump (Nye County, NV)	3,000	7,424	23,076	13.6%
Ridgecrest (Kern County, CA)	15,929	27,725	28,750	3.8%
Total	**59,139**	**91,754**	**115,827**	**4.3%**

Source: Dean Runyan Associates, US Census Data, & State/City Demographics

PARK COMMUNITY

Death Valley had 95 full-time NPS employees and 14 seasonal employees in 1996. It is estimated that 98% of employees currently live in the Park.

Furnace Creek is a small town with a post office, elementary school (K-6), general store, gas station, airstrip, law enforcement personnel, and volunteer fire department. Older children ride a school bus to Beatty, Nevada to attend classes in upper grades.

OTHER RESIDENTS

Currently, Amfac has between 300–325 employees living at Furnace Creek; 89–90 live at Stovepipe Wells, and six live at Scotty's Castle .

About 50 Timbisha Shoshone tribal members live at Furnace Creek on parcel of government land located south of the Furnace Creek Ranch. The Tribe is actively seeking ownership of a homeland through direction provided by a land suitability study as called for in section 705 (b) of the California Desert Protection Act.

ROADS AND CIRCULATION

ROADS

There are five state highway entrances to the Park and numerous unpaved entrances. Townes Pass and Furnace Creek, both on California Highway 190, are the principal entrance routes. Other access routes are Jubilee Pass, Daylight Pass, and Grapevine. Daylight Pass is more heavily used in the summer when people do not wish to take the linear route through the valley. Inyo County has indicated an intent to oil their section of the Big Pine road, which serves as an entrance into the northwest corner of the Park. Traffic on this entrance is lower than at other entrances; the average daily traffic from 1992 to 1995 is 10 vehicles per day. In 1996 the Park recorded 2,988 vehicles for an average of 8.2 cars per day. Use of the Eureka Sand Dunes may increase if Inyo County businesses continue to promote recreational visits to the dunes and if the County Road Department oils the remainder of the Big Pine road to the turn off to the dunes.

The Park has a vast network of roads, ranging from high-speed highways to unmaintained four-wheel drive roads. The Park staff maintains 696 miles of road. Of that, 243 miles are classified as standard vehicle roads, or paved or unpaved that require no more ground clearance than a standard sedan. High clearance or four-wheel drive roads constitute 442 miles, and about 10 miles are service spur roads. California State Highway 190, the main route through the Park, is maintained by the California Department of Transportation (Caltrans). In addition, there are many miles of roads maintained by the county or by mining companies. The Park encompasses hundreds of miles of unmaintained four-wheel drive routes. When the monument became a Park in 1994, it did not require responsibility for any additional paved roads. Most of the new NPS roads are unpaved four-wheel drive roads that provide access to remote locations such as the Saline Valley and Hunter Mountain. The Park has been approached by Caltrans to assume maintenance over about 10 miles of Highway 178 near Shoshone.

The following table shows traffic figures recorded by the California Department of Transportation for 1995. Figures reflect the combined number of vehicles traveling in both directions.

TABLE 12: AVERAGE DAILY TRAFFIC LEVELS (1995)

State Highway	Peak Hour *	Peak Month	Annual Average
Route 127, San Bernardino/Inyo County line	110	660	550
Route 178, between Junction 127 and Stateline	95	890	750
Route 190, junction of Route 136 east of Owens Lake	110	950	550
Route 190, Death Valley Junction	120	860	680

*Peak hour is the hour during which the heaviest volume of traffic occurs on a roadway.

TRAILS

The recently acquired lands contain an informal trail that leads up to Darwin Falls. This is a 2-mile round trip that winds its way up a narrow canyon through willows until the falls are reached. The trail needs some maintenance including pruning willows to allow hikers to pass through the thickets. The parking area for the trailhead has been pulled back out of the wash. There are informal trails in Saline Valley, where users of the warm springs have created trails to points of interest such as Rod Falls, the Seven Sisters Springs, and the Red Cinder Cone Trail. The Saline Valley road serves as access to trails located in

the Inyo Mountains on BLM and USFS land. The Lonesome Miner trail head is accessed from off of the Saline Valley road up Hunter Canyon. This 49-mile trail which generally follows ridgelines extends from Hunter Canyon on the south to Reward Canyon on the north. Access to this trailhead is across NPS land.

There are many defined trails or identified hiking corridors within the old monument boundaries. Corridors are often defined by canyons, washes, or ridgelines. The lower elevation trails are frequently used during the cooler months of the year while the upper elevation trails get most of their use during the summer. Very few sources of drinking water exist along these trails or corridors, limiting the duration of most hiking activities. Several trails or routes have been identified as day hikes, requiring less than a day to complete the whole route. Trail surfaces vary from paved, boardwalk to unmaintained soil conditions. The Park has identified approximately 16 miles of dirt trails, 1.5 miles of paved, 0.25 miles of boardwalk, and unlimited undefined hiking routes for day use.

Several routes and trails have also been identified for backcountry hikes, requiring more expenditure of time and effort by the hiker. The majority of backcountry hikes are defined as routes following canyons, ridges, abandoned roads or other land features. The Park has identified an unlimited number of miles and hiking routes or trails for visitors wishing to hike into remote sections of the Park. Some springs are present along routes, camping is allowed away from springs and voluntary backcountry permits are recommended. Telescope and Wildrose Peak trails are recommended as both day and backcountry hikes.

Very little trail maintenance has occurred over the years because of restricted staff and budgets. Telescope and Wildrose Peak trails are the only maintained, backcountry trails.

ADMINISTRATIVE OPERATIONS AND FACILITIES

FACILITIES

FURNACE CREEK/COW CREEK

Furnace Creek serves as the main administrative headquarters for the Park and has a visitor center and an administrative office. These buildings were built in the late 1950s and are not large enough for all central office staff. As a result, the maintenance, resource protection, and visitor use staff are located at Cow Creek, 3 miles north of headquarters. The original adobe buildings at Cow Creek, built during the CCC era, include the old administrative building and several maintenance buildings. These buildings have gained historic status. The Furnace Creek, Cow Creek area functions as a small town with an airstrip, gas station, store, school, emergency fire, police, medical, and maintenance services. Park management is reviewing possible office space outside the Park.

SCOTTY'S CASTLE

Scotty's Castle is located 55 miles north of headquarters. NPS employees work in a modular building located on the upper edge of the grounds. The building was brought in after a fire destroyed a historic building that had served as office space. Other buildings are now used for storing various materials.

MAINTENANCE FACILITIES

More than 70% of the maintenance staff are now located at Cow Creek and 23% are at Scotty's Castle . One maintenance worker and three rangers are located at Stovepipe Wells. Rangers at Wildrose also assist in light maintenance of the three adjacent campgrounds. The maintenance division is responsible for over 50 buildings, 9 campgrounds, 243 miles of standard vehicle paved road, 442 miles of high clearance or 4x4 and 10 miles of service road, 60 houses and 8 water systems. Travel distances and extreme heat are two major obstacles in performing daily operations. Because Death Valley is now the largest national park in the contiguous United States, there are some limitations on how much the Park can accomplish under the current conditions. Maintenance and other Park staff need three hours to travel from Grapevine to Eureka Dunes and an additional two to three hours to drive from there to the Saline Valley Warm Springs.

The Cow Creek maintenance facility takes care of most visitor and administrative facilities because of its nearness to Furnace Creek and other intense visitor and administrative use zones. Several buildings including the auto shop are contained inside historic structures with adobe walls, which limits renovations and expansions. At this time, there is no adequate space or facilities for the maintenance operation, and employees are looking to expand onto the abandoned Salt Pan housing area or the current storage yard to the east. California Department of Transportation also has a maintenance yard just south of the main NPS yard.

The maintenance operation at Scotty's Castle maintains the historic structures and grounds, which require special attention. They are also responsible for employee housing at Grapevine, the campground at Mesquite Spring, and facilities at Eureka Dunes.

HOUSING

The majority of the staff live at the Cow Creek housing area which has 60 housing units and 37 transient trailer/RV sites. Stovepipe Wells has seven units and six transient trailer/RV sites; Wildrose has three units; Grapevine has 16 units and two transient trailer sites; and Scotty's Castle has five units. Nine

additional units are occupied by Caltrans, State Highway Patrol and Natural History Association employees. Grapevine has a severe shortage of housing, which has resulted in employees living at Cow Creek and commuting to Scotty's Castle, over a 60-minute commute. A housing development plan for Grapevine has been initiated by Park staff. Currently, the Park has 22 employment opportunities but no Park housing available. The contractor-conducted housing assessment completed in 1998 concluded that there was a need for an additional 19 housing units to meet current staffing needs. Park management believes there is a need for 76 additional units.

Park management is encouraging certain employees to seek housing outside the Park. Alternate work schedules have been initiated and telecommuting is being considered.

LANDOWNERSHIP AND USE

STATE LANDS

The Statehood Act of 1850 granted to the state of California all unappropriated and surveyed sections 16 and 36. These sections (state school lands) in the Park are being considered for land exchanges with other federal properties in the state. Most of the state land included in those grants within the old monument boundary has been acquired by the National Park Service through exchange. However, with the recent addition of lands to the Parks, the state of California still holds fee title to 82 parcels totaling 41,340 acres. The state also holds mineral rights on several parcels of land. The California State Lands Commission has requested from the Secretary of the Interior an exchange of state school lands for other surplus federal properties. The Secretary, as specified in section 707 of the California Desert Protection Act, has begun negotiations with the state to finalize the land exchange.

WILDERNESS

On October 31, 1994, Congress designated approximately 3,158,033 acres (95%) of Death Valley as wilderness. Figure 2 provides an overview of the preliminary wilderness boundaries that have been interpreted by the Park from the congressional maps. The California Desert Protection Act (sec. 601b) also provides for the potential automatic creation of another 6,840 acres of wilderness along a powerline corridor from Furnace Creek to Stovepipe Wells upon cessation of the powerline use.

MINING

About 60% of private lands in Death Valley are patented mining claims. There are 19 patented mining claim groups totaling 6,444 acres. The Park also has approximately 125 unpatented mining claims covering about 2,262 acres. The National Park Service typically conducts a determination of validity on unpatented mining claims when a proposed plan of operation is received from an operator. This process may result in fewer unpatented mining claims in the Park as those that cannot support discovery of a valuable deposit are contested.

PRIVATE LANDS

Private lands (other than patented claims) occur in seven areas of the Park and cover about 4,200 acres. See the "Land Protection Plan" (appendix B) for specific details.

GRAZING

Cattle have grazed in California's northern and eastern Mojave Desert for well over 100 years. Much of the desert had been heavily grazed at various times between 1900 and 1940. Both the acreage and the intensity of livestock use on federal land in the California desert have declined during this century. This decline may be due to a decrease in demand for beef, stricter controls by the land management agencies, more efficient and cost-effective methods of raising beef at other locations, and a decrease in forage production. Also, the rapid expansion of feral burro populations since their protection under the Wild and Free-Roaming Horse and Burro Act of 1971 has caused conflicts over forage in some areas (BLM 1980).

With the signing of the California Desert Protection Act of 1994, Death Valley National Park acquired a portion of four BLM grazing allotments: Eureka Valley, Last Chance, Hunter Mountain, and Lacey-Cactus-McCloud. Eureka Valley and Lacey-Cactus-McCloud have small acreages with no substantial animal unit months. The portions of these allotments in Death Valley have been cancelled. The Last Chance allotment has not been issued a permit since 1996 due to the lack of forage. At the time of the passage of the CDPA, the NPS portion of this permit contained 1,628 AUMs. The Hunter Mountain allotment occurs on both NPS and BLM lands. The NPS portion covers about 86,400 acres and contains 1,105 AUMs.



ENVIRONMENTAL CONSEQUENCES



ALTERNATIVE 1: PROPOSED ACTION

Impacts resulting from the proposed legislation to transfer lands and designate cooperative activity/special use lands in the Park for the Timbisha Shoshone Tribe are addressed in the *Draft Legislative Environmental Impact Statement, Timbisha Shoshone Homeland* (2000). Those impacts are not a direct result of this planning effort, but summary statements are included here as reference to ongoing issues that may impact visitor use, resource management, and Park administration. That document should be referred to for a full discussion of the potential impacts of that proposal.

IMPACTS ON NATURAL ENVIRONMENT

Soils. When burros are removed from Death Valley National Park, the damage caused by burros to the soil, from compaction, trail formations, and wallowing should begin a slow, probably decades-long, recovery process.

As grazing allotments are phased-out or reduced there would also be a concomitant reduction of disturbed soils.

A Saline Valley site management plan that would delineate camping and parking areas would reduce adverse impacts on soils and would provide a better opportunity for the disturbed soil's recovery.

Vegetation. Vegetation consumption and trampling would diminish with the removal of burros and the removal of cattle as grazing is phased-out or reduced. This would provide more forage for the natural wildlife.

During burro capture operations there could be some localized, short-term disturbance to vegetation from the capture crews and their equipment during the capture operation.

Removal of exotic plants will provide increased opportunities for native vegetation to recolonize areas and recover.

A Saline Valley site management plan that would delineate camping and parking areas would reduce adverse impacts on vegetation and would provide a better opportunity for the recovery of the areas natural vegetation.

Wilderness designation of 95% of the Park will provide increased vegetation protection.

Water. The removal of burros from the Park would eliminate their adverse impacts on the Park waters. Springs and creeks would no longer be contaminated by burro wallowing, defecation, or urination. Cattle's adverse impacts on the Park's waters would also be reduced as grazing is phased-out.

Wildlife. As burros are removed from the Park and as cattle grazing is phased-out or reduced, wildlife populations would benefit from less competition for resources. More forage and less interactions at watering sites would be expected to benefit wildlife populations and would increase their numbers.

As natural water sources are restored, wildlife populations would adjust to more natural condition. If wildlife populations were unnaturally high due to water developments, the elimination of those water developments would probable result in a wildlife population decline to a level that the natural environment could support. If the "naturalization" of water sources supplies more available water to wildlife there may be a subsequent wildlife populations increase. Studies would be undertaken to

determine if guzzlers have contributed to unnaturally high wildlife populations and possible overuse of native vegetation.

Localized populations of wildlife may be disturbed for short periods of time during the burro capture operations. No long-term adverse impacts would on wildlife from these operations would be expected.

The water supply for visitor use is finite. No additional water would be allocated for visitor use. With the establishment of wilderness in 95% of the Park, additional protection to wildlife populations would be predicted. With the enactment of proposed inventory and monitoring programs the status and of the effects of the proposed programs on vegetation and wildlife will be better known.

Most of the lands proposed for the Timbisha Shoshone Homeland are outside the Park, but some adverse impacts are anticipated on natural resources in the Furnace Creek area as a result of development for housing, tribal offices and recreation facilities and possible inn and cultural museum. These developments would be subject to the NEPA process. Traditional tribal activities on cooperative special use areas, such as gathering of plants, use of springs, and maintenance of mesquite groves are not predicted to result in adverse impacts to native plant communities or special status species. Wildlife may benefit from habitat restoration and management activities. Anticipated water usage at the site would be 92 acre feet, which would be acquired through conservation measures and be subject to availability and securing an allocation subject to valid existing rights.

IMPACTS ON CULTURAL RESOURCES

Archeological sites, historic properties, cultural landscapes, and ethnographic resources in Death Valley National Park would benefit from the proposed action through an expanded systematic and integrated inventory, research, and preservation program to manage, protect, preserve, and interpret properties listed on, or determined eligible for listing on, the National Register of Historic Places. The program, which would protect the documented values of the properties, would be developed through collaborative partnerships with government agencies and public and private organizations that have cultural resource management or research capabilities/expertise.

The potential for burros and cattle to trample and destroy cultural resources would diminish if this alternative is implemented.

Although increasing public visitation could adversely affect cultural resources by vandalism or inadvertent damage, actions to reduce these impacts, including increased ranger monitoring to detect vandalism and illegal collection, and visitor education programs, would be increased. A site management plan to be prepared for the Saline Valley area would include a program to identify cultural resources and recommend methods to protect them.

Additional mining-related cultural resources important to the historical development of the Park could be acquired and protected by stabilization efforts and regular enforcement patrols. Bringing historic resources into public ownership would increase visitor opportunities for enjoyment of these resources.

The draft LEIS for the Timbisha Shoshone Homeland proposal predicts significant advantages and improvements to the condition of cultural resources as a result of the creation of tribal homeland and the improvement in collaboration and cooperation between the Timbisha Shoshone Tribe, the National Park Service and the Bureau of Land Management.

IMPACTS ON NATIVE AMERICAN INTERESTS

Implementation of the proposed action and the passage of legislation approving the land transfer and co-management recommendations would provide the Timbisha Shoshone Tribe and the National Park Service with greater opportunities for government-to-government collaboration and cooperation on a wide variety of matters.

There would be significant advantages and improvements to the Park by the institution of these measures. Implementation of collaboration and cooperation would improve relations and communications between the National Park Service and the Tribe. Both NPS staff and Tribal members would be more exposed to each other's perceptions and areas of interest. This process would result in improved understanding of matters of agreement and of differences. This would make issues easier to resolve.

Tribal involvement in resource management and visitor interpretation would enhance the Park's resource management capabilities and provide Park visitors with a more complete and more appropriate range of perspectives on Park prehistory, history, and contemporary life.

Greater collaboration and cooperation between the Timbisha Shoshone Tribe, the National Park Service and the Bureau of Land Management are predicted as a result of the creation of a tribal homeland. This would in turn result in opportunities to address cultural resource needs and expand interpretive perspectives for visitors.

IMPACTS ON VISITOR USE AND FACILITIES

Visitor aesthetics would be affected by burro removal and the potential elimination or reduction of grazing and guzzlers. As a result of burro removal, habitat would slowly recover, providing a long-term aesthetic benefit. Some visitors would consider the absence of burros an adverse impact, but others would regard it as a positive impact. If the third stage of the burro removal plan results in the killing of the last few burros, some people would be displeased.

The possible elimination of grazing and guzzlers within the Park would eventually affect visitors' aesthetics. People who would find cattle and ranching activities an inappropriate use or guzzlers an inappropriate feature within a unit of the national park system would be pleased if allotments were purchased or guzzlers removed. People who enjoy seeing ranching activities and guzzlers would be less pleased.

The changes proposed for the Saline Valley area, may seem too structured to the Saline Valley Warm Springs advocate groups. They might not enjoy their camping experience as much as they did in the past with the proposed action's changes. However, NPS management in the Saline Valley Warm Springs area could help maintain its qualities by protecting it from random and increasing visitor activities. With the implementation of this alternative, the National Park Service and advocate groups will put together a site plan that will result in a less disturbed natural desert environment, and a rare desert camping experience — warm springbathing.

Backcountry roads would receive minimal maintenance from the National Park Service to prevent road-braiding (widening of a road by people trying to drive on a smoother surface to avoid the road's poor surface condition). This would prevent future destruction to the desert environment and allow the vegetation to recover.

As private land, state land, and mining properties are purchased more public lands would be available for visitor use and less incompatible development activities would occur in the Park. Visitors would encounter less active mining operations or mining traffic on Park roads.

Most of the proposed Timbisha Shoshone Homelands are outside the Park, but future development at Furnace Creek for housing, tribal offices and recreation facilities and a possible inn and cultural museum would be consistent with existing commercial development and the desire to improve visitor opportunities at Furnace Creek. Overall, the proposal would likely improve visitor facilities and opportunities in the Park. Traditional tribal activities on cooperative special use areas, such as gathering of plants, use of springs, and maintenance of mesquite groves are not predicted to result in adverse impacts to visitor use. Improved collaboration and cooperation with the Tribe would create opportunities to address cultural resource needs and expand interpretive perspectives for visitors. The potential inn and cultural museum developments would create some options for lodging and would provide visitors with a perspective on Native Americans and their heritage that is presented from the perspective of the Timbisha Shoshone Tribe. Development would be compatible with Park resources and aesthetics.

IMPACTS ON SOCIOECONOMIC ENVIRONMENTS

A separate analysis of socioeconomic conditions in the planning area and the effects of the proposed action was conducted by Dean Runyan Associates under contract to the National Park Service. That analysis concluded that no significant effects would occur in the Northern and Eastern Mojave planning area as a result of the proposed action. There would be some loss of grazing related jobs if allotments were acquired, but the overall effect would be offset by an increase in tourism jobs. See that report for more details.

Acquisition of private lands would remove those properties from county tax rolls. However, the federal government provides payments to the counties in lieu of taxes to compensate them for their loss of taxes. This program is coordinated by the Bureau of Land Management and payments are made annually for entitlement lands and every five years for acquired lands. Payment is computed based on 1% of the amount paid for the property.

Implementation of the Timbisha Shoshone Homeland proposal would generate minor socioeconomic effects locally and regionally, including placing additional demands on local services, to removing over 7,000 acres from BLM ownership, causing a small decline in BLM fees paid to counties. Positive effects on the tribe's socioeconomic environment is the desired outcome of the legislation and are predicted to occur over a number of years as a result of revenue generating activities. Major social benefits include the ability of the tribe to live on their own lands in modern communities, with access to traditional use areas, in association with the tribal homelands.

IMPACTS ON ADMINISTRATIVE OPERATIONS AND FACILITIES

The cost for initial live capture and adoption of the burros would be high. Using BLM figures ($1,200/burro) removing a target population of 300 burros would be about $450,000 including $90,000 for planning costs. (300 burros are estimated to remain in the Park after "existing management" removal operations activities have been conducted and before the proposed burro management program is initiated). This cost is a one-time expense. However, there would be long-term expenses of fencing and capture of burros that migrate into the Park from adjacent BLM and military lands.

This would be the most expensive alternative for Saline Valley. Funding would be needed to develop site management plans, to protect resources and for increased maintenance costs.

If the relocation of some Park services and employees to an area outside the Park occurs, then an expected increase in housing availability and choice in the relocated area should improve employee morale. As Park services and employees are relocated, the availability of Park housing for the remaining employees would increase. Housing maintenance costs for the Park would level off. No housing maintenance cost would be incurred for areas outside the Park.

With the proposed relocation of some NPS services outside of the Park, increased transportation time and expenses would result for employees needing to work in the Park. It is about a one-hour drive to Pahrump and two hours to Lone Pine from Furnace Creek.

There would be an initial administrative workload and cost to acquire properties. However, this workload would diminish over time as nonfederal lands and interests are brought under public ownership. Properties acquired may require the Park to undertake restoration or stabilization activities to restore native vegetation and wildlife, or to preserve historic features. Any such activities would be considered in separate detailed plans.

Greater collaboration and cooperation between the Timbisha Shoshone Tribe, the National Park Service and the Bureau of Land Management are predicted as a result of the creation of a tribal homeland. Such cooperation would result in improved working relationships and increased exchange of information relevant to both the tribe and the government. Although most of the proposed Timbisha Shoshone Homelands are outside the Park, future development at Furnace Creek for housing, tribal offices and recreation facilities and a possible inn and cultural museum would create a slight increase in workload for Park staff over the short term for compliance purposes. In addition, traditional tribal activities on cooperative special use areas would create a small additional workload for permitting and monitoring purposes.

IMPACTS ON LANDOWNERSHIP AND USE

This alternative would probably result in operation changes in the grazing management program. Allotment management plans would replace the BLM plan (Hunter Mountain Allotment) and provide management direction for the Last Chance Allotment. Under NPS management, grazing fees might be increased. The change in grazing management operations with the chance of more grazing limitations, control of nonnative species and higher grazing fees might influence the future value of the grazing allotments. Range developments would be allowed under this alternative.

The receiving communities of new NPS offices and employees may see an increase in property values and an increase in demand for community services and utilities.

Impacts on mineral development activities would be the same as the existing management alternative.

Implementation of the Timbisha Shoshone Homeland proposal would result in the transfer of 314 acres of federal land inside the Park to be held in trust by the Secretary of the Interior for the Tribe, as well as approximately 120 acres of private land in Saline Valley. There would also be an additional 7,240 acres of BLM managed lands transferred and held in trust. These lands would be for the exclusive use of the Timbisha Shoshone Tribe and would no longer be available for general public use, except as authorized by the Tribe. Some of these lands would be converted from conservation status to development status by virtue of the anticipated economic developments.

CUMULATIVE IMPACTS

The acquisition of grazing allotments on a willing-seller willing-buyer basis and removal of most of burros in Death Valley National Park would contribute to the overall restoration of the desert's vegetation, soils, waters, and wildlife to more natural conditions. There would be less overall development of desert habitat and resources on a regional basis.

This alternative's implementation (and a similar one for Mojave National Preserve) would result in a noticeable reduction in the burro populations within the California desert area's public lands. The population management levels would be reduced to 334 burros and 252 horses from the Bureau of Land Management's former targeted population (843 burros and 267 horses) for their herd management areas prior to the passage of the California Desert Protection Act of 1994. This would be a reduction in the California desert of 60% of the burro and 6% of the horse populations.

Impacts to burros from the potential loss of habitat and a possible increase in the number of injuries or deaths may result from the increased activities at two sites near the Park. These sites are the proposed expansions at the National Training Center at Fort Irwin and the expected expansion of the Briggs Mine. The number of animals impacted at these locations is expected to be small but they would add to the proposed reduction at the National Park Service units.

Throughout the desert, the Bureau of Land Management and the National Park Service are pursuing exchanges of state school sections in Parks and wilderness areas. The potential reduction in tax dollars is partially mitigated by payments in lieu of taxes that are paid to the counties for lands acquired by the federal government. Additionally, occupancy and sales taxes have and would continue to grow. The potential for increased visitor use in the region and the consequent dollars spent on food, lodging, transportation, and other items have grown significantly over the past 5–8 years. This growth in tourist dollars expended in the area is expected to continue.

The existing withdrawal of some Park land from mineral entry over the last twenty years by the Mining in the Parks Act, the Bureau of Land Management for wilderness study areas or other purposes, and by the California Desert Protection Act, has removed some areas of the desert from potential mineral development except for valid existing rights in those areas. Depending on the commodity, small regional price increases could result from increased transportation or development costs in other areas. The price of gold, the primary mineral sought, would not be affected by any actions in the planning area. Any loss of jobs in one sector is expected to be offset by stable and sustainable growth in jobs in the service and tourist industries.

There would be no adverse cumulative impacts on cultural resources under this alternative.

Implementation of the Timbisha Shoshone Homeland proposal would result in 7,554 acres of public lands (314 acres are within the Park) being transferred and held in trust for the Tribe. These lands would be for the exclusive use of the Timbisha Shoshone Tribe and would no longer be available for general public use, except as authorized by the Tribe. Although these lands don't currently receive a large amount of public use, this loss of public lands could be viewed by some as contributing to the perceived loss of access to public lands that occurred by the designation of wilderness. Development on these transferred lands would contribute incrementally to other ongoing activities in the area, including mining, economic developments at the Nevada Test Site, population growth in Pahrump and anticipated developments in the planned Science and Technology Corridor in Nye County, Nevada.

ALTERNATIVE 2: EXISTING MANAGEMENT

IMPACTS ON NATURAL ENVIRONMENT

A significant level of adverse impacts on the natural environment is caused by the presence of burros.

Soils. Soils would continue to be adversely affected to varying degrees by foraging of nonnative burros and cattle and their subsequent trampling, as well as by camping activities. Soil compaction, sheet erosion, and gullying would continue to be caused by burros wallowing and trailing (trails apparently produced by burros). The following quotation documents earlier burro damage on former monument lands and at other units of the national park system:

> (P)lant growth was inhibited and erosion accelerated in areas trampled by excessive burro concentrations (Ferrell, 1973). Douglas and Fenn (unpublished data) studied soil compaction in Death Valley by using bulk density sampling and soil penetrometer readings. They found treads of burro trails in Butte Valley (Death Valley National Park) were as heavily compacted as treads of relatively heavily used jeep roads in the same areas and soil type. Compaction extended 6–10 inches below the soil surface. The severity of soil compaction was surprising because soils in Butte Valley are granitic, and thus are relatively coarse and have poor compressibility. Heavily used burro trails on steep slopes in Death Valley and Grand Canyon have contributed to major soil movement and erosion. Carothers (1976) provides a discussion and illustration of burro damage in Grand Canyon along the Colorado River. Compacted trails are almost impervious to penetration by water; precipitation tends to run off compacted soils, leading to erosion. Compacted soils also are resistant to plant colonization. Hundreds of miles of such trails are present in Death Valley National Park and Lake Mead National Recreation Area (Douglas and Hurst 1993).

Cattle also adversely affect the soil. The U.S. Fish and Wildlife Service's April 20, 1994, "Biological Opinion" on the desert tortoise provided the following information of grazing/soil impacts:

> It [grazing] also causes soil erosion and compaction, reduced water infiltration rates, and increased runoff (Klemmedson, 1956, Ellison, 1960, Arndt, 1966, and Gifford and Hawkins, 1978), leaving less water available for plant production (Dadkah and Gifford, 1980)...The intensity of damage to soil caused solely by cattle is assumed to be directly proportional to the AUMs (Animal Unit Months) of forage used per pasture (BLM, 1980a).

Surface disturbance from camping would occur from the random use of nondesignated sites. This surface disturbance to soils and vegetation could expand over time. Favorite camping sites in the desert tend to enlarge as people gradually expand their use of the campsites out toward the undisturbed desert over the years.

Vegetation. Vegetation would be adversely affected to varying degrees by the nonnative burros and cattle foraging and their subsequent trampling of the soil and by camping activities. Burro population control would help reduce overgrazing of the native vegetation. On average, burros eat 4.5 kilograms (9.9 lbs.) of dry forage per day (Douglas and Hurst 1994). Normal plant growth patterns and rates would not resume with the presence of burros. Burro overgrazing leads to less plant biomass available for native wildlife, thus a lowering of the habitat's carrying capacity (Woodward 1976).

Numerous studies documenting native vegetation damage from burros exist, and the findings are consistent; that is, burros damage native vegetation (see Douglas and Hurst 1994). However, the results of exclosures studies are not so definitive. Exclosures are fenced areas, that exclude the animals being studied usually for many years to determine the effects those animals have on vegetation and the environment by comparing the protected area to the area outside of the fence. Some investigators noted

large differences between the plant volume and diversity inside and outside of these exclosures; and other investigators noted no significant differences. The same parameters were studied but the studies took place at different locations. Seasonal weather or water patterns may account for the differences.

Douglas and Hurst cited Longshore and Douglas's (1988) research results where vegetation recovery was studied following burro removal. They found significant differences in species diversity, but no differences in mean volumes of perennial shrubs inside and outside of a Park exclosure. They noted that, where browsing by burros was relatively minor, over a three-year period rapid recovery of shrubs was evident. No recovery of the perennial grasses was noted (In this research area grasses comprised 48% of the burros' diet).

The interim burro population strategy (keeping the herd at the previous BLM level of around 130 burros) would result in periodic disturbance to the desert vegetation from inadvertent trampling of vegetation by burros and capture crews during the capture operation.

It is known that grazing can change the species composition and densities of vegetation. The following is also from the 1994 FWS "Biological Opinion":

> Livestock grazing can result in decreased shrub cover (Webb and Stielstra, 1979) and desirable shrubs (Orodho et. al., 1990). Weedy exotics, such as split grass (*Schismus arabicus*), checker fiddle neck (*Amsinkia intermedia*), filaree (*Erodium cicutarium*), and cheatgrass (*Bromus tectorum*) have benefited from grazing, while perennial bunchgrasses, which are highly palatable grazing forage, have become less abundant (Berry and Nicholson 1984, Kie and Loft 1990).

The restoration of the desert environment and its vegetation would be a slow process. Complete recovery, if it happens, occurs at the very minimum over decades. Again, from the 1994 FWS "Biological Opinion":

> After 10 years of cattle exclusion in the Ivanpah Valley, there were no significant differences in annual plant cover, biomass, or density between grazed and ungrazed plots (Avery, et. al., 1992). Volumes of creosote and bursage were greater in the grazed plot as compared to the ungrazed plot, but no differences in total perennial plant cover were detected.

In the above study, differences were also observed in soil compaction, including greater compaction in the grazed area outside of the exclosure. The U.S. Fish and Wildlife Service noted that the above results were complicated by the "limited data on soil and vegetation parameters" before the cattle were excluded and that there had been trespass grazing inside the exclosure. The U.S. Fish and Wildlife Service also stated "Mojave Desert vegetation recovers very slowly from disturbance (Vasek, et al., 1975a and 1975b, Lovich, 1992) and 10 years may not be long enough to detect differences between grazed and ungrazed plots."

Most woody vegetation would continue to be protected from damage by the ban on firewood collection.

Wildlife. Competition for food, water, and space between bighorn sheep and burros is strongly suspected by many biologists, and overlaps of food and range are known to occur. Researchers have found dietary overlap between burros and bighorns ranging from 20% to 67% (Douglas and Hurst, 1993). Douglas and Hurst cite the following from Norment and Douglas's 1977 paper:

> The desert bighorn and burros live in areas having environmental uncertainty. It seems reasonable to assume desert bighorn are resource limited. Burros may also be resource limited, but because of their generalized food habits, they are less limited by forage resources than bighorn. In deserts of the western states, habitats of both species have continually fluctuating carrying capacities, being highest in spring and lowest in winter. Primary productivity of desert habitats is low, and

> dependent upon the amount and timing of precipitation. Availability of nutritious forage is thought to be the most limiting resource of these species. Foraging strategies of bighorn sheep have evolved in synchrony with their habitats, whereas feral burros have not evolved with the same resource set.

Studies in 1961 and 1984 showed that the presence of burros at springs had an inhibiting effect on bighorn ewes; bighorn rams appear to be less intimidated. The findings were: "Ewes generally would not drink if 3 or more burros were present at the spring. Rams drank at the springs burros used, but a spring not used by burros received much heavier use by ewes than springs used by burros. Burros have the tendency to lounge in groups at water sources, often remaining there for hours, or even entire days" (Douglas and Hurst, 1993). Such inhibiting of bighorns would continue under the no-action alternative.

A 1977 study in the Bandelier National Monument found significant differences in small mammal populations (deer, mice) in areas where burros were present. In the monuments pinyon/juniper woodlands, a reduction 10–33% of small mammals were found compared to the control areas that were without burros (Guthrie 1977). It is assumed that similar small mammal population declines have occurred within the Park's pinyon/juniper woodlands and within other community types that share burro and small mammal populations. Any such declines would continue under the no-action alternative.

The interim burro population strategy (keeping the herd at 334 burros) would require periodic disturbance to the desert wildlife due to noise (helicopters, horses, trucks, wranglers, etc.) and inadvertent trampling of small animals and their habitats from capture crews and their equipment during the capture operation. Larger mammals, such as deer and bighorn, would leave the local area during these activities.

Water. Burros are known to contaminate water sources through defecation and urination, to overbrowse or eliminate aquatic and riparian vegetation, and to monopolize the use of springs or seeps. On average, burros consume 22 liters (5 gallons) of water per day. In comparison, bighorn sheep consume about 3.8 liters (1 gallon) per day (Douglas and Hurst 1995).

The land and vegetation near the troughs and tanks experience heavy, concentrated use by cattle and burros. This use compacts the soil and denudes the vegetation near the troughs and tanks. The effects on the soil and vegetation near the troughs and tanks and at the springs and seeps would continue with the implementation of this alternative.

The Park's developed water (wildlife guzzlers, mining, and livestock water developments) might be adversely affecting the Park's wildlife populations. This artificially increased amount of water could allow some wildlife populations to grow to levels unobtainable with just the available natural water. The population growth here and possibly at other locations, might be affecting native vegetation. With more animals surviving because of the availability of the artificial water, these larger populations would need more food. The limited amount of water available for plants, the desert plants' slow growth and recovery rates, and the possible increased wildlife populations could have adverse ecological effects, as animals would be eating more than what is being replaced.

The natural resources of the Saline Valley Warm Springs area currently receive limited protection. The Upper Spring is the only one of three large springs that has any significant natural characteristics. In 1997, a fence designed to restrict burro use was providing some protection to this spring. It was noted that inside this fence there was a dense stand of aquatic vegetation and a noticeable population of amphibians and invertebrates. The other springs are concrete-lined and chlorinated. A population of goldfish lives in one small pond.

The native vegetation has been trampled and destroyed because of the lack of designated campsites and vehicle access regulations. There is also an abundance of barren open ground areas. Burros drink from all

the springs except the fenced Upper Springs during the summer months. It can be expected that as more visitors discover Saline Valley, adverse effects would steadily increase. The effects on vegetation and wildlife near the springs would continue with the implementation of the no-action alternative.

Roadside camping at nondesignated sites could cause adverse impacts on desert vegetation. Repeated use of each campsite appears to be common. With repeated use, the camp areas could grow.

Growth of administrative functions is limited as any significant additional use of water for the Park would be at the expense of the natural resources.

In many areas, there is a significant threat to resources from potential mining activity on valid claims. Mining could result in the loss of some vegetation and wildlife habitat and could adversely affect surface water and night sky. Disturbance of some of the surface soil could create a situation where airborne particulates could adversely affect existing air quality. Habitat for sensitive or listed species could also be jeopardized by development.

IMPACTS ON CULTURAL RESOURCES

Cultural resources are potentially threatened by theft, vandalism, and trampling from burros and cattle. Many cultural resources are located near springs, since ancient peoples used springs. Known and undiscovered cultural resources at these areas might be trampled and destroyed by burros. Visitors camping or driving near isolated and unprotected sites would adversely affect cultural resources. Historic or significant structures could be adversely affected by campers' use of wood from historic structures for fires or by other acts of vandalism. Monitoring by rangers would continue to provide as much protection as possible of archeological sites and ruins.

Historic properties listed on, or determined eligible for listing on, the national register would continue to be afforded stabilization/preservation treatment as funding allowed. However, preservation treatment would focus primarily on key resources in high-use visitor areas. Background studies for rehabilitating and adaptive use of historic structures, such as several buildings at Scotty's Castle and CCC-era buildings at Cow Creek, would continue to be emphasized to ensure their preservation and interpretation of significant historic properties. The National Park Service would continue to cooperate with private owners of historic properties within the Park boundaries, such as the Furnace Creek Ranch and Inn and Panamint Springs to preserve and interpret significant resources.

Efforts to educate Park visitors concerning significant Park cultural resources would continue to be conducted through museum exhibits, waysides, pamphlets, brochures, and publications, as well as the Park's interpretive program. Efforts to educate Park visitors about the importance of preserving the Park's cultural resources would continue to be conducted through signing, museum exhibits in the visitor center, and the Park's interpretive program.

The Saline Valley area is one of the most intensively used areas in the new lands added to the Park. The impacts from recreational use of the Saline Valley springs on cultural resources are unknown, but believed to be significant. Limited protection measures or programs are in place.

Many of the Park's historical resources are a result of mining activity. Any such resources located on patented or unpatented mining claims are potentially threatened by new mining development activities. Those on patented claims are on private lands and are not currently available for interpretation or public enjoyment. The National Park Service is unable to take any preservation or enforcement action to protect historic and archeological features located on private lands against decay and vandalism.

IMPACTS ON NATIVE AMERICAN INTERESTS

Communications on a case-by-case basis works adequately for many projects and programs, however this approach can result in missed opportunities for cooperation and collaboration. It can also lead to misunderstanding. Many areas of the Park are considered traditionally important to Native Americans. Contemporary interests by the Timbisha Shoshone Tribe identify a variety of concerns related to culture, tribal government, and economic opportunities.

IMPACTS ON VISITOR USE AND FACILITIES

Cattle and ranching activities, guzzlers and stock tanks, and burros could influence visitors'enjoyment and perception of aesthetics in an otherwise natural setting of a unit of the national park system.

All facilities in Saline Valley would be maintained by the people using the springs. Natural resource and visitor protection would be at minimal levels. The no-action alternative would have adverse impacts on occasional visitors because of the lack of basic facilities, lack of emphasis on resource protection, and the lack of an NPS management program typically implemented.

The 1994 Backcountry visitor survey performed by the U.S. Department of the Interior included Saline Valley as a survey location. An independent user survey was conducted by an advocate group in 1982. Other surveys may have been done by other individuals or groups. All valid information needs to be collected. An advocate group has made a strong statement that it wants the springs area to remain as it is without any changes or government intervention. However, there have been dramatic changes in the area over the past 20–30 years, or more as natural springs were plumbed to create concrete tubs, natural flows redirected and human impacts on the area increased. This change would continue as the public awareness of the area increases through word-of-mouth, magazines, books, and newspaper articles.

Major changes to the springs have occurred in the last 20 years. These changes include but are not limited to an increase in visitation and overall resource degradation. In the future, visitation is expected to increase with public awareness of the area. Without a plan to manage visitor use and resource protection, visitor enjoyment and the resources would continue to be adversely affected.

Roads would remain in typical desert condition receiving infrequent maintenance from the National Park Service and the public. In some locations, there could be continued widening of desert roads due to users driving on the shoulders as the roads become unusable. This results in an unsightly scene and large, long-term damage to roadside vegetation.

Some users of the springs would benefit if the Chicken Strip airstrip remains open. Saline Valley is also part of a Military Operations Area (R2508) that permits military aircraft to fly at speeds exceeding 250 knots and altitudes of 200 feet above ground or higher. The presence of military and private aircraft sharing the same airspace presents a chance of a mid-air collision in the Saline Valley area.

Visitors would encounter mining development activities, sometimes in designated wilderness, that may disturb some due to the apparent conflict with the Park's conservation purpose. Large mining trucks would share the Park roads with visitors, sometimes resulting in conflicts.

IMPACTS ON SOCIOECONOMIC ENVIRONMENTS

Additional information on the socioeconomic environment is provided in a separate analysis entitled "Economic Impact Analysis: Northern and Eastern Mojave Planning Area" by Dean Runyan and Associates. Refer to that report for details on the existing conditions.

IMPACTS ON ADMINISTRATIVE OPERATIONS AND FACILITIES

Maintaining a burro herd size at 334 animals would be the most expensive alternative over the long term. The BLM estimated costs for capturing, transporting, adoption preparation (veterinarian care, feed, and board), and adoption is $1,200 per animals (Dave Sjaastad, BLM, pers. comm.). If the growth rate (estimated between 10–20%) is assumed to be 15%, an average of 51 burros would have to be removed each year to maintain the 334 population, costing about $61,000 per year, not counting NPS staff time. These costs would be long-term. In late 1997, it appeared that the BLM adoption market might be saturated. The Bureau of Land Management was having a difficult time finding homes for the burros. (For all alternatives the cost of reducing the herd down to the herd management level of 334 is the same. The estimated population in December 1997 was at least 575 burros. Therefore, there would be an additional cost to reach the 334 animal level of at least $282,000). There are also costs for removing trespass burros that enter the Park from adjacent herd management areas.

The grazing fees collected under this alternative would not be sufficient to manage a grazing management program. Additional funding would be needed for staff time and program costs associated with the grazing program.

Administering wilderness access and guzzler maintenance would result in high administrative and operational costs.

The National Park Service would have to make a special designation of the Chicken Strip airstrip under the NPS regulations (36 CFR). The National Park Service would also have to institute safety measures at the Chicken Strip. This could result in costs that are unknown at this time.

The employee housing shortage and lack of housing choices could have adverse impacts on employee morale and employee recruitment. The existing facilities in the Park, including employee housing, reduces transportation time and expenses for Park employees who would otherwise have to commute 1–2 hours to work.

A large administrative workload for Park staff to regulate and monitor nonfederal uses on mining claims would remain. Staff with expertise in mining and environmental impact analysis are required to review mining proposals and prepare required environmental compliance documentation.

IMPACTS ON LANDOWNERSHIP AND USE

Burros use forage and water on unfenced private and state lands within the Park. For example, ranchers run gas-driven pumps to fill stock tanks with well water. This water is used freely by burros and wildlife and the ranchers' cattle. The significance of these impacts is unknown.

Under this alternative, the Park would continue the present course, which is to regulate nonfederal rights through existing NPS or other regulations. Purchases of nonfederal properties are not actively pursued, but may occur on an opportunity basis from willing sellers, provided funding is available. Donations and exchanges are pursued from willing sellers, and third party acquisitions from willing sellers are

encouraged. There would be limited change in private landownership or use. State school sections in the new lands are actively being exchanged by the Bureau of Land Management pursuant to the CDPA direction. The California Desert Protection Act also provides that the Park would make the purchase of base property a priority over other land acquisitions if the permit holder approached the National Park Service as willing sellers.

Approximately 10,500 acres are in private ownership within the Park's boundary . Another 41,340 acres of the Park are owned by the State of California School Commission. Nonfederal interests in the Park that might be acquired include mining claims (there are approximately 125 unpatented and 19 patented mining claim groups totaling 8,706 acres), one grazing permit, and 45 outstanding water rights.

Where mineral development proposals do not meet the NPS regulatory approval standards, the Park would seek funding to acquire the property or interest. The primary commodities affected in the Park would be precious metals (mostly gold), borates, and talc. No economical deposits of rare minerals are known to occur in the Park. Gold mines exist elsewhere in the region outside the Park, including two very large open pit cyanide heap leaching operations adjacent the Park in Panamint Valley and near Bullfrog. Mines that meet the approval standards may still be approved under this alternative.

CUMULATIVE IMPACTS

Maintaining wild horse and burro herd at the NPS units and BLM land in the Northern and Eastern Mojave planning area, as well as the concurrent burro management with the Bureau of Land Management's other planning efforts (West Mojave Plan and Northern & Eastern Colorado Planning Effort), Clark County, Nevada, the Navy's China Lake , and Inyo and San Bernardino National Forests would increase the number of burros available for adoption, significantly increasing management costs and the problems of finding homes for the burros.

The effects of burro and cattle grazing on the soil, water, flora, and fauna are major and cumulative. Restoration of the California desert is inhibited while these animals remain.

Increases in animal populations (domestic, feral, and native) due to availability of water by fabricated devices might cause regional adverse effects on the desert ecology. These adverse effects are due to these larger populations using more resources, and at a faster rate than can be replaced.

Cumulative impacts on archeological sites, ethnographic resources, and historic properties are difficult to analyze with precision. It is presumed that degradation caused by erosion, casual collection, and deterioration to features is more likely to happen when large groups of people are at an archeological site. The significance and integrity of ethnographic sites are potentially diminished by increasing Park visitation. Such sites could become less suitable for ethnographic uses as more people congregate near them. The significance and integrity of historic properties and cultural landscapes are also potentially subjected to inadvertent damage and site degradation by increasing Park visitation.

Growth of administrative facilities is limited due to availability of water and with natural resources receiving priority of use.

There are believed to be only a few warm springs in the California desert that have native flora and fauna intact. This condition would not be improved under this alternative.

Development of mining claims and state lands in the Park could contribute to overall loss of desert resources and habitat for native species in the region. Potential road closures by claimants during active mining could result in a small additional decrease in overall public access.

The existing withdrawal of some Park land from mineral entry over the last twenty years by the Mining in the Parks Act, the Bureau of Land Management for wilderness study areas or other purposes, and by the California Desert Protection Act, has removed some areas of the desert from potential mineral development, except for valid existing rights. Depending on the commodity, small regional price increases could occur from increased transportation or development costs in other areas if properties are denied operating permits due to regulatory standards and are purchased. The price of gold, the primary mineral sought, would not be affected by any actions in the planning area. Any loss of jobs in one sector is expected to be offset by stable and sustainable growth in jobs in the service/tourist industry.

ALTERNATIVE 3: OPTIONAL MANAGEMENT

IMPACTS ON NATURAL ENVIRONMENT

The disturbed desert environment at the Chicken Strip airstrip would be restored.

Designating campsites at Saline Warm Springs would result in less damage to the landscape and would benefit the desert environment. Much of the existing barren area would be given an opportunity to recover. Vehicle presence within the campground area and the freedom to drive anywhere would result in continual damage and destruction of vegetation.

IMPACTS ON CULTURAL RESOURCES

Allowing roadside camping along the Eureka-Saline wilderness road corridor under this alternative could result in adverse impacts on archeological and ethnographic resources and cultural landscapes.

IMPACTS ON VISITOR USE AND FACILITIES

Closing the Chicken Strip airstrip would adversely affect those people who visit the area by plane, an estimated 3–4 flights per week. Saline Valley is part of a Military Operations Area (R2508) that permits aircraft to fly at speeds exceeding 250 knots and altitudes of 200 feet above ground or higher. The presence of military aircraft would diminish some visitors' solitude and enjoyment by the presence of aircraft in a remote wilderness setting.

A few visitors may be deprived of camping space at the Emigrant campground, which provides 10 camping sites, as it is closed because of potential flood hazards.

IMPACTS ON SOCIOECONOMIC ENVIRONMENTS

A separate analysis of the socioeconomic conditions in the planning area and the effects of the proposed action was conducted by Dean Runyan and Associates under contract to the National Park Service. Refer to their report, entitled "Economic Impact Analysis: Northern and Eastern Mojave Planning Area" for details.

IMPACTS ON ADMINISTRATIVE OPERATIONS AND FACILITIES

Sam as alternative 1, except minor costs would accrue for administering wilderness access and guzzler maintenance.

IMPACTS ON LANDOWNERSHIP AND USE

Private land or interests would only be acquired in sensitive resource areas from willing sellers, or if a development project would adversely affect Park resources. Exchange of state school sections would continue.

Impacts on mineral development would be similar to the existing management alternative, except that increased acquisition of mineral rights may occur as a result of the sensitive resource analysis and the

identification of areas where mineral development would be incompatible with the Park mission. This increase is not quantifiable at this time, however a separate impact analysis would be performed at the time the sensitive resource analysis occurs. Overall effects on regional mineral development would be minor.

CUMULATIVE IMPACTS

Same impacts as the Alternative 1 (proposed action).

OTHER COMPLIANCE REQUIREMENTS

The following is a list of mandatory topics that must be covered in a National Park Service environmental impact statement. Where relevant, additional information on these topics is covered in the proposed action and alternatives section of this draft plan.

Energy requirements and conservation potential

Energy conservation is a major design factor in any construction activity proposed in this document.

Natural or depletable resource requirements and conservation potential

The actions proposed in this document promote the conservation of the Park's resources and the enjoyment of these resources by the public.

Urban quality, historic and cultural resources, and design of the built environment

Before work on any of the Park's historic structures can begin, the resources would be evaluated for their historical significance following historic preservation laws. This evaluation would be used in guiding the design for any future construction work.

Environmental Justice EO 12898 (Socially or economically disadvantaged populations)

Any socially or economically disadvantaged population within the Park would not be adversely impacted by any of the alternatives presented in this document.

Wetlands and floodplains

A spring restoration is part of the proposed action. There are no proposed actions that would adversely affect wetlands. No development within floodplains is planned.

Prime and unique agricultural lands

There are no prime, commercial agricultural lands within the Park. The date palm oasis at Furnace Creek is on private land and would not be impacted by any action proposed in this document.

Endangered or threatened plants and animals and their habitats

The Park's sensitive species, including federally listed and state listed endangered or threatened species have been identified. A plan is presently being developed to provide management recommendations for the sensitive plants of the Eureka Dunes area. Other sensitive species would not be adversely impacted by the proposed action. Future development activities would consider their impact on sensitive species.

Important scientific, archeological and other cultural resources including historic properties listed or eligible for the National Register of Historic Places

These features are described within this *Environmental Impact Statement* in the "Affected Environment," "Alternatives, Including Proposed Action," and the "Environmental Consequences" sections.

Ecologically critical areas, wild and scenic rivers, or other unique natural resources

Ecologically critical areas within the Park include the Devils Hole, Darwin Falls, Cottonball Marsh, Amargosa River system, Salt Springs, Salt Creek, Saratoga Springs, and Eureka Dunes. These areas would be protected with the proposed action presented within this *Environmental Impact Statement*.

Death Valley National Park carries out the NPS responsibilities for the National Natural Landmark (NNL) program associated with five areas: Trona Pinnacles, Deep Springs, Timber Mountain Caldera, Fish Slough area of critical environmental concern, and Eureka Dunes. Each of these designated areas are nationally significant natural resources warranting the highest level of protection and preservation from degradation of the characteristics that qualified them for designation as national natural landmarks. The national natural landmark program activities include annual inspection and reporting on their condition of the landmarks or threats to them and developing and maintaining partnerships with federal, state, or other owners of the national natural landmark to promote their continued preservation and protection.

Public health and safety

Public health and safety issues are addressed within this *Revised Draft Environmental Impact Statement*. The proposed actions call for additional public access on information regarding public health and safety.

Sacred sites / Native American Trust resources

Sacred sites and Native American Trust resources would be protected through consultations and the development of agreements with the affected tribes on the protection of these sites and resources.

SUSTAINABLE AND LONG-TERM MANAGEMENT

The National Park Service has a responsibility to sustain the land within its jurisdictional boundaries as a thriving ecosystem while preserving cultural resources and sustaining the quality of the human experiences that can be had on the land. Ecosystems do not recognize political boundaries; this fact may require the National Park Service to act upon external influences that could influence elements within the political boundary. Current major external influences that could adversely affect Park resources include major mining activity such as the current and proposed Briggs Mine development, the proposed Ft. Irwin expansion, the construction of a high level nuclear waste depository at Yucca Mountain, proposed future uses of the Nevada Test Site, and overpumping of groundwater northeast of the Park.

The National Park Service is challenged to support the economic viability of the communities within and surrounding the Park while achieving environmental and cultural resource protection. The concept of sustainability recognizes that our world is dynamic, that change will continue to occur, and that the interrelationship between human beings and the environment must be considered in making decisions. Sustainability is a continual process, a way of thinking about now and the future, not a static set of characteristics that may be defined.

The National Park Service would apply the principles of sustainability to the management of all applicable aspects of this unit of the national park system from interpretation to development and management of facilities. Guiding principles include the efficient use of local resources such as water, energy, and materials to reduce waste, environmental impacts and management costs, and sustaining the quality of the visitor experience and life for local residents by maintaining scenic beauty, environmental quality, and visual harmony within the built environment and its surroundings. The National Park Service would also work with local communities to encourage economic activities that protect and improve the quality of the environment.

The relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity

Implementation of the proposal would result in minor, short-term disruptions to some visitor services, some historic features, and a small part of the natural environment during construction and the roundup, moving, and adoption of burros. Over the long term, the proposed action would result in the elimination of burros, potential reductions in cattle grazing, and restoration of natural vegetation and water. To a slightly lesser extent, the optional alternative would allow the natural habitat to recover. Over the long term, the no-action alternative would not allow the natural habitat to recover as completely.

Any irreversible or irretrievable commitments of resources

All alternatives would have long term and possibly some minor irreversible and irretrievable impacts from small construction activities at the existing campground locations. These sites would not exceed 3 to 25 acres of habitat within the Park. For all alternatives, any mining activity within the Park would permanently damage the natural environment. The extent of the damage would be mitigated, but some damage would still be present. Energy and water conservation would be considered with all Park-related design and construction activities.

Future facility planning and management would also be directed by the National Park Service's *Guiding Principles for Sustainable Design* published in 1993 by the Government Printing Office. Sustainable actions could include reducing waste and water and energy consumption and improving or maintaining the quality of human experiences while reducing or eliminating impacts on the natural environment.

Facilities must relate to the qualities of the surrounding landscape, local or regional architectural themes, providing a special sense of place. Continued operation of facilities would also be managed under sustainable principles such as high visitor satisfaction, easier maintenance, lowering operational costs, reducing waste, and reducing water and energy consumption.

Any adverse impacts that cannot be avoided should the action be implemented

Between 3 and 50 acres of land in the Park would be lost to developments for visitor and maintenance use. If mining proceeded, those impacts would also be unavoidable.

CONSULTATION AND COORDINATION



PUBLIC INVOLVEMENT

Throughout the planning process, the planning team gathered public input on issues, proposed actions, and alternatives. The scoping process included interagency meetings, public workshops, newsletters, Advisory Commission meetings and the development of a homepage on the internet. These were used to identify the issues, alternatives, and impact topics to be considered for planning and to keep the public informed and involved throughout the planning process.

PUBLIC SCOPING AND WORKSHOPS

On August 31, 1995, a public notice describing the purpose of the planning effort was sent to the public, media, agencies, and other organizations on the Bureau of Land Management California Desert District's mailing list (about 6,000 names). The schedule for the first round of public meetings was included in the notice. On September 5, 1995, a notice of intent announcing the beginning of the planning process and the environmental impact statement was published in the *Federal Register*.

Public scoping workshops were held from September 21 through 27, 1995 at 10 locations throughout the planning area and in nearby areas where users live. These workshops were held in Pasadena, San Bernardino, Barstow, Baker, Needles, Ridgecrest, Independence, Lone Pine, and Furnace Creek, CA, and in Las Vegas, NV. About 250 people attended the workshops. These workshops were used to identify issues and concerns that the team should address in preparing separate agency management plans for the area. The team and other agency staff divided into two groups to cover the 10 locations in one week. Detailed notes taken during the workshops were summarized and placed in a notebook for the team's reference.

In late February 1997, a second notice was sent out to inform the public that there would be a second round of workshops in April focusing on conceptual alternatives. A press release was mailed to local media in and near the planning area. Some local newspapers and radio stations informed the public about the workshops. The schedule for these workshops was included in this notice and on the Northern and Eastern Mojave Planning Effort homepage.

Ten public workshops were held from April 14 through 24, 1997 at Las Vegas, Nevada, Needles, Furnace Creek, Bishop, Lone Pine, Barstow, Pasadena, San Bernardino, Baker, and Ridgecrest, California. Each workshop began with a 20-minute presentation by Northern and Eastern Mojave planning team leader Dennis Schramm about the planning effort and the conceptual alternatives that were arrayed in the newsletter. After the presentation the team would set up three stations for natural resources, cultural resources, land use, and visitor experience. At these stations, the team gathered comments and alternatives and wrote them down on the flipcharts. About 330 people attended the workshops.

In September 1998, Death Valley released a *Draft Environmental Impact Statement / General Management Plan.* Approximately 450 printed copies were distributed for review. In addition, about 100 CD-ROMs containing both 1998 draft Park plans were also sent. The plan was also posted on the internet with links from the Park's homepage and the Northern and Eastern Mojave planning page. The notice of availability was published in the *Federal Register* by the Environmental Protection Agency on September 11, 1998 (FR 48727). Written comments were accepted from September 11, 1998 through January 15, 1999, a period of 127 days. Eleven public meetings were held in October 1998 throughout the planning region of southern California and southern Nevada. At these meetings a form was provided for the public to write specific comments that they desired to be addressed by the planning team.

In addition, the planning team attended and participated in five meetings of the Death Valley Advisory Commission to obtain their feedback, concerns and direction regarding the development of the general management plan.

COMMENTS ON THE 1998 DRAFT ENVIRONMENTAL IMPACT STATEMENT AND GENERAL MANAGEMENT PLAN

Death Valley received approximately 600 comment letters from government agencies, tribes, interest groups, organizations, and individuals on the 1998 DEIS/GMP. In addition, members of three environmental groups (National Parks and Conservation Association, The Sierra Club, and The Wilderness Society) sent in approximately 1,800 identical postcards. Several additional letters and postcards were received after the closing date for public comments. All written comments are on file at Park headquarters.

The Environmental Protection Agency assigned a rating of "LO" (lack of objections) to the *1998 Draft Environmental Impact Statement* and commended the National Park Service for developing a quality management plan for the Park. Copies of this revised DEIS / GMP are also provided to the EPA.

Agencies are directed to respond to substantive public comments received during the comment period on draft environmental impact statements. Comments are considered substantive when they: a) question, with reasonable basis, the accuracy of information in the DEIS, b) question, with reasonable basis, the adequacy of the environmental analysis, c) present reasonable alternatives other than those presented in the DEIS, or d) cause changes or revisions in the proposal. Comments that state a preference for one alternative (or component of an alternative), state opinions, or are outside the scope of the plan, are not considered substantive and responses are not provided. However, all letters are read and considered. Substantive comments were addressed by means of written responses, and where appropriate, by revisions to the text of the *1998 Draft Environmental Impact Statement* in this *Revised Draft Environmental Impact Statement*.

Largely due to public comments, substantial changes were made to the 1998 DEIS/GMP. Consequently, the National Park Service prepared a revised DEIS/GMP to address concerns raised and to solicit additional public review on the changes. Although not required, the NPS also chose to provide responses to the comments received on the 1998 DEIS/GMP in an attempt to clarify issues, address inaccuracies, and provide responses to questions raised on the 1998 DEIS/GMP. See the *Comments and Responses to the 1998 Draft Environmental Impact Statement and General Management Plan* document.

NEWSLETTERS AND HOMEPAGE

The first newsletter was sent out in February 1996 to about 6,000 names on the Bureau of Land Management mailing list for the California desert. It included a summary of planning issues identified at the public meetings and statements of purpose and significance for Death Valley National Park, Mojave National Preserve, and BLM-managed lands within the planning area.

The original mailing list was replaced with a planning specific mailing list developed from meeting participants, cooperating agencies, advisory commission members and letters received from the public. A second newsletter was sent in March 1997 to about 500 names on the Northern and Eastern Mojave Planning Effort mailing list. It contained a planning update, the schedule of the workshops, general descriptions of conceptual alternatives, and an outline of issues for which alternatives could be developed.

The newsletter was also posted on the homepage. Both newsletters include a one-page mailback for receiving comments.

In February 1997 a homepage for the three California desert planning efforts went online on the BLM California server. It contained detailed information about each planning effort, background information about the Mojave Desert, and the desert tortoise, pertinent legislation and maps and photographs. In April 1998 the Northern and Eastern Mojave Planning Effort homepage was moved to the NPS server so that the planning team would have direct access. The link to this homepage is found in Death Valley National Park's homepage (www.nps.gov/deva).

A third newsletter was sent out in April 1998 to the Northern and Eastern Mojave Planning Effort mailing list (which had grown to about 900 names) to update readers on the planning effort. The newsletter explained that three separate draft environmental impact statements for each area (Mojave National Preserve, Death Valley National Park, and the BLM public lands within the Northern and Eastern Mojave planning area) would be produced instead of one comprehensive draft environmental impact statement. A revised planning schedule and comment form for receiving the documents were also provided in the newsletter.

A one-page update along with a response form was mailed out to about 3,600 names on the mailing list in February 2000. This update served to inform those individuals and agencies of our current status and our intent to prepare a revised draft environmental impact statement (DEIS). It also requested return of a form identifying interest and desire fir a copy of the revised DEIS.

AGENCY CONSULTATION

An interagency meeting was held on August 23, 1995, to discuss the issues to be addressed in this planning effort. The meeting was attended by 43 staff from the National Park Service, the Bureau of Land Management, and the U.S. Fish and Wildlife Service.

The California and Nevada state historic preservation officers were formally notified by letter in April 1996 of the planning effort. A response letter offering suggestions was received from the California state historic preservation officer in May 1996. A planning team member met briefly with the state historic preservation officer in June 1996 and offered a briefing on the planning effort. No date for the briefing was confirmed. Copies of the draft plan were sent to both offices for review. Brief comments were received from Nevada and are addressed in the separate comments and responses document.

Following the public scoping workshops in April 1997, another two-day interagency meeting was held in Barstow, California to discuss the alternatives and comments heard at the workshops. Twenty-eight staff members from the National Park Service, the Bureau of Land Management, the U.S. Fish and Wildlife Service, the California State Parks, and San Bernardino County attended the two-day meeting. Comments were gathered on the first day and alternatives were developed on the second day.

An interagency meeting was held on April 10, 1997 to discuss listed and sensitive species in the planning area. It was decided that the team would plan for listed and sensitive species based on habitat types. A follow-up meeting was held on June 11, 1997, to continue the discussion. Habitat types were ranked according to priority, and tasks were assigned to staff members to gather information needed to map the habitats with the highest priority.

Consultation with the U.S. Fish and Wildlife Service on listed species was initiated in August 1998. The Las Vegas office dealt with the Devils Hole pupfish while the Ventura office handled the remainder of the

Park. Reinitiation of consultation on the revised DEIS / GMP was begun in February 2000 based on changes made to the document.

Copies of the first internal agency combined draft environmental impact statement were provided to the Environmental Protection Agency in San Francisco. Copies of the separate draft plans for each Park unit were offered for review, but the Environmental Protection Agency declined to review these documents, opting instead to review and comment on the public drafts.

NATIVE AMERICAN CONSULTATION

On March 7, 1996, Team Leader Dennis Schramm, Death Valley National Park Superintendent Dick Martin, and Cultural Resources Specialist Linda Greene met with representatives of the Timbisha Shoshone Tribe at Death Valley. A follow-up meeting with tribal leaders was held at their offices in Death Valley on April 28, 1997. The purpose of these meetings was to initiate government-to-government relationships for the planning effort. The tribe was briefed on the scope and status of the planning effort and discussed issues.

Extensive government-to-government consultations have been conducted with the Timbisha Shoshone Tribe regarding land use matters. These consultations have resulted in the draft report "The Timbisha Shoshone Homeland" (1999) and the *Draft Legislative Environmental Impact Statement, Timbisha Shoshone Homeland* (2000).

An intertribal meeting involving the Fort Mojave Indian Tribe, Timbisha Shoshone Indian Tribe, Chemehuevi Indian Tribe and the San Manuel Band of Mission Indians was held on July 11, 1997 at the Fort Mohave Reservation's Avi Hotel and Casino in the Laughlin, NV area. The purpose of the meeting was to discuss Native American issues and alternatives. Invitation letters were sent to 13 tribal offices and to NPS and BLM staff. Seven representatives for the tribes and nine agency staff attended the meeting. Mr. William "Bill" Mungary (an intertribal leader) facilitated the meeting.

The meeting began with an introduction and greeting by Mr. Mungary followed by an overview of the planning effort by Team Leader Dennis Schramm. Then at their request, the tribes met for an hour and a half without the presence of the agencies. This was then followed by a three-hour discussion between the tribes and agencies that was focused on protection of cultural sites and access to these sites. The tribal representatives also addressed how they would want further consultation to be handled. Copies of the 1998 draft EIS / GMP were provided to the tribe for review and responses to their comments are addressed in the separate comments and responses document.

DEATH VALLEY NATIONAL PARK ADVISORY COMMISSION

Death Valley's Advisory Commission was appointed in September 1997. A series of meetings were held in Death Valley on November 20, 1997, January 8 and 9, 1998, February 11 and 12, 1998, April 22 and 23, 1998, and September 1998. During these meetings, the commission members were briefed on the planning process and schedule, major issues, Park operations and took a field trip through Saline Valley to see some of the issues firsthand. Copies of the draft EIS / GMP were provided to commission members for review, and the commission was briefed on the document during the public review period. A letter was sent by the commission providing comments on the plan and is included in the comments and responses document.

INVITED COOPERATING AGENCIES

At the initiation of the Northern and Eastern Mojave planning effort, a letter was sent to the following agencies advising them of the planning scope and purpose, and inviting their participation as cooperators, or to designate a planning contact. Those marked with as asterisk designated a planning contact.

FEDERAL:

Bureau of Indian Affairs*
National Training Center - Ft. Irwin*
China Lake Naval Air Weapons Center
Army Corp of Engineers
Environmental Protection Agency
Inyo National Forest

STATE:

California Department of Fish and Game
California Department of Parks and Recreation*
California Department of Transportation (Districts 8 & 9)
State Lands Commission
California State Historic Preservation Office*
Nevada State Historic Preservation Office

LOCAL:

County of San Bernardino, CA*
County of Inyo, CA*
County of Mono, CA
Clark County, NV*
Nye County, NV
Esmeralda County, NV

NATIVE AMERICAN:

Timbisha Shoshone Indian Tribe*
Fort Mohave Indian Tribe
Chemehuevi Indian Tribe

LIST OF AGENCIES AND ORGANIZATIONS TO WHOM COPIES OF THE REVISED DRAFT PLAN WERE SENT

Federal Agencies

Department of Agriculture
- Natural Resource Conservation Service, Mojave District

Department of the Army
- Army Corp of Engineers, Sacramento District
- Army Corp of Engineers, Los Angeles District

Department of Defense
- China Lake Naval Weapons Station
- National Training Center, Ft. Irwin

Department of the Interior
- Bureau of Indian Affairs, Sacramento
- Bureau of Indian Affairs, Southern California Agency, Riverside
- Bureau of Land Management, California State Office
- Bureau of Land Management, Desert District, Riverside
- Bureau of Land Management, Barstow Field Office, CA
- Bureau of Land Management, Needles Field Office, CA
- Bureau of Land Management, Nevada State Office
- Bureau of Land Management, Ridgecrest Field Office, CA
- Bureau of Land Management, Las Vegas Field Office, NV
- Bureau of Land Management, Tonopah Field Office, NV
- Fish and Wildlife Service, Field Office, Ventura
- National Park Service, Death Valley National Park
- National Park Service, Denver Service Center
- National Park Service, Mojave National Preserve
- National Park Service, Pacific West Region
- National Park Service, Joshua Tree National Park
- National Park Service, Lake Mead National Recreation Area
- National, Park Service, Sequoia/Kings Canyon National Park
- National Park Service, Washington, D.C.
- National Park Service, Water Resources Division
- U.S. Geological Survey, Biological Resources Division, Colorado Plateau
- U.S. Geological Survey, Canyon Crest Field Station

Eastern Sierra Interagency Visitor Center
Environmental Protection Agency, Region IX
Forest Service, Inyo National Forest

Federal Advisory Groups

Death Valley National Park Advisory Commission

Elected Officials

U.S. Senator Barbara Boxer, California
U.S. Senator Dianne Feinstein, California
U.S. Senator Richard Bryan, Nevada

U.S. Senator Harry Reid, Nevada
U.S. Representative Jerry Lewis, California
U.S. Representative Shelley Berkeley, Nevada
U.S. Representative Jim Gibbons, Nevada
Governor Gray Davis, California
Governor Kenny Guinn, Nevada

State Agencies

California Department of Conservation, Division of Mines and Geology
California Department of Fish and Game
California Department of Parks and Recreation
California Department of Transportation, District 8
California Department of Transportation, District 9
California Federation of Mineralogical Society
California State Historic Preservation Officer
California State Lands Commission
California State University, Fullerton
Nevada Division of Minerals
Nevada State Historic Preservation Officer
University of California, Los Angeles

Local Agencies

Baker Community Service District
Big Pine Chamber of Commerce
City of Los Angeles, Bureau of Engineering
Clark County, Nevada, Department of Parks and Recreation
Clark County, Nevada, Department of Comprehensive Planning
Death Valley Chamber of Commerce
Esmeralda County Board of Commissioners
Indian Wells Valley Water District
Inyo County Agricultural Department
Inyo County Board of Supervisors
Inyo County Planning Department
Kern County Board of Supervisors
Los Angeles Department of Water and Power
Mono County Board of Supervisors
Mono County Planning Department
Nye County Board of Commissioners
Nye County Department of Natural Resources and Federal Facilities
Pinon Mesa Middle School
San Bernardino County Board of Supervisors
Town of Amargosa

Organizations

American Motorcyle Association, District 37
Animal Protection Institute
Barrick Bullfrog Inc
BLM Lands Foundation

Blue Ribbon Coalition
California Association of 4-Wheel Drive Clubs
California Deserts Tourism Association
California Lichen Society
California Off-Road Vehicle Association
Center for Biological Diversity
Chatsworth Womens Club
Committee for Responsible Growth
The Conservation Fund
Death Valley 49'ers
Death Valley Hiker Association
Death Valley Natural History Association
Desert Botanical Garden
Desert Survivors
Eastern Sierra Audubon Society
Environmental Management Associates
F.M. Myrick Research
Friends of the Mojave Road
Furnace Creek Inn & Ranch Resort
Gear Grinders
Genesis Gold Corp
Gold Valley Ranch
High Desert Multiple Use Coalition
Las Vegas Gem Club
Landells Aviation
Lilburn Corporation
Molycorp, Inc.
National Parks and Conservation Association
Natural Resources Defense Council
Needles Gem and Mineral
OMYA
Pahrump Public Lands Advisroy Board
People for the U.S.A.
People for the West
Ponderosa Dairy
Public Lands Council
Rainforest Action Network
Recon
Red Rock Audubon
Restore: The North Woods
Sage Associates
Saline Preservation Association
The Sierra Club
The Sierra Club, Angeles Chapter
Society for the Conservation of Bighorn Sheep
Southwest Forest Alliance
Tierra Del Sol Four Wheel Drive Club of San Diego
U.S. Borax Inc.
Wild Burro Rescue and Preservation Project
The Wilderness Society

Wilderness Watch

Tribal Governments

Timbisha Shoshone Tribe
Pascua Yaqui Tribal Council
Colorado River Tribe

Libraries

Amargosa Public Library
Angeles Mesa Library
Balboa Library
Beatty Library
Boulder City Library
California State University, Long Beach Main Library
Calif. State Univ., Northridge, Oviatt Library
Clark County Library
Henderson Public Library San Bernardino County Library, Administration
Inyo County Free Library, Bishop Branch Library
Inyo County Free Library, Death Valley Branch
Inyo County Free Library, Lone Pine Branch Library
Las Vegas Public Library
Mohave County Library
Napa City County Library
Nevada State Library
Pahrump Library
Pasadena Public Library Pasadena Public Library
Ridgecrest Library
Sacramento Central Library
San Bernardino County Library, Barstow Branch
San Bernardino County Library, Needles Branch
San Bernardino County Library, Victorville Branch
San Francisco Public Library, Civic Center
Seattle Public Library
Shasta County Library
Sunrise Public Library
University of Arizona Library
University of California, Davis, Shields Library
University of California, Irvine, Main Library
University of Nevada, Las Vegas, James R. Dickinson Library

Approximately 300 individuals were sent either printed or CD-ROM version of the plan. The plan is also posted on the internet.

APPENDIXES



APPENDIX A: CALIFORNIA DESERT PROTECTION ACT (PUBLIC LAW 103-433)

CALIFORNIA DESERT PROTECTION ACT (PUBLIC LAW 103-433)

Sections Relevant to Death Valley National Park

One Hundred Third Congress

of the

United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Tuesday,
the twenty-fifth day of January, one thousand nine hundred and ninety-four

An Act

To designate certain lands in the California Desert as wilderness, to establish the Death Valley and Joshua Tree National Parks, to establish the Mojave National Preserve, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

Sections 1 and 2, and titles I through IX of this Act may be cited as the "California Desert Protection Act of 1994".

SEC. 2. FINDINGS AND POLICY.

(a) The Congress finds and declares that--
(1) the federally owned desert lands of southern California constitute a public wildland resource of extraordinary and inestimable value for this and future generations;
(2) these desert wildlands display unique scenic, historical, archeological, environmental, ecological, wildlife, cultural, scientific, educational, and recreational values used and enjoyed by millions of Americans for hiking and camping, scientific study and scenic appreciation;
(3) the public land resources of the California desert now face and are increasingly threatened by adverse pressures which would impair, dilute, and destroy their public and natural values;
(4) the California desert, embracing wilderness lands, units of the National Park System, other Federal lands, State parks and other State lands, and private lands, constitutes a cohesive unit posing unique and difficult resource protection and management challenges;
(5) through designation of national monuments by Presidential

proclamation, through enactment of general public land statutes (including section 601 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2743, 43 U.S.C. 1701 et seq.) and through interim administrative actions, the Federal Government has begun the process of appropriately providing for protection of the significant resources of the public lands in the California desert; and

(6) statutory land unit designations are needed to afford the full protection which the resources and public land values of the California desert merit.

(b) In order to secure for the American people of this and future generations an enduring heritage of wilderness, national parks, and public land values in the California desert, it is hereby declared to be the policy of the Congress that--

(1) appropriate public lands in the California desert shall be included within the National Park System and the National Wilderness Preservation System, in order to--

(A) preserve unrivaled scenic, geologic, and wildlife values associated with these unique natural landscapes;

(B) perpetuate in their natural state significant and diverse ecosystems of the California desert;

(C) protect and preserve historical and cultural values of the California desert associated with ancient Indian cultures, patterns of western exploration and settlement, and sites exemplifying the mining, ranching and railroading history of the Old West;

(D) provide opportunities for compatible outdoor public recreation, protect and interpret ecological and geological features and historic, paleontological, and archeological sites, maintain wilderness resource values, and promote public understanding and appreciation of the California desert; and

(E) retain and enhance opportunities for scientific research in undisturbed ecosystems.

TITLE III--DEATH VALLEY NATIONAL PARK

SEC. 301. FINDINGS.

The Congress hereby finds that—

(1) proclamations by Presidents Herbert Hoover in 1933 and Franklin Roosevelt in 1937 established and expanded the Death Valley National Monument for the preservation of the unusual features of scenic, scientific, and educational interest therein contained;

(2) Death Valley National Monument is today recognized as a major unit of the National Park System, having extraordinary values enjoyed by millions of visitors;

(3) the monument boundaries established in the 1930's exclude and thereby expose to incompatible development and inconsistent management, contiguous Federal lands of essential and superlative natural, ecological, geological, archeological, paleontological, cultural, historical ad wilderness values;

(4) Death Valley National Monument should be substantially enlarged by

the addition of all contiguous Federal lands of national park caliber and afforded full recognition and statutory protection as a National Park; and (5) the wilderness within Death Valley should receive maximum statutory protection by designation pursuant to the Wilderness Act.

SEC. 302. ESTABLISHMENT OF DEATH VALLEY NATIONAL PARK.

There is hereby established the Death Valley National Park (hereinafter in this title referred to as the "park") as generally depicted on twenty-three maps entitled "Death Valley National Park Boundary and Wilderness— Proposed", numbered in the title one through twenty-three, and dated July 1993 or prior, which shall be on file and available for public inspection in the offices of the Superintendent of the park and the Director of the National Park Service, Department of the Interior. The Death Valley National Monument is hereby abolished as such, the lands and interests therein are hereby incorporated within and made part of the new Death Valley National Park, and any funds available for purposes of the monument shall be available for purposes of the park.

SEC. 303. TRANSFER AND ADMINISTRATION OF LANDS.

Upon enactment of this title, the Secretary shall transfer the lands under the jurisdiction of the Bureau of Land Management depicted in the maps described in section 302 of this title, without consideration, to the administrative jurisdiction of the National Park Service for administration as part of the National Park System, and the boundary of the park shall be adjusted accordingly. The Secretary shall administer the areas added to the park by this title in accordance with the provisions of law generally applicable to units of the National Park System, including the Act entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-4).

SEC. 304. MAPS AND LEGAL DESCRIPTION.

Within six months after the enactment of this title, the Secretary shall file maps and a legal description of the park designated under this title with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Natural Resources of the United States House of Representatives. Such maps and legal description shall have the same force and effect as if included in this title, except that the Secretary may correct clerical and typographical errors in such legal description and in the maps referred to in section 302. The maps and legal description shall be on file and available for public inspection in the offices of the Superintendent of the park and the Director of the National Park Service, Department of the Interior.

SEC. 305. WITHDRAWAL.

Subject to valid existing rights, all Federal lands within the park are hereby withdrawn from all forms of entry, appropriation, or disposal under the public land

laws; from location, entry, and patent under the United States mining laws; and from disposition under all laws pertaining to mineral and geothermal leasing, and mineral materials, and all amendments thereto.

SEC. 306. GRAZING.

(a) IN GENERAL- The privilege of grazing domestic livestock on lands within the park shall continue to be exercised at no more than the current level, subject to applicable laws and National Park Service regulations.

(b) SALE OF PROPERTY- If a person holding a grazing permit referred to in subsection (a) informs the Secretary that such permittee is willing to convey to the United States any base property with respect to which such permit was issued and to which such permittee holds title, the Secretary shall make the acquisition of such base property a priority as compared with the acquisition of other lands within the park, provided agreement can be reached concerning the terms and conditions of such acquisition. Any such base property which is located outside the park and acquired as a priority pursuant to this section shall be managed by the Federal agency responsible for the majority of the adjacent lands in accordance with the laws applicable to such adjacent lands.

SEC. 307. DEATH VALLEY NATIONAL PARK ADVISORY COMMISSION.

(a) The Secretary shall establish an Advisory Commission of no more than fifteen members, to advise the Secretary concerning the development and implementation of a new or revised comprehensive management plan for Death Valley National Park.

(b)(1) The advisory commission shall include an elected official for each County within which any part of the park is located, a representative of the owners of private properties located within or immediately adjacent to the park, and other members representing persons actively engaged in grazing and range management, mineral exploration and development, and persons with expertise in relevant fields, including geology, biology, ecology, law enforcement, and the protection and management of National Park resources and values.

(2) Vacancies in the advisory commission shall be filled by the Secretary so as to maintain the full diversity of views required to be represented on the advisory commission.

(c) The Federal Advisory Committee Act shall apply to the procedures and activities of the advisory commission.

(d) The advisory commission shall cease to exist ten years after the date of its establishment.

SEC. 308. BOUNDARY ADJUSTMENT.

In preparing the maps and legal descriptions required by sections 304 and 602 of this Act, the Secretary shall adjust the boundaries of the Death Valley National Park and Death Valley National Park Wilderness so as to exclude from such National

Park and Wilderness the lands generally depicted on the map entitled "Porter Mine (Panamint Range) Exclusion Area" dated June 1994.

TITLE V— MOJAVE NATIONAL PRESERVE

*(*The following section included under Title V is applicable to all wilderness areas and park units designated or enlarged by the CDPA.)*

SEC. 519. NO ADVERSE AFFECT ON LAND UNTIL ACQUIRED.

Unless and until acquired by the United States, no lands within the boundaries of wilderness areas or National Park System units designated or enlarged by this Act that are owned by any person or entity other than the United States shall be subject to any of the rules or regulations applicable solely to the Federal lands within such boundaries and may be used to the extent allowed by applicable law. Neither the location of such lands within such boundaries nor the possible acquisition of such lands by the United States shall constitute a bar to the otherwise lawful issuance of any Federal license or permit other than a license or permit related to activities governed by 16 U.S.C. 460l-22(c). Nothing in this section shall be construed as affecting the applicability of any provision of the Mining in the Parks Act (16 U.S.C. 1901 et seq.), the Clean Air Act (42 U.S.C. 7401 et seq.), or regulations applicable to oil and gas development as set forth in 36 CFR 9B.

TITLE VI--NATIONAL PARK SYSTEM WILDERNESS

SEC. 601. DESIGNATION OF WILDERNESS.

(a) In furtherance of the purposes of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1311 et seq.), the following lands within the units of the National Park System designated by this Act are hereby designated as wilderness, and therefore, as components of the National Wilderness Preservation System:

(1) Death Valley National Park Wilderness, comprising approximately three million one hundred fifty-eight thousand thirty-eight acres, as generally depicted on twenty-three maps entitled "Death Valley National Park Boundary and Wilderness", numbered in the title one through twenty-three, and dated October 1993 or prior, and three maps entitled "Death Valley National Park Wilderness", numbered in the title one through three, and dated July 1993 or prior, and which shall be known as the Death Valley Wilderness.

(2) Joshua Tree National Park Wilderness Additions, comprising approximately one hundred thirty-one thousand seven hundred and eighty acres, as generally depicted on four maps entitled "Joshua Tree National Park Boundary and Wilderness— Proposed", numbered in the title one through four, and dated October 1991 or prior, and which are hereby incorporated in, and which shall be deemed to be a part of the Joshua Tree Wilderness as designated by Public Law 94-567.

(3) Mojave National Preserve Wilderness, comprising approximately six hundred ninety-five thousand two hundred acres, as generally depicted on ten maps entitled "Mojave National Park Boundary and Wilderness— Proposed", and numbered in the title one through ten, and dated March 1994 or prior, and seven maps entitled "Mojave National Park Wilderness— Proposed", numbered in the title one through

seven, and dated March 1994 or prior, and which shall be known as the Mojave Wilderness.

(b) POTENTIAL WILDERNESS- Upon cessation of all uses prohibited by the Wilderness Act and publication by the Secretary in the Federal Register of notice of such cessation, potential wilderness, comprising approximately six thousand eight hundred and forty acres, as described in "1988 Death Valley National Monument Draft General Management Plan Draft Environmental Impact Statement" (hereafter in this title referred to as "Draft Plan") and as generally depicted on map in the Draft Plan entitled "Wilderness Plan Death Valley National Monument", dated January 1988, and which shall be deemed to be a part of the Death Valley Wilderness as designated in paragraph (a)(1). Lands identified in the Draft Plan as potential wilderness shall be managed by the Secretary insofar as practicable as wilderness until such time as said lands are designated as wilderness.

SEC. 602. FILING OF MAPS AND DESCRIPTIONS.

Maps and a legal description of the boundaries of the areas designated in section 601 of this title shall be on file and available for public inspection in the appropriate offices of the National Park Service, Department of the Interior. As soon as practicable after the date of enactment of this title, maps and legal descriptions of the wilderness areas shall be filed with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Natural Resources of the United States House of Representatives, and such maps and legal descriptions shall have the same force and effect as if included in this title, except that the Secretary may correct clerical and typographical errors in such maps and legal descriptions.

SEC. 603. ADMINISTRATION OF WILDERNESS AREAS.

The areas designated by section 601 of this title as wilderness shall be administered by the Secretary in accordance with the applicable provisions of the Wilderness Act governing areas designated by that title as wilderness, except that any reference in such provision to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this title, and where appropriate, and reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

TITLE VII--MISCELLANEOUS PROVISIONS

SEC. 702. LAND TENURE ADJUSTMENTS.

In preparing land tenure adjustment decisions with the California Desert Conservation Area, of the Bureau of Land Management, the Secretary shall give priority to consolidating Federal ownership within the national park units and wilderness areas designated by this Act.

SEC. 703. LAND DISPOSAL.

Except as provided in section 406 of this Act, none of the lands within the boundaries of the wilderness or park areas designated under this Act shall be granted to or otherwise made available for use by the Metropolitan Water District or any other agencies or persons pursuant to the Boulder Canyon Project Act (43 U.S.C. 617-619b) or any similar Acts.

SEC. 704. MANAGEMENT OF NEWLY ACQUIRED LANDS.

Any lands within the boundaries of a wilderness area designated under this Act which are acquired by the Federal Government, shall become part of the wilderness area within which they are located and shall be managed in accordance with all the provisions of this Act and other laws applicable to such wilderness area.

SEC. 705. NATIVE AMERICAN USES AND INTERESTS.

(a) ACCESS- In recognition of the past use of the National Park System units and wilderness areas designed under this Act by Indian people for traditional cultural and religious purposes, the Secretary shall ensure access to such park system units and wilderness areas by Indian people for such traditional cultural and religious purposes. In implementing this section, the Secretary, upon the request of an Indian tribe or Indian religious community, shall temporarily close to the general public use of one or more specific portions of the park system unit or wilderness area in order to protect the privacy of traditional cultural and religious activities in such areas by Indian people. Any such closure shall be made to affect the smallest practicable area for the minimum period necessary for such purposes. Such access shall be consistent with the purpose and intent of Public Law 95-341 (42 U.S.C. 1996) commonly referred to as the "American Indian Religious Freedom Act", and with respect to areas designated as wilderness, the Wilderness Act (78 Stat. 890; 16 U.S.C. 1131).

(b) STUDY- (1) The Secretary, in consultation with the Timbisha Shoshone Tribe and relevant Federal agencies, shall conduct a study, subject to the availability of appropriations, to identify lands suitable for a reservation for the Timbisha Shoshone Tribe that are located within the Tribe's aboriginal homeland area within and outside the boundaries of the Death Valley National Monument and the Death Valley National Park, as described in title III of this Act.

(2) Not later than 1 year after the date of enactment of this title, the Secretary shall submit a report to the Committee on Energy and Natural Resources and the Committee on Indian Affairs of the United States Senate, and the Committee on Natural Resources of the United States House of Representatives on the results of the study conducted under paragraph (1).

SEC. 706. FEDERAL RESERVED WATER RIGHTS.

(a) Except as otherwise provided in section 204 of this Act, with respect to each wilderness area designated by this Act, Congress hereby reserves a quantity of water sufficient to fulfill the purposes of this Act. The priority date of such reserved water rights shall be the date of enactment of this Act.

(b) The Secretary and all other officers of the United States shall take all steps necessary to protect the rights reserved by this section, including the filing by the Secretary of a claim for the quantification of such rights in any present or future appropriate stream adjudication in the courts of the State of California in which the United States is or may be joined in accordance with section 208 of the Act of July 10, 1952 (66 Stat. 560, 43 U.S.C. 666), commonly referred to as the McCarran Amendment.

(c) Nothing in this Act shall be construed as a relinquishment or reduction of any water rights reserved or appropriated by the United States in the State of California on or before the date of enactment of this Act.

(d) The Federal water rights reserved by this Act are specific to the wilderness area located in the State of California designated under this Act. Nothing in this Act related to the reserved Federal water rights shall be construed as establishing a precedent with regard to any future designations, nor shall it constitute an interpretation of any other Act or any designation made thereto.

SEC. 707. CALIFORNIA STATE SCHOOL LANDS.

(a) NEGOTIATIONS TO EXCHANGE- Upon request of the California State Lands Commission (hereinafter in this section referred to as the "Commission"), the Secretary shall enter into negotiations for an agreement to exchange Federal lands or interests therein on the list referred to in subsection (b)(2) for California State School lands or interests therein which are located within the boundaries of one or more of the wilderness areas or park system units designated by this Act (hereinafter in this section referred to as "State School lands."). The Secretary shall negotiate in good faith to reach a land exchange agreement consistent with the requirements of section 206 of the Federal Land Policy and Management Act of 1976.

(b) PREPARATION OF LIST- Within six months after the date of enactment of this Act, the Secretary shall send to the Commission and to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Natural Resources of the United States House of Representatives a list of the following:

(1) State School lands or interests therein (including mineral interests) which are located within the boundaries of the wilderness areas or park system units designated by this Act.

(2) Lands within the State of California under the jurisdiction of the Secretary that the Secretary determines to be suitable for disposal for exchange, identified in the following priority--

(A) lands with mineral interests, including geothermal, which have the potential for commercial development but which are not currently under mineral lease or producing Federal mineral revenues;

(B) Federal claims in California managed by the Bureau of Reclamation that the Secretary determines are not needed for any Bureau of Reclamation project; and

(C) any public lands in California that the Secretary, pursuant to the Federal Land Policy and Management Act of 1976, has determined to be suitable for disposal through exchange.

(3) Any other Federal land, or interest therein, within the State of California, which is or becomes surplus to the needs of the Federal Government. The Secretary may exclude, in the Secretary's discretion, lands located within, or contiguous to, the exterior boundaries of lands held in trust for a federally recognized Indian tribe located in the State of California.

(4) The Secretary shall maintain such list and shall annually transmit such list to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Natural Resources of the United States House of Representatives until all of the State School lands identified in paragraph (1) have been acquired.

(c) DISPOSAL OF SURPLUS FEDERAL PROPERTY- (1) Effective upon the date of enactment of this title and until all State School lands identified in paragraph (b)(1) of this section are acquired, no Federal lands or interests therein within the State of California may be disposed of from Federal ownership unless--

(A) the Secretary is notified of the availability of such lands or interest therein;

(B) the Secretary has notified the Commission of the availability of such lands or interests therein for exchange; and

(C) the Commission has not notified the Secretary within six months that it wishes to consider entering into an exchange for such lands or interests therein.

(2) If the Commission notifies the Secretary that it wishes to consider an exchange for such lands or interests therein, the Secretary shall attempt to conclude such exchange in accordance with the provisions of this section as quickly as possible.

(3) If an agreement is reached and executed with the Commission, then upon notice to the head of the agency having administrative jurisdiction over such lands or interests therein, the Secretary shall be vested with administrative jurisdiction over such land or interests therein for the purpose of concluding such exchange.

(4) Upon the acquisition of all State School lands or upon notice by the Commission to the Secretary that it no longer has an interest in such lands or interests therein, such lands or interests shall be released to the agency that originally had jurisdiction over such lands or interests for disposal in accordance with the laws otherwise applicable to such lands or interests.

(d) NO EFFECT ON MILITARY BASE CLOSURES- The provisions of this section shall not apply to the disposal of property under title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526; 102 Stat. 2627; 10 U.S.C. 2687 note) or the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510; 104 Stat. 1808; 10 U.S.C. 2687 note).

SEC. 708. ACCESS TO PRIVATE PROPERTY.

The Secretary shall provide adequate access to nonfederally owned land or interests in land within the boundaries of the conservation units and wilderness areas designated by this Act which will provide the owner of such land or interest the reasonable use and enjoyment thereof.

SEC. 709. FEDERAL FACILITIES FEE EQUITY.

(a) POLICY STATEMENT- It is the intent of Congress that entrance, tourism or recreational use fees for use of Federal lands and facilities not discriminate against any State or any region of the country.

(b) FEE STUDY- The Secretary, in cooperation with other affected agencies, shall prepare and submit a report by May 1, 1996 to the Committee on Energy and Natural Resources of the United States Senate, the Committee on Natural Resources of the United States House of Representatives, and any other relevant committees, which shall--

(1) identify all Federal lands and facilities that provide recreational or tourism use; and

(2) analyze by State and region any fees charged for entrance, recreational or tourism use, if any, on Federal lands or facilities in a State or region, individually and collectively.

(c) RECOMMENDATIONS- Following completion of the report in subsection (b), the Secretary, in cooperation with other affected agencies, shall prepare and submit a report by May 1, 1997 to the Committee on Energy and Natural Resources of the United States Senate, the Committee on Natural Resources of the United States House of Representatives, and any other relevant committees, which shall contain recommendations which the Secretary deems appropriate for implementing the congressional intent outlined in subsection (a).

SEC. 710. LAND APPRAISAL.

Lands and interests in lands acquired pursuant to this Act shall be appraised without regard to the presence of a species listed as threatened or endangered pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).

SEC. 711. DEFINITION.

Any reference to the term "this Act" in titles I through IX shall be deemed to be solely a reference to sections 1 and 2, and titles I through IX.

TITLE VIII--MILITARY LANDS AND OVERFLIGHTS

SEC. 801. SHORT TITLE AND FINDINGS.

(a) SHORT TITLE- This title may be cited as the "California Military Lands Withdrawal and Overflights Act of 1994".

(b) FINDINGS- The Congress finds that--

(1) military aircraft testing and training activities as well as demilitarization activities in California are an important part of the national defense system of the United States, and are essential in order to secure for the American people of this and future generations an enduring and viable national defense system;

(2) the National Park System units and wilderness areas designated by this Act lie within a region critical to providing training, research, and development for the Armed Forces of the United States and its allies;

(3) there is a lack of alternative sites available for these military training, testing, and research activities;

(4) continued use of the lands and airspace in the California desert region is essential for military purposes; and

(5) continuation of these military activities, under appropriate terms and conditions, is not incompatible with the protection and proper management of the natural, environmental, cultural, and other resources and values of the Federal lands in the California desert area.

SEC. 802. MILITARY OVERFLIGHTS.

(a) OVERFLIGHTS- Nothing in this Act, the Wilderness Act, or other land management laws generally applicable to the new units of the National Park or Wilderness Preservation Systems (or any additions to existing units) designated by this Act, shall restrict or preclude low-level overflights of military aircraft over such units, including military overflights that can be seen or heard within such units.

(b) SPECIAL AIRSPACE- Nothing in this Act, the Wilderness Act, or other land management laws generally applicable to the new units of the National Park or Wilderness Preservation Systems (or any additions to existing units) designated by this Act, shall restrict or preclude the designation of new units of special airspace or the use or establishment of military flight training routes over such new park system or wilderness units.

(c) NO EFFECT ON OTHER LAWS- Nothing in this section shall be construed to modify, expand, or diminish any authority under other Federal law.

TITLE IX--AUTHORIZATION OF APPROPRIATIONS

SEC. 901. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to the National Park Service and to the Bureau of Land Management to carry out this Act an amount not to exceed $36,000,000 over and above that provided in fiscal year 1994 for additional administrative and construction costs over the fiscal year 1995-1999 period, and $300,000,000 for all land acquisition costs. No funds in excess of these amounts may be used for construction, administration, or land acquisition authorized under this Act without a specific authorization in an Act of Congress enacted after the date of enactment of this Act.

APPENDIX B: LAND PROTECTION PLAN FOR DEATH VALLEY NATIONAL PARK

LAND PROTECTION PLAN FOR DEATH VALLEY NATIONAL PARK

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LAND PROTECTION PLAN SUMMARY

as of 6/2000

Current Landownership Within Boundary: Death Valley has approximately 479 miles of boundary (including the 1-mile perimeter of Devils Hole).

	Acres
Federal	3,344,313
State of California	41,340
Private	10,519
Total	**3,396,172**

Acres Remaining to be Protected: 51,859

Proposed Protection Methods: Interim/Cooperative Agreements, Regulation
Permanent- Fee Acquisition, Agreements, Regulation

Funding Status: Appropriated to Date: $3,688,640.27
Obligated to Date: $3,663, 640.27
Balance: $25,000.00

Top Priority:	**Tract**	**Acres**	**Reason for High Priority**
	34-109 (Furnace Creek Wash)	2,935	Outstanding scenic area; mining threat; along primary entrance route

Planning Team: Dick Martin, Superintendent, Death Valley National Park
Dennis Schramm, Planner, Mojave National Preserve

Status of Environmental Compliance: Categorically excluded.

Status of Jurisdiction: Proprietary

I. INTRODUCTION

A. DEPARTMENTAL AND NPS POLICIES ON LAND PROTECTION

The use of the federal portion of the Land and Water Conservation Fund (LWCF) is governed by a policy statement issued in May 1982 by the Department of the Interior (47FR19784). The policy requires that each agency using the fund will:

1. Identify the lands or interests in lands that need to be in federal ownership to achieve management unit purposes consistent with published objectives of the unit.

2. Use, to the maximum extent practical, cost-effective alternatives to direct federal purchase of private lands, and, when acquisition is necessary, acquire or retain only the minimum interests necessary to meet management objectives.

3. Cooperate with landowners, other federal agencies, state and local governments and the private sector to manage lands for public use or protect it for resource conservation.

4. Formulate, or revise as necessary, plans for land acquisition and resource use to assure that the socio-cultural impacts are considered and that the most outstanding areas are adequately managed.

In response to this policy, the National Park Service published a final interpretive rule on May 11, 1983 (48FR21121). That rule requires that the National Park Service develop a land protection plan for each unit of the national park system that contain nonfederal lands within the area's authorized boundary.

The purpose of the plan is to identify methods of assuring the protection of the natural, historic, scenic, cultural, recreation or other significant resources and to provide for adequate visitor use. The plan will be prepared in compliance with relevant legislation, other Congressional guidelines, Executive Orders, and departmental and National Park Service policies. The plan will be clear and concise, prepared with public participation and include full consideration of the alternatives available for land protection. Plans will be updated as necessary to reflect changing conditions.

The major issues to be addressed by the plan are the uses that would be compatible on the remaining nonfederal tracts, the protection methods most usefully employed to avoid incompatible uses and protect Park resources, and the relative urgency of protection action on the various tracts.

Land protection plans are intended to provide general guidance for long-range planning and budgeting, subject to the availability of funds and other constraints. They are not intended in any way to diminish the rights of nonfederal landowners, nor do they constitute an offer to purchase lands or interests in lands.

B. NEED FOR THE PLAN AND MAJOR ISSUES

Death Valley National Park contains nonfederal lands within the boundaries authorized by Congress. On October 31, 1994, Congress redesignated Death Valley National Monument as a national park and added approximately 1.3 million acres to the unit, creating a Park of 3.3 million acres total. Most of the new Park lands were already public lands, previously administered by the Bureau of Land Management, and jurisdiction over which was transferred to the National Park Service.

The major issues that the land protection plan for each unit addresses are:

1. The extent to which existing and potential uses of private lands and access for such use through and across federal park lands, may adversely affect the natural appearance of the unit, the protection and restoration of natural systems, wilderness integrity and values and cultural sites, objects, and structures.

2. The extent to which existing and potential uses of private lands area may preclude or limit visitor enjoyment of Park resources or may conflict with the aesthetic and ecologic conditions.

3. The extent to which mining activity may affect Park values and resources.

4. The extent to which existing or potential uses of private lands, and access for such uses through and across federal lands may affect species listed as threatened or endangered by the U.S. Fish and Wildlife Service and habitat listed as critical to the survival of the species.

5. The anticipated effectiveness of federal, state, and local regulations in achieving Park objectives on nonfederal lands within the units.

6. The anticipated effectiveness of agreements in achieving Park objectives on nonfederal lands within the units.

7. The anticipated effectiveness of less-than-fee acquisition in achieving protection of Park resources on nonfederal lands within the units.

8. The potential for reservation of use and occupancies when acquiring lands from current owners.

9. The relative urgency of protection among the several areas in the units with nonfederal lands.

II. PURPOSE OF THE PARK AND RESOURCES TO BE PROTECTED

A. PURPOSE OF THE PARK

The Act of August 25, 1916, the Organic Act of the National Park Service (16 U.S.C. 1), prescribed that the "fundamental purpose of...parks...is to conserve the scenery and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." In the Act of August 18, 1970, Congress declared that the Organic Act provisions, including the statement of fundamental purpose, shall apply to all areas of the National Park System "to the extent that such provisions are not in conflict..." with the statute that specifically applies to that particular area. (16 U.S.C. 1c.(b))

In 1978 Congress amended the 1970 act, cited above, to state that the "authorization of activities" in parks "shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress."

The majority of lands within Death Valley National Park are designated by law as wilderness, by the Act of October 31, 1994. The Wilderness Act of 1964 further prescribes the purpose of the wilderness designated lands. That purpose is to preserve lands in their natural condition "for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness." The Wilderness Act defines wilderness as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain,...an area of undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions..."

In summary, the purpose of parks is to preserve the natural and cultural resources so that they can be interpreted, understood and enjoyed by present and future generations.

The development of these land protection plans is being done in conjunction with the general management plan. An initial component in the development of a general management plan is the discussion and description of the specific Park purpose and significance. Elsewhere in this *Environmental Impact Statement / General Management Plan* are complete descriptions of the purpose and significance. Please refer to that section of the document for the specific Park unit purpose and significance.

B. RESOURCES TO BE PROTECTED

Natural Resources

This section is a summary of more comprehensive information presented in the 1983 *Natural and Cultural Resources Management Plan*. For more detailed information please refer to that document.

Death Valley National Park is the lowest point in the Western Hemisphere and one of the hottest places in the world. It is also a vast geological museum, containing examples of most of the earth's geologic eras. Here, plant and animal species, some of which occur nowhere else in the world, have adapted to the harsh desert environment. People have also adjusted to these severe conditions, as evidenced by extensive archeological sites, historical sites related to successive ways of prospectors, miners, and homesteaders,

present-day residences of Native Americans, and even the current styles of resort developments and active mines.

The size of the Park and the diversity of its resources make the area difficult to characterize. The salt pans of the main valley, the surrounding canyons, the unique plants and animals, and the various historical sites all represent a portion of the national park, but no single feature typifies the whole Park. The assemblage of diverse natural and cultural resources, and the legends and fantasies that have evolved about the pioneers — including Death Valley Scotty — are all part of the visitor experience.

Perhaps the Park's greatest assets today are the clear air , vast open spaces that stretch toward distant horizons, and the overwhelming silence. About 1.2 million people a year (1997 numbers) come to Death Valley to experience the stark and lonely vastness of the valley; the panorama of rugged canyons and mountains; the pleasures of the dry, warm winter climate; the challenge of the hot, arid summer; the relief of the cooler mountains; and the reminders of frontier life.

Death Valley National Park includes nearly 120 miles of Death Valley, a 156-mile-long north/south-trending trough that formed between two major block-faulted mountain ranges: the Amargosa Range on the east and the Panamint Range on the west. Telescope Peak, the highest peak in the Park and in the Panamint Mountains, rises 11,049 feet above sea level and lies only 15 miles from the lowest point in the United States in the Badwater Basin salt pan, 282 feet below sea level.

The Amargosa Range, which forms the eastern wall of Death Valley, includes three mountain groups from north to south: the Grapevine Mountains (average elevation of the mountain crest is 7,000 feet), the Funeral Mountains (4,000 feet average crest elevation), and the Black Mountains (5,300 feet average crest elevation). The western slopes of all these mountain groups are precipitous and are cut by steep-walled canyons. Both the Funeral and the Black mountains are relatively treeless and arid.

The Panamint Range on the west side of Death Valley includes the Cottonwood Mountains to the north (average crest elevation 6,000 feet) and the Panamint Mountains to the south (average crest elevation over 8,000 feet). Long, sheer-walled canyons cut the eastern slopes of the mountains. Broad basins such as Harrisburg, Nemo, and White Sage flats, Wildrose Canyon, and Butte Valley contrast sharply with the ruggedness of the surrounding terrain. The Cottonwood Mountains include smaller isolated north-south trending mountains lying between Sand Flat, Hidden Valley and Racetrack Valley. These valleys are small basins with no drainage outlets, and each contains a small, silt-floored dry lake.

Large aprons of gravel (alluvial fans) lie against the mountains. These alluvial sediments deposited in Death Valley during the past several million years are sands and gravels removed by flash floods from the adjacent mountains. There are obvious differences in the sizes of the alluvial fans on the opposite sides of the valley; fans of the higher Panamint Mountains to the west are larger than the fans of the Black Mountains to the east.

The Death Valley hydrologic basin encompasses about 8,700 square miles in California and Nevada (Hunt and Mabey 1966). It is a closed basin and all surface drainage is internal; no streams exit the valley. Various rock types within the hydrologic basin affect regional surface and groundwater systems. Groundwater recharge on the east side of the Park is from local precipitation and underflow from drainage basins far beyond the Park boundary. Recharge from the west is due to local precipitation and snow retention in watersheds of the Panamint and Cottonwood mountains. Known surface water sources in the Death Valley region include potholes, seeps, wells, springs, and ponds. To date, 330 water sources of varying dependability and quality have been recorded within the Park.

The diversity of Death Valley National Park's plant communities result partly from the region's location in the Mojave Desert, a zone of tension and overlap between the Great Basin Desert to the north and the Sonoran Desert to the south (Kearney and Peebles 1960). This location, combined with the great relief found within the Park — from 282 feet below sea level to 11,049 feet above sea level— supports vegetation typical of four biotic life zones: the lower Sonoran, the Canadian, and even the Arctic/Alpine in portions of the Panamint Range (Jepson 1923; Storer and Usinger 1968). Based on Munz and Keck (1968) classifications, seven plant communities can be categorized within these life zones, each characterized by dominant vegetation and representative of three vegetation types: scrub, desert woodland, and coniferous forest. Microhabitats further subdivide some communities into zones, especially on the valley floor.

Scrub or Desert

Scrub is the most extensive vegetation type in Death Valley. It dominates about three-fourths of the Park landscape and includes the alkali sink, creosote bush scrub, shadscale scrub, and sagebrush scrub communities. The alkali sink or salt flat community occurs in the lower elevations of the Park.

Desert Woodland

Desert woodland is an open, well-spaced community ranging from elevations of about 7,000 feet up to about 9,500 feet. Much of the soil within this community is bare and surfaced with a hard, wind scoured layer similar to desert pavement. The community is dominated by single-leaf pinyon pine (*Pinus monophylla*) and scattered individuals of juniper (*Juniperus osteosperma*).

Coniferous Forest

Coniferous forest in Death Valley National Park includes subalpine forest and some bristlecone pine forests. Both communities occur in narrow belts at upper elevations. Dominants of subalpine forest including limber pine *(Pinus flexilis),* occur in mosaic concentrations rather than uniformly throughout the area. The bristlecone pine forest community occurs chiefly above 10,000 feet in the Panamint Range, where spacing of individual bristlecones *(Pinus aristata)* and limber pine *(Pinus flexilis)* appear more as an open woodland rather than a forest.

Wildlife

Death Valley National Park and the adjacent desert support a variety of wildlife species. Within Death Valley and the surrounding desert there are 51 species of native mammals, two species of exotic mammals, well over 346 species of birds, 36 species of reptiles, three species of amphibians, and six species of fishes (Hansen 1972 and 1973; Landye 1973). Small mammals are more numerous than large mammals, such as desert bighorn, bobcat, mountain lion and mule deer. An estimated 200 to 250 mule deer are present in the pinyon/juniper associations of the Grapevine, Cottonwood, and Panamint mountains.

The Nelson bighorn *(Ovis canadensis nelsoni)* is the subspecies native to Death Valley. Bighorn occur in desert mountain ranges where the terrain includes rolling hills for feeding areas and nearby cliffs within steep canyons that can be used for escape. Their range does not correlate with any specific vegetative type. The present population is estimated at 520 and appears to be declining. The cause of the decline has not been determined; however, several factors may be involved, including the introduction of diseases from livestock, poor range conditions, rapid increase in human activities (such as mining, road building, urbanization, and increased recreation), illegal hunting, and appropriation of water (Seymour 1972). Competition with other animals and drying of springs are additional factors resulting in loss of habitat. To reduce visitor impacts and prevent undue disturbance of wildlife, backcountry camping is not permitted within .25 mile of springs.

Endangered, Threatened, Endemic, or Rare Plants and Animals

Four plants found in the Eureka Dunes area of Death Valley National Park have been officially listed as endangered or threatened by the U.S. Fish and Wildlife Service. In addition, the spring-loving centaury, a threatened plant species, is found at Travertine Spring. Numerous other species are considered "sensitive" due to their limited distribution, endemism to Death Valley, or other factors.

The California Native Plant Society has compiled locality information for many of these species (see 1983 *Natural and Cultural Resources Management Plan,* California Native Plant Society 1976, 1978). A preliminary report from the late 1970s entitled, "Rare Plant Studies: An Inventory of the Endemic, Threatened and Endangered Plants of Death Valley National Park," is available to the staff for management purposes. NPS *Management Policies* provide special consideration for unique (endemic) or rare species.

The peregrine falcon and Devils Hole pupfish are listed by the U.S. Fish and Wildlife Service as endangered species. California and Nevada have listed additional species as rare or fully protected under state program, based on degrees of endangerment to populations and their habitat. The 1982 plan lists animals with special federal or state classification and whether they are endemic to Death Valley.

Numerous species of aquatic mollusks (snails) are known to be endemic to Park waters (see Appendix C: Species of Special Consideration). Endemic insects occur at Saratoga Springs and Devils Hole. Systematic inventories of the Park have not been made for additional endemic species.

Air Quality

Death Valley National Park is classified as a Class II clean air area (42 U.S.C. 7401 et seq.). Under this classification, a moderate amount of industrial activity may be permitted by the state in the vicinity of the Park as long as the maximum allowable increases over baseline concentrations established for sulfur dioxide and particulate matter are not exceeded. In 1980 it was determined that Death Valley possesses important air quality attributes, and the Park was listed for possible redesignation as a class I area, pursuant to section 164(d) of the Clean Air Act. The important attributes include visibility (vistas of salt flats, sand dunes, and distant mountain ranges are integral to the visitor experience) and plants (some species, such as desert holly, are sensitive to ozone and other pollutants). Redesignation to class I would mean more stringent standards for sulfur dioxide and particulate matter, and resource protection requirements would be specified.

Major nearby sources of pollution are the Searles Valley (Trona) complex, which is 20 miles to the southwest, and the Clay Camp colemanite processing facility, which is 10 miles to the east. The Searles Valley complex produces soda ash, borax, potash, and other chemicals. Cyclones and electrostatic precipitators are used at Trona to control particulate emissions, and scrubbers are used to remove sulfur dioxide. The long-range transport of air pollutants, particularly ozone, is also a problem. Ozone originates from precursors, such as volatile organic compounds and nitrogen oxides, from as far away as the San Joaquin Valley and perhaps the Los Angeles basin.

Mineral Resources

Mineral deposits of known economic value are limited to talc and borates. Most of the talc production came from a talc-bearing belt from the Warm Spring and Galena canyons in the southern portion of the Panamint Range. Additional economic talc deposits occur in the southeastern portion of the Park in the Ibex Hills vicinity. Borate deposits occur in the Furnace Creek Wash area. The few metal deposits that proved profitable are exhausted. At this time no metal mines are in production inside the Park.

Early mining activity (1870 to 1940s) included a few town sites and mills as well as mine shafts and dumps. While surface disturbances were usually small and confined to a few acres because most mines were underground, numerous small exploration pits and adits were widely scattered over the area. With the advent of machinery capable of moving large volumes of material in a short time, the character of mining in Death Valley changed, and surface mines became predominant in the early 1970s. The largest open-pit mine within the Park is American Borate Company's Boraxo Mine, a borate operation which has been mined out. This mine covers approximately 250 acres and the deposit was mined to a depth of about 400 feet. Other inactive open-pit mines in the monument include another borate mine in Furnace Creek Wash, five talc mines in the area of Warm Springs and Galena canyons, and one talc mine in the Ibex Hills.

Cultural Resources

Archeology

Although it is estimated that only about 6 percent of the lands within the boundaries of pre-1994 Death Valley National Monument (and an even smaller proportion of the lands added to the monument in 1994) have been surveyed for archeological resources, the overall cultural sequence is well documented. In particular, the archeological research and survey efforts of Hunt and Wallace, conducted primarily during the 1950s and 1960s, have formed the bulk of extant data about prehistoric native cultures. Nearly 2,000 archeological sites, covering some 10,000 years of human activity (Pleistocene Era; Lake Mojave Period, 10,000–5000 B.C.; Pinto Period, 5000–2000 B.C.; Gypsum Period, 2000 B.C.–500 A.D.; Saratoga Springs Period, 500–1200 A.D.; Shoshonean Period, 1200 A.D.–Euro-American Contact) have been identified. Site types include: house circles; habitation areas, complex sites; rockshelters; campsites; workshops; quarries and lithic scatters; hunting blinds; plant food processing stations; storage pits; cemetery and burial areas; rock art (petroglyphs/pictographs); rock alignments; and rock traps or caches. Areas of particular archeological significance within the Park boundaries include Butte Valley, Mesquite Flat, the floor of Death Valley, Grapevine Canyon, high elevation localities in the Panamint Mountains, alluvial fans on the west side of Death Valley, and springs.

Euro-American historic archeological sites are generally associated with transportation networks and resource procurement/exploitation features. In the Park, transportation routes, water sources, and mining operations are prime locations where such archeological sites may be found.

No prehistoric archeological sites or districts within the Park boundaries are listed on, or have been determined eligible for listing on, the National Register of Historic Places. Draft national register nomination forms for archeological districts in the Park have been prepared for the following: Butte Valley, Mesquite Spring, Racetrack-Goldbelt, Ubehebe Crater, Upper Emigrant, Upper Panamint, Death Valley Salt Pan, Furnace Creek, Mesquite Flat, Grapevine Canyon, Ibex Spring, Keane Wonder Mine, Saratoga Springs, and Scotty's Ranch. The National Park Service is planning to prepare national register nomination forms for the Lower Vine Ranch, Furnace Creek Wash, Saline Valley, and Eureka Valley archeological districts.

History

The first Caucasians known to have entered Death Valley were adventurers seeking a shortcut to the northern California goldfields during the winter of 1849–50. The infamous name Death Valley characterizes the suffering and anxiety endured during their wanderings through the inhospitable region. With the exception of scattered railroad and General Land Office surveyors in the 1850s, the valley remained largely unvisited until rumors of its possible mineral riches spread through the West during the 1850s and 1860s. Lack of documented information on the region prompted a government-sponsored California/Nevada boundary survey in 1861 as well as military expeditions led by Cavalry Lieutenant

Charles E. Bendire in 1867 and George M. Wheeler in 1871 and 1875. The most productive expedition was the U.S. Department of Agriculture's Death Valley Expedition headed by C.H. Merriam in 1891.

Mining booms began at Panamint City, Darwin, Lookout, and Chloride Cliff in 1873. Both booms were short lived, but they attracted large numbers of prospectors into the Death Valley region. After 1900, more miners and prospectors seeking mineral riches spread throughout the area from Nevada mining camps. Although many camps within what is now the national park proved to be only prospects and quickly folded, two gold mines — the Skidoo and the Keane Wonder— were significant producers.

Borate minerals concentrated on the floor of Death Valley and in surrounding areas were a source of substantial mineral wealth. The first borax mine in the valley was the Eagle Borax Works that operated from 1882 to 1884, while the later Harmony Borax Works (1883–88) popularized Death Valley with the famous 165-mile 20-mule team wagon run to the railhead at Mojave. Other borax deposits were discovered in Saline Valley and at Ryan, and in 1911 the Saline Valley salt deposit was developed. During subsequent years, its salt production would be transported over the Inyos via an engineering marvel known as the salt tram.

In 1933, Death Valley National Monument was established, and the valley soon became the focus of increasing tourism and recreational development. Significant administrative and visitor use facilities were constructed by the Civilian Conservation Corps during the Depression. Scotty's Castle and the widely-reported antics of Walter Scott ("Death Valley Scotty") contributed to the growing tourist industry in the region.

Death Valley possesses significant historic sites that represent a continuum from the mining activities of the 1860s to the present-day. Six historic period properties in the Park are listed on the National Register of Historic Places:

- Skidoo
- Harmony Borax Works
- Eagle Borax Works
- Saline Valley Salt Tram Historic Structure
- Leadfield
- Death Valley Scotty Historic District

Five historic properties in the Park have been determined eligible for listing on the National Register of Historic Places:

- Residential, Administrative, Maintenance, and Visitor Use Facilities in Death Valley National Park Built by the Civilian Conservation Corps: Camp Wildrose Historic District, Cow Creek Historic District, Emigrant Junction Comfort Station, Park Village Comfort Station, Texas Spring Campground Comfort Stations and stone picnic tables
- Original Bullfrog-Bullfrog West Extension Mine
- Homestake-King and Gold Bar Mines and Mills
- Las Vegas and Tonopah Railroad Grade
- Lee Historic District

Seventeen draft national register nomination forms have been prepared for the following properties in the national park in connection with the aforementioned *Historic Resource Study: A History of Mining*. The forms have been submitted to the Pacific-Great Basin Support Office in San Francisco, but no formal determinations of eligibility have been processed for them:

- Big Talc Mine
- Garibaldi Mine
- Gold Hill Mill
- Harrisburg Historic District
- Hungry Bill's Ranch Historic District
- Journigan's Mill
- Lemoigne Mine and Cabin
- Lost Burro Mine and Mill
- Panamint Treasure Mine
- Queen of Sheba Mine
- Wildrose Canyon Charcoal Kilns
- Chloride Cliff Historic District
- Echo Canyon Historic District
- Greenwater Historic District
- Keane Wonder Historic District
- Corduroy Road
- Furnace Creek Wash Historic District

Three draft national register nomination forms have been prepared for the following historic properties in the lands that were added to the national monument in 1994:

- Barker Ranch
- Panamint City
- Gem Mine and Mill

Four draft national register nomination forms were prepared by the Timbisha Shoshone Tribe through a NPS Historic Preservation Grant:

- Mushroom Rock
- Ubehebe Crater
- Navel Spring
- "Tumpisa" District (Furnace Creek area)

Draft national register nomination forms for archeological districts in the national park that have been prepared include: Butte Valley, Mesquite Spring, Racetrack-Goldbelt, Ubehebe Crater, Upper Emigrant, Upper Panamint, Death Valley Salt Pan, Furnace Creek, Mesquite Flat, Grapevine Canyon, Ibex Spring, Keane Wonder Mine, Saratoga Springs, and Lower Vine Ranch.

The National Park Service is planning to prepare national register nomination forms for archeological districts such as Furnace Creek Wash, Saline Valley, and Eureka Valley.

C. PARK HISTORY AND OTHER FACTORS RELEVANT TO PROTECTION PARK RESOURCES

Death Valley National Monument was established by presidential proclamation under the Antiquities Act of 1906, on February 11, 1933 (Proclamation No. 2028). The original Monument contained approximately 1,601,800 acres. Supplementary proclamations in March 1937 (No. 2228) and January 1952 (No. 2961) increased the Monument's acreage to 2,067,793 acres. The Monument was subsequently changed to Death Valley National Park by Congressional action on October 31, 1994, with the passage of the California Desert Protection Act (16 U.S.C. 410aaa-83). Approximately 1.3 million acres of new lands were added, bringing the total acreage of the new Park to 3,396,172 acres. Nearly 95% of the Park was designated as wilderness by that same act. Specific limitations and directions were provided by Congress in the CDPA relevant to land acquisitions in the Death Valley National Park. The following list summarizes to specific direction and cites the appropriate section of the act:

- Sec. 306b provides that persons holding grazing permits that are willing to convey base property to the United States be given priority over the acquisition of other lands within the Park.

Three provisions in the CDPA that affect land acquisition are applicable to both Death Valley and Mojave, as well as BLM wilderness areas:

- Sec. 707 directs the Secretary to enter into negotiations with the State Lands Commission to exchange Federal lands or interests for State School lands or interests that are within Parks and wilderness areas.
- Sec. 710 provides that "lands or interests in lands acquired under" the California Desert Protection Act "shall be appraised without regard to the presence of a species listed as threatened or endangered pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)."
- Sec. 901 imposes a ceiling of $300,000,000 for all land acquisition costs associated with the three National Park Service administered areas (including Death Valley, Mojave and Joshua Tree) and the Bureau of Land Management administered wilderness areas created by the California Desert Protection Act.

NPS *Management Policies* (1988) provide that the National Park Service will seek to eliminate valid mining claims and nonfederal mineral interests in wilderness areas through acquisition.

D. MANAGEMENT OBJECTIVES

Visitor Services

- Ensure that authorized commercial uses of Death Valley National Park are compatible with the preservation and safe enjoyment of the resources.

- Provide for overnight visitor accommodations as well as campgrounds, food service, potable water, and staff housing facilities within limits of preservation objectives and environmental, hydrological, physical, and social factors; encourage the development of overnight facilities and related services by private inholders and private enterprises outside the Park.

- Provide visitors with the opportunity to discover, explore, and understand the natural and cultural resources of the Park through interpretive programs, facilities, and activities that emphasize the complex and fragile desert ecosystem, the interaction between the desert resources/environment and man, and the vulnerability of the desert environment to human impact.

- Preserve, operate, and manage Scotty's Castle, its grounds, and environs to recreate the atmosphere of the period of its construction and occupation by Walter Scott and Mr. and Mrs. Albert Johnson.

Visitor Use

- Encourage visitors to explore the backcountry, to experience the wilderness of the high Panamint, Grapevine, Cottonwood, and Funeral Ranges, and to camp and sightsee in a setting of climatic relief from the valley floor.

- Provide a wilderness experience for those who desire it, in balance with the limitations of the fragile resources.

Safety

- Provide for visitor and employee safety through an ongoing safety program that recognizes the hazards of heat, humidity, flash floods, and the physical hazards of mine areas.

Management

- Encourage the perpetuation of Death Valley's native Indian cultural heritage and work toward adequate standards of living in the Timbisha Shoshone village. Relate interpretation and activities to the purposes of the Park.

- Encourage the use of Death Valley's resources as a center of scientific research interest, consistent with the perpetuation of native natural processes.

  Cooperate, as much as possible, with other federal agencies (Bureau of Land Management, Department of Defense, etc.), state and local agencies, mining companies, and private inholders on management programs, studies, planning, and extraction of minerals as authorized and by approved methods.

Resource Management

- Maintain, preserve, and perpetuate the aesthetic setting and the natural and cultural resources of Death Valley National Park.

- Restore conditions conducive to the perpetuation of the natural processes as they functioned before disruption by technological people or competition from nonnative plants and animals.

- Restore native plants and animals to their original range.

- Restore a natural appearance to the land surfaces disturbed by people, recognizing that significant cultural values must be preserved.

- Ensure the perpetuation of rare and endangered plants and animals and those species endemic (specific) to Death Valley National Park.

- Perpetuate the Devils Hole pupfish in the detached Devils Hole section of the Park.

- Minimize the adverse effects of mining and prospecting that conflict with the preservation and public appreciation of natural and cultural values.

III. NONFEDERAL LANDOWNERSHIP AND USE

A. DESCRIPTION

There are approximately 52,000 acres of nonfederal lands within the boundaries of Death Valley National Park. Of the nonfederal land, 41,340 acres are owned by the state of California and 10,519 acres are owned by other private parties. In addition, about 2,871 acres of the Park are encumbered by private mineral interests associated with unpatented mining claims.

Detailed tables listing tracts are found in the following tables at the end of this section:

1. Patented mining claim groups
2. Unpatented mining claims
3. Appropriated water rights

1. State Lands (41,340 acres)

The Statehood Act of 1850 granted to the state of California all unappropriated and surveyed sections 16 and 36, including those in the area later included in the Park. Most of the state land included within the old monument boundary has been acquired by the National Park Service through exchange. However, the expansion of the Park in 1994 brought several new state school sections into the Park. The California Desert Protection Act requires the National Park Service to give priority to exchanging these parcels out of the parks, and an active program is currently underway to achieve that objective. In 1998, 12,872 acres of state land were acquired by exchanges. Eighty-two parcels of various sizes remained as of June 1998, totaling 41,340 acres.

2. Private Lands (10,519 acres)

About 60% of the private lands within Death Valley are patented mining claims. There are patented mining claims totaling 6,311 acres. Other private lands exist in seven areas of the Park and total 4,208 acres.

The private lands may be grouped into twelve areas as summarized below.

	Tracts	Acres
1. Lower Furnace Creek	13	2,935
2. Upper Furnace Creek	24	1,067
3. Bullfrog Hills, Big Bell, Inyo Gold	8	442
4. Warm Spring Canyon, Skidoo	7	270
5. Amfac Properties (Furnace Creek)	2	342
6. Amargosa Valley	2	1,920
7. Saline Valley	3	1,263
8. Panamint Springs	2	260
9. Jackass Flat (Saline Range)	1	155
10. SW Funeral Mountains	1	228
11. Goler Canyon	1	40
12. Other mining claim groups	Unknown	1700
TOTAL	**64**	**10622**

The priority areas are discussed in detail below:

1. Lower Furnace Creek. Furnace Creek Wash is a relatively flat, gently sloping drainage containing an ephemeral braided stream channel, with elevations ranging from 2,800 feet at its head to near sea level at the mouth at the head of the alluvial fan.

   The entire Furnace Creek Wash area is fully visible to visitors entering Death Valley from the east on Highway 190. This is the most heavily used access into the Park. Except for partially reclaimed dumps of the Boraxo Mine (open pit) and the headframe area of the Billie underground mine (just outside Park boundaries) the view of the Furnace Creek area from Highway 190 is relatively free from disturbance by people's activities. Undisturbed vistas of the broad wash and colorful surrounding mountains offer visitors an imposing visual introduction to Death Valley.

   The eroded badlands, adjacent to Highway 190, present a colorful and bizarre vista for visitors entering the Park along this corridor. Zabriskie Point, bordered on the south, north and west by patented U.S. Borax claims is one of the most visited and scenic points in the Park.

   The Twenty Mule Team road through the badlands is the major visitor interest point in the lower Furnace Creek area aside from Zabriskie Point. The road, for the most part, is located on patented claims owned by U.S. Borax. Visitors traveling this three-mile road are afforded an intimate glimpse of the badlands, essentially undisturbed except for the small early mine development.

   The Monte Blanco borate mine, which appears to have experienced some late development in the early 1950s, and the assay office site in Twenty Mule Team Canyon have been determined to be eligible for inclusion on the National Register of Historic Places. The area contains the original colemanite discovery in Death.

   Highway 190 has significance in Furnace Creek Wash as the route followed into Death Valley by early gold seekers searching for a short cut to California gold fields.

2. Upper Furnace Creek Wash. Upper Furnace Creek Wash contains much of the United States known colemanite resources. The Boraxo was the first open pit mine of any significance in the Park. The Boraxo pit and dumps cover nearly 260 acres. The pit is not visible from normal visitor travel routes and recontouring of the waster rock dumps serves to mitigate most of the adverse impact on the visibility.

   The Dantes View road, through the upper Furnace Creek area, provides access to major scenic and visitor interest points in the Black Mountains. The overlook at Dantes View provides more than 90,000 visitors annually with an easily accessible panorama of Death Valley, unexcelled elsewhere in the Park. This section of the Dantes View road is similar and in some places identical to that part of the route from the upper Furnace Creek area to Greenwater and Shoshone, California, shown on an early edition of the Furnace Creek Quadrangle, surveyed 1905 to 1906. The public road route probably predates any of the mining claims currently incorporating any portion of the Dantes View road. Other than the Billie underground mine surface plant and development waste dump and the surface development at the historic Ryan mines, which are outside the Park, the most visible evidence of mining along the Dantes View road is the existing Sigma Mine waste dump and stockpile one-half mile from Dantes View road.

Desert bighorn sheep inhabit range to the southwest, west and northeast. The upper Furnace Creek area is known to be a route of travel between range and water sources. Bighorn sheep have been observed in the Furnace Creek area moving northeast to southwest and southwest to northeast.

Features of historical significance in the upper Furnace Creek area are limited to the Ryan Mines and railroad grade (outside the Park) which served the mines until the 1920s, and a few trash heaps and a gypsum wall of unknown origin adjacent to a gypsum outcrop on the Park's east boundary, 2.5 miles south of Highway 190.

3. Bullfrog Hills, Big Bell, Inyo Gold. The Big Bell Mine was discovered in 1904 and worked mostly in the 1930s. The property contains an extensive assortment of mining equipment as well as standing structures that have known great potential significance in illuminating the operation of a small, remote mine.

   The Inyo Gold Mines include:

   - Schwab, a mining campsite in the Funeral Mountains, includes the mines and associated artifacts. It was nominated to the national register in 1980.

   - Echo Canyon Townsite, a short-lived mining camp dating from about 1907, is often confused with Schwab. The site does not possess historical significance.

   Furnace Mine is a property that is patented and possesses some interesting remains, including a dragway with winch and a crude smelter.

   Inyo Mine a complex dating primarily from the 1930s, but it originated during the Bullfrog-Rhyolite boom early in the century.

   The Bullfrog Hills area lies 25 miles north of headquarters at Furnace Creek. This portion of Death Valley lies in the state of Nevada is referred to as the "Nevada Triangle." The "Nevada Triangle" contains low hills and basins and does not provide unique landforms, scenery or natural phenomena to the extent provided by other areas in Death Valley. However, the opportunity to observe a large, ecologically intact expanse of the Mojave Desert is unexcelled elsewhere in the region.

   The Original Bullfrog Mine is a patented property near Rhyolite that is significant because its discovery touched off a major mining boom and early 20th century development of the Bullfrog Mining District. It is probably the single most significant mining site in Death Valley from the standpoint of historical occurrence, although the structural remains above ground are not impressive. It was listed on the National Register of Historic Places in 1980. The Homestake-King Mine was a major mining complex that included a massive mill in the Bullfrog Mining District. Only ruins and foundations of the mill stepped down a Mountainside remain, along with the usual shafts and remains of smaller structures. The mere size of the plant suggested by its remains indicates that it was probably historically significant. It was listed on the National Register of Historic Places in 1981.

   The proximity of the Gold Bar and Homestake-King properties is fortuitous since they represent opposite extremes in turn of the century mining efforts. The Homestake was a relatively honest operation while the Gold Bar was riddled by fraud. The properties are of

further significance because they are the sites of the only mills constructed during the Bullfrog boom within the present day Park boundaries.

4. Warm Spring Canyon, Skidoo. An ore processing mill in the canyon possesses historical significance. Warm Spring, one of the two best springs in the Park, south of Telescope Peak, is on Continental's GOLD HILL NO. 2 MILL SITE claim. Flow is approximately 50 gallons per minute of 94 degree Fahrenheit water. The presence of a perennial source of surface water with nearly constant discharge has created a very special oasis in the desert. Nearly two acres at Warm Spring is covered by a growth of wild grape, *Vitis californicus*, and giant reed, *Phragmites communis*. It is more than two miles to each of the next three closest springs, to the south, west and north.

   Skidoo was founded in 1906 in the Panamint Mountains. This site consisting of the remains of a town, graves, mines and prospects, a stamp mill, and pipeline — probably representing the most significant mining community within the Park. This site was listed on the national register in 1974.

5. Amfac Properties. The two Amfac Properties, Furnace Creek Inn and Ranch, comprise an extensive constructed oasis. Together they offer a full range of resort facilities, including golf, tennis, swimming, horseback rides, and entertainment. There are several restaurants, laundry and shower facilities, a general store, post office, and gas station. The privately owned Borax Museum within Furnace Creek Ranch displays artifacts related to mining. An airstrip (lighted for night use) is adjacent to the ranch. Many visitors assume the ranch is an NPS concession and bring their problems to the Park staff. Although the Park Service has no authority over the operations, the owner and the Park Service cooperate in resolving problems of mutual interest.

6. Amargosa Valley. Two private parcels totaling 1,920 acres occur in the valley east of the Funeral Mountains and about 6 miles west of Highway 127, about a mile from the state line. The parcels occur on a gently sloping creosote bush slope that is within designated wilderness. The Amargosa River channel traverses the center of the parcel and numerous wells are shown on the USGS quadrangle. Some mining prospects are also shown. Current threats are unknown.

7. Saline Valley. Three parcels totaling approximately 1,263 acres occur along the Saline Valley road at the mouth of Hunter Canyon. The parcels occur on the valley floor north of the Salt Lake and include several hundred acres of mesquite groves and salt pan vegetation. One 40-acre parcel includes mostly area shown as water on the USGS quadrangle. The area is extremely fragile and highly visible to visitor traffic in Saline Valley. The parcels are entirely excluded from wilderness. Current threats are unknown.

8. Panamint Springs. There are two private parcels at Panamint Springs, along State Highway 190. One 40-acre parcel is partially developed with a restaurant, small hotel, airstrip, gas station, and small camping area. In this area, designated wilderness is 300 feet north side of the highway. A small portion of this parcel would be within the boundaries of wilderness.

   The other 220-acre parcel is just to the southwest of the above parcel and occurs on the rugged slopes of the Argus Range within designated wilderness. Current threats are unknown.

9. Jackass Flat (Saline Range). This parcel is approximately 155 acres and lies just east of the southern end of Jackass Flat in the Saline Range. The parcel is not within designated wilderness. There is at least one structure on the property. Current threats are unknown.

10. SW Funeral Mountains. This parcel is approximately 228 acres and lies in the southern end of the Funeral Mountains, just southeast of the Red Amphitheater in designated wilderness. It appears to be on a rugged mountain slope with no existing access. Current threats are unknown.

11. Goler Canyon (Myers Ranch). This 40-acre parcel lies in the very southern end of the Panamint Range, at the head of Goler Canyon, in a very isolated portion of the Park. The property contains several buildings and springs labeled as Myers Ranch on the USGS quadrangle, near Sourdough Spring. The parcel is within designated wilderness. Current threats are unknown.

12. Other Patented Mining Claim Groups. The Ibex Hills section of Death Valley is perhaps the most desolate region within the Park. Dominated by the dry sink of the Amargosa River, the landscape consists mostly of sand, salt, and the low Ibex Hills. The region has always been isolated from any centers of population, however small, and the present road network completely bypasses it.

    Current aesthetic appeal of the area includes marsh and spring habitat and associated wildlife, sand dunes, salt flats, rugged mountains with relatively undisturbed canyons to explore, valley vistas, and solitude.

    Visitation to the area is low and is generally focused in two areas: the Ibex Dunes and Saratoga Springs. The isolation and quiet solitude of the area provides a major attraction. Some are attracted by the unique physical and biological aspects of the spring and surrounding hills, including the pupfish and large variety of bird life that abounds in the area.

    The Ibex Hills have received some impact on their pristine character by the presence of the Superior Mine and other smaller talc operations. On the whole the past activity presents a visual intrusion only to the visitor who ventures into the hill's interior.

    Currently no mining activity takes place within several miles of the Ibex Hills and small amounts of traffic travel the road from Ashford Mill to the spring. As a result, this portion of the Park is nearly free of noise from human activity, with the exception of military overflights However, a proposal for an underground talc mine on unpatented claims in wilderness is currently under review by the Park.

    One 34-acre parcel and one 5-acre parcel are the only patented claims in the Ibex Hills.

    The Saddle Rock Group is located in the Skidoo Mining District on the east slopes of Emigrant Canyon. The five lode claims, at an elevation of about 4,800 to 5,400 feet, were recorded on August 11, 1913. Development consisted of three tunnels and five shallow shafts. There is no record of production for the site, and it would appear that all the shafts, adits, and minor cuts in the vicinity were purely exploratory.

    Gold Hill is one of the earliest mining areas within the old monument, its discovery being the natural result of exploration by miners out of the South Park District around Panamint City who were moving into the Butte Valley and Panamint Range area. Gold Hill's ore was evidently first processed at Arrastre Spring, and then later at the mill at Warm Spring. The Panamint Treasure Mine is also located near Gold Hill, a high summit north of Warm Spring Canyon and west of Galena Canyon. Gold Hill is located in the Panamint Mining District, which turned out mostly gold, lead, and silver. A mining camp was started here in 1889 and the area seemed rich enough in gold ores to warrant construction of reduction works of some sort. The mine

workings consist of adits and the ruins of some sort of stone structure. There are three 20-acre patented claims just south of Gold Hill.

The Gold King Mine is located one mile east of Journigan's Mill in Emigrant Canyon. The Extension lode joins the east end of the Gold King. During the historical survey in April 1978 a few shafts, dugouts or storage pits, and level building sites were found. The wash is gradually filling the area with gravel and silt. Evidently dating from the 1930s, the area does not have much historical interest.

In upper Greenwater Valley near the old Greenwater townsite is a large 410-acre block of patented mining claims that was brought into the Park with the 1994 expansion. This site appears to have numerous mining prospects associated with the short-lived copper mining in this area. Although there is no current mining on the property, current threats are unknown.

At the mouth of Copper Canyon in the Black Mountains is a 41-acre patented claim. Current threats are unknown.

In a small drainage on the southern side of Wildrose Canyon is a 42-acre patented parcel commonly referred to as the Monopoly group. This claim has been inactive for many years and current threats are unknown.

Surprise Canyon (Panamint City). In the upper reaches of Surprise Canyon, in the vicinity of Panamint townsite, and in adjoining Woodpecker Canyon, are numerous patented mining claims totaling about 262 acres. This area was added to the Park in 1994 and includes extensive mine workings, structures, prospects, roads, and other features associated with the mining heyday. Current threats are unknown.

Pleasant Canyon (Panamint Mountains). In the upper reaches of Pleasant Canyon there is a 70-acre patented parcel that appears to be in the Park. However, the Park boundary also excludes a road corridor leading to the Porter Mine and a land parcel that appears to include the mine. It is difficult to determine with current information if they are the same properties. The 70-acre parcel appears to coincide with the Cooper Mine, about a half mile south of the Porter Mine. This area is within the Park and is excluded from wilderness.

Crystal Hills (southwest Owlshead Mountains). In the extreme southwestern corner of the Park is a portion of the boundary that protrudes into the China Lake Naval Weapons Center. In this area is a 728-acre patented mining claim parcel that overlies the majority of the Crystal Hills. There is no current activity and current threats are unknown.

3. Mineral Rights (6,765 acres est.)

There are approximately 125 unpatented mining claims within the Park totaling an estimated 2,262 acres and 7 parcels of land with reserved mineral rights totaling approximately 2,262 acres. Many of these claims have had historic mining activity. The number of unpatented mining claims fluctuates constantly as owners stop filing required annual notices or stop paying on annual maintenance fees which are due by August 31st each year to retain an ownership interest in their claims. See "Appendix B: Unpatented Mining Claim Groups" in this "Land Protection Plan" for a listing as of 2000.

4. Water Rights

Initial research on outstanding water rights in the Park at the State Water Resources Control Board in Sacramento revealed that there are numerous appropriated water rights claims on Park water sources

(springs, seeps, streams, wells). Many of these were obtained by ranchers who lease grazing allotments. There are also an unknown number of water rights that were established prior to the state recordation requirement. It will be necessary for the Park to research county records to identify these rights.

5. Rights-of-way and Easements

There are probably numerous easements and rights-of-way that exist in the Park, many of which pose little or no threat to the protection of resources. Additional research over the next several years would have to be conducted in order to adequately document all the outstanding rights. Agreements would be sought where necessary to protect the Park resources. Only in limited instances would acquisition of the interest be appropriate or warranted.

The counties of Inyo and San Bernardino contend that certain roads in the Park are valid under RS-2477. The validity of this claim has not been determined. Any valid right-of-way would be included in future amendments to this land protection plan as appropriate protection strategies are identified.

6. Grazing Permits

The California Desert Protection Act provides for grazing to continue under NPS management at no more than the levels existing on October 31, 1994. Portions of four grazing allotments that were issued by the Bureau of Land Management prior to the act occur in the new additions to the Park: Eureka Valley, Lacey-Cactus-McCloud, Hunter Mountain, and Last Chance. The allotments are partially in Death Valley and partially on BLM land. Total animal unit months (AUMs) on NPS land at the establishment of the Park were 2,734. The portions of the Eureka Valley and Lacey-Cactus-McCloud allotments inside Death Valley have no authorized AUMs and no grazing is permitted on them. Last Chance allotment has not been issued a permit since 1996 due to the lack of forage. The Hunter Mountain allotment occurs on both NPS and BLM lands. The NPS portion covers about 86,400 acres and contains 1,105 AUMs.

Grazing Allotment	Total Acres	% on NPS	Acres on NPS	Total AUMs	NPS AUMs
Hunter Mountain	127,200	68%	86,400	1,105	1,105
Last Chance	90,800	61%	55,605	3,267	1,628
Eureka Valley	16,700	3%	468	45	0
Lacey-Cactus-McCloud	420,000	<1%	760	4,873	0
TOTALS	**654,700**	**22%**	**143,233**	**9,290**	**2,733**

Eureka Valley is an ephemeral allotment only. Hunter Mountain has a defined season of use from November 20 to June 30.

B. COMPATIBLE AND INCOMPATIBLE USES

The preservation of unimpaired natural systems, resources and cultural resources is the essential management objective of Park units. Commercial uses generally are incompatible with the accomplishment of that objective. Mining may potentially affect pristine desert scenery and disrupt the natural system through additional vehicular access and noise, lights, odors, and possible reduction of water quantity, quality, and air quality.

Disclaimer

The land protection planning process requires that the National Park Service determine activities on nonfederal land that would be incompatible with Park management objectives, IF such uses were

proposed or carried out. The listing of incompatible activities in this *Land Protection Plan* does not constitute a prohibition of such uses. The National Park Service has limited existing regulatory authority to preclude such incompatible activities. Rather, the listing of incompatible activities is intended to provide a reasonable basis for determining where, and under what circumstances, the National Park Service would seek funding to acquire nonfederal lands.

Compatible Uses

In the short term, the National Park Service recognizes that some uses on private or state lands would not preclude ultimate accomplishment of Park management objectives. However, over the long-term, the continued use of private land for the following purposes would likely preclude accomplishment of scenic and ecological objectives of the Park units and should be gradually eliminated. However, given the scale of these uses in relation to Park size, many impacts may be limited and temporary, and the lands and natural systems susceptible to restoration when the uses are terminated.

The following uses are considered to be compatible on a short-term basis:

1. Routine maintenance and repair of private dwellings and existing associated structures.
2. Minor modifications to existing structures.
3. Replacement of roofing and siding with materials that are compatible with scenic values.
4. Reconstruction in kind of damaged or destroyed structures.
5. Replacement of a structure that is purposefully removed by a structure of equal size and design that serves the same purpose and occupies essentially the same site as the removed structure.
6. Camping or temporary parking of motorhomes on private lands.
7. Erection of no trespassing signs, fences, and gates to prevent trespass.
8. Use of, or construction or installation of utilities, including roads, on federal lands to gain access to nonfederal property that provides the owner with reasonable use and enjoyment of their land, in accordance with Section 708 of the California Desert Protection Act, with minimum disruption to federal lands (access across NPS lands requires a permit).
9. Mineral development in connection with valid existing rights if such mining is under an NPS-approved plan of operations that meets the standards of approval of 36 CFR Part 9.
10. Grazing activities permitted by law that do not significantly impact Park resources.

Approval of the National Park Service is required for numbers 9 and 10 permissible short-term uses of private lands.

Incompatible uses

The following uses of private property are incompatible with the management objectives of Death Valley National Park in both the short and long-term:

1. Activities that impair the integrity of a site, building or object that is listed on the National Register of Historic Places.

2. Activities that do not comply with all requirements and standards specified under applicable NPS regulations.

3. Duplicative commercial activities, other than National Park Service regulated mining, such as businesses, stores, food and lodging establishments.

4. Establishment of sites for the disposal of solid waste, whether hazardous or non-hazardous.

5. Activities such as removal of natural vegetation, earth moving or the like that significantly impact natural or cultural resources, wilderness values, or the visual quality of the Park.

6. Activities that create a hazard or that endanger the safety of Park staff or visitors.

7. Splits in ownership or sell-off of portions of the land wherein development or initiation of new uses affecting Park resources is contemplated.

C. ACQUISITION HISTORY

When Death Valley National Monument was established on February 11, 1933, thousands of acres of land were in nonfederal ownership. Acquisition of these lands through purchase, exchange, etc. was initiated. With passage of the California Desert Protection Act in October 1994, thousands of additional acres of nonfederal lands and interests were added to the Park. The number of acres acquired since 1933 is as follows:

Acquisition Method	Acquired Acres
Purchase	10,922.13
Complaint in Condemnation	971.60
Declaration of Taking	0.00
Donation	2,010.00
Exchange	33,325.31
Total Acquisition	**47,229.04**
Total Federal Acres	3,344,313.00
Nonfederal Acres Remaining	51,859.00
Total Acres in Park	**3,396,172.00**

Land acquisition expenditures at Death Valley National Park so far have totaled $3,025,396.

D. ACQUISITION CEILING

Sec. 901 of the California Desert Protection Act imposes a ceiling of $300,000,000 for all land acquisition costs associated with the three National Park Service administered areas (including Death Valley, Mojave and Joshua Tree) and the Bureau of Land Management administered wilderness areas created by the California Desert Protection Act.

IV. AVAILABLE LAND PROTECTION AND ACQUISITION OPPORTUNITIES

A. LAND PROTECTION OPTIONS

Protection Alternatives

A number of land protection alternatives have been considered in arriving at the recommended methods. Factors influencing the methods considered and selection of the recommended plan include cost-effectiveness, long term goals, degree of compatibility of private ownership, the type of jurisdiction, and consideration for long established owners. The preferred alternative for land protection must assure preservation and restoration of the natural environment, protection of historic and prehistoric values, and enhance public enjoyment of the parks.

Potential protection alternatives are discussed below.

1. Agreements

Agreements are legal instruments defining administrative arrangements between two or more parties. The instrument can provide for the exchange of services or benefits between the parties. Terms of agreements relevant to land protection might include:

a. Compatible and incompatible land uses.

b. Management of natural and cultural resources.

c. Responsibility for maintenance.

d. Law enforcement responsibilities.

Agreements are most useful as interim land protection methods where there is a coincidence of interests between the parties. Because they can be terminated by either party, agreements are generally not acceptable as long term protection methods, particularly in the case of lands intended for preservation in their natural state. They can be very useful as short term protection instruments. They may have some application for both private and public lands.

2. Regulations

Local Land Use Regulations Use

Private lands in the Park fall under the jurisdiction of Inyo, Mono and San Bernardino counties in California, and Nye and Esmeralda counties in Nevada. The counties adopt and enforce land use regulations that control the type and density of land use and development on private property, and ensure adherence to basic public health and safety standards. Regulation is intended to provide generally for the control of economic uses of land and to mitigate to the extent possible the adverse effects of such uses. It is not an appropriate or useful long-term protection method for lands intended for preservation or restoration of natural conditions. However, land use regulation does have potential as an interim protection method for developed areas planned for restoration but where land acquisition is expected to require many years.

National Park Service Regulations (36 CFR Parts 1–5 and 7)

Death Valley National Park is an area of proprietary Federal jurisdiction. The level of jurisdiction that the United States holds on its lands is immaterial to the ability of the United States to manage and protect Federal lands. However, in areas of proprietary jurisdiction, the National Park Service decided in rulemaking that regulations in 36 CFR Parts 1 through 5 and 7 would apply only to Federal lands. An exception, adopted on July 5, 1996, permits the application of NPS rules in 36 CFR Parts 1–5 and 7 to nonfederal lands in a proprietary jurisdiction Park, IF such nonfederal lands are subject to a written agreement with the owner.

In addition, if the state of California ceded some, or all, of its jurisdiction over nonfederal lands in the Park to the United States, then ten of the NPS regulations at Parts 1–5 and 7 would apply to conduct on private lands. Even then, the applicable regulations deal with wildlife protection, fires, disorderly conduct, weapons and similar conduct. The National Park Service possesses no general regulations on "land use" or development that would apply to the nonfederal lands even if the Park were an area of concurrent or exclusive jurisdiction.

Death Valley also has special regulations at 36 CFR Part 7.26 (a) that prevent use and occupancy of mining claims in the old Monument located after June 13, 1933, for any purpose other than mineral exploration and development. Miners are also required to file copies of claim location notices with the Superintendent. These regulations also restrict the use of water without a permit issued by the NPS. Finally, these regulations designate two airstrips in the Park: 1) Death Valley airport at Furnace Creek, and 2) Stovepipe Wells airport.

National Park Service Regulations (36 CFR Parts 6 and 9)

National Park Service regulations at 36 CFR Part 6 (Solid Waste Sites) and at 36 CFR Part 9A (Mining Claims) apply to all lands in every Park without regard to the level of jurisdiction that the United States holds over an area. Parts 6 and 9 apply to the nonfederal land within Death Valley National Park. The application of 36 CFR Parts 6 and 9 would prohibit or otherwise restrict certain proposed land uses on nonfederal (and Federal) lands within the Park. Parts 6 and 9 of 36 CFR provide a certain level of resource protection, short of acquisition. Section 519 of the California Desert Protection Act (16 U.S.C. 410aaa-59) states that, until acquired by the United States, nonfederal lands within the boundaries of national park system units designated or enlarged by the act are not "subject to any of the rules or regulations applicable solely to the Federal lands within such boundaries." The rules at 36 CFR parts 6 and 9 apply to all lands within areas of the National Park System boundaries and are not applicable solely to federal lands within such areas. Thus, the application of Parts 6 and 9 to nonfederal lands within the boundaries of Death Valley National Park does not conflict with Section 519 of the California Desert Protection Act.

Regulations at Part 9, in particular, generally provide for the control of mining uses and to mitigate, as far as possible, the adverse effects of such activity on parks. Since the primary objective of the Park is to preserve and restore natural systems, the conduct of mining, no matter how closely controlled or regulated, may be inconsistent with management objectives in some places. Regulation of mining has great value as an interim protection method in the event that more effective methods are not implemented in the future.

Regulations at Part 6 prohibit the establishment of new sites for the disposal of solid waste on any lands with the Park, except for sites that generate waste solely from National Park Service activities.

U.S. Fish & Wildlife Service Regulations

U.S. Fish and Wildlife Service regulations at 50 CFR Part 17 implement the provisions of the Endangered Species Act (16 U.S.C. 1531, et seq.). These regulations prohibit persons from causing "harm" to federally-listed species. "Harm" is defined to include significant habitat modification or degradation that actually kills or injures wildlife. The Endangered Species Act prohibits persons from taking, including "harming" listed species. However, persons may obtain a permit from the Secretary of the Interior to "take" listed species, "If such taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity." (16 U.S.C. 1539(a)(1)(B)).

Persons proposing to develop nonfederal lands within the Park that may result in harm to listed species or habitat listed as critical, need to obtain a permit from the U.S. Fish and Wildlife Service prior to undertaking such development. This permitting process, while not aimed at controlling the use of land, could affect the methods and extent to which a person may develop lands in the Park where listed species or their habitat exist.

3. Less-than-Fee Acquisition

Less-than-fee acquisition involves acquiring only a portion of the rights of ownership of a tract of land. For example, scenic easements may be acquired to protect landscapes by limiting the owner's use of his land, or rights-of-way may be acquired to permit construction of roads, trails, pipelines, etc. The primary value of less-than-fee applications in Park situations is where some degree of private economic activity, e.g. farming, ranching, etc., is consistent with Park objectives.

In some National Park Service administered areas, where preservation of a pastoral historic scene is a primary management objective, scenic easements represent a highly desirable form of protection method, permitting continuation of agricultural land uses which contribute to the purposes of the unit. However, in the case of Death Valley, these objectives are not identified in the legislation, and therefore, less-than-fee instruments have limited utility.

4. Fee Acquisition

Fee acquisition is appropriate where the Park objectives are preservation and restoration of the natural systems, and there are no compatible private land uses.

B. ACQUISITION OPTIONS

1. Private Lands

The National Park Service can acquire interests in private land through several different methods.

a. Purchase with donated or appropriated funds.

b. Donation of lands or interests in land. Landowners with substantial taxable incomes are sometimes interested in this method as the Internal Revenue Code allows certain tax deductions for donation of land or interests in land for approved conservation purposes, including national parks. Landowners should consult their accountants and attorneys for specific tax advice on contemplated donations.

c. Bargain Sale. A bargain sale is a partial donation where the landowner agrees to sell for less than full value and the difference may be treated as a charitable contribution that may provide tax benefits.

d. Exchange. Land exchanges offer surplus federal lands elsewhere in California for property in the parks. The feasibility of this type of exchange is dependent on the availability of other federal lands and its prospective utility to the landowner.

e. Condemnation. The federal government has the authority to acquire private property through the federal court system when needed for public purposes or to prevent resource damage. This method is used where the owner and the National Park Service cannot reach agreement on price. It is also used in some cases to clear title or where landowners are unknown or cannot be located. Just compensation is determined through the judicial process.

f. Acquisition with Reservation of Use and Occupancy. Owners of developed properties can in some cases sell their property to the National Park Service and at the same time reserve the property's use for either a period of up to 25 years or for life. The purchase price is reduced to account for the reserved period of continued use.

2. Public Lands

Although Congressional guidelines on the acquisition of lands owned by state and local agencies generally favor donation, the policy toward state "school sections" permits acquisition by either exchange or purchase, with a preference for the use of exchange. State school lands in Death Valley National Park were specifically identified in the California Desert Protection Act as priority for exchange for excess federal property.

V. SUMMARY OF ACQUISITION PROCEDURES

The Division of Land Resources assigned to the Pacific Great Basin Support Office in San Francisco is responsible for carrying out the land acquisition program. It will be guided by the land protection strategy for each park unit as adopted through this planning effort and approved by the regional director.

The National Park Service is required by Secretarial Order 3127 to conduct a site assessment for hazardous materials on all properties being considered for acquisition. This process begins with a certified inspector completing a Level I checklist. If no evidence of previous hazardous materials use exists on the property or in the county, state, or federal records, the property is cleared for acquisition. If contamination is discovered or suspected, samples may be collected and analyzed at a licensed laboratory. Cleanup costs are considered the responsibility of the landowner.

The Park Service will obtain, at its expense, a preliminary policy of title insurance for each property which will identify the owner or owners of record and all encumbrances, such as mortgages, liens, judgments, right-of-way or other easements, affecting the property's title.

Each property will be appraised by an independent contract appraiser. The landowner and/or his/her representative will be offered an opportunity to accompany the appraiser on the inspection of the property in order to afford the owner an opportunity to point out significant features of the property.

To assure the quality of appraisals, a staff appraiser will review all reports for compliance with proper appraisal procedures and check such elements as the thoroughness of the research performed and whether or not the appraiser has afforded the landowner the opportunity to accompany the appraiser.

Appraisers will be required to furnish an objective estimate of the "Fair Market Value" of the lands being appraised. The Uniform Appraisal Standards for Federal Land Acquisitions defines "Fair Market Value" as "The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy."

As soon as possible after the appraisal of a property has been received, reviewed, and approved, the Park Service will submit to the owner, subject to the availability of funds, a written offer which will not be less than the Park Service's approved appraisal of the fair market value of the property. The owner will be provided with a copy of the Park Service's appraisal upon request. Assuming that a mutually acceptable purchase price is agreed upon, closing will normally be completed by a local title company acting as escrow and closing agent within 6 to 8 weeks of signature by the owner and the Park Service of an Offer to Sell.

It is the responsibility of the seller to convey clear title to the property being acquired. Under Public Law 91-646, the Park Service may reimburse sellers for expenses incurred such as:

1. Recording fees, transfer taxes, similar expenses incidental to conveying the real property.

2. Penalty cost for prepayment of any pre-existing recorded mortgage entered into in good faith encumbering the real property.

3. The pro rata portion of real property taxes the owner paid to cover the period after title was vested in the United States.

The Park Service may pay other similar expenses to the extent they are fair and reasonable, but the Service will not pay for costs necessary to clear defects in title to the property.

The Park Service will make every effort to seek negotiated settlement wherever possible; however, if this is not possible, eminent domain proceedings may be initiated.

Eminent domain proceedings are initiated by the filing of a complaint in condemnation in federal court. There are two general types of condemnation: complaint-only and complaint with a declaration of taking. The National Park Service generally uses the complaint-only type of condemnation to acquire land. In this type of action, title to the land does not pass to the government until the court or jury has determined the amount of just compensation and this amount has been paid to the owner. Eminent domain proceedings may be employed to resolve title problems or clear title, or when negotiations are unsuccessful and Fair Market Value is to be determined by the court.

In addition to the complaint in condemnation, declarations of taking are used where title to the land must be vested in the United States immediately in order to prevent resource damage or to clear title to land after a negotiated agreement has been reached with the owner.

A declaration of taking vests title to property in the United States immediately upon filing papers in the court and the deposit of an estimate of just compensation. A portion of this deposit may be withdrawn by the owner as approved by the court.

ACQUISITION OF LESS-THAN-FEE INTERESTS (EASEMENTS)

The procedure for acquiring less-than-fee interest is the same as that described above for acquisition of fee interest except for the fact that the owner does not relinquish title and possession of the property.

VI. RECOMMENDATIONS

This *Land Protection Plan* recommends that the National Park Service acquire most nonfederal lands within the Park in fee, except for State lands. State school sections are actively being exchanged for federal surplus property outside the Park in accordance with CDPA direction.

The National Park Service has considered alternative means of land protection and concluded that only in limited instances would they meet the long-term management objective of the Park, which is the preservation and restoration of lands in their natural condition, and the protection of cultural resources.

To the extent lands offered for sale may exceed the funds available to the National Park Service to acquire them, the National Park Service will give preference to acquisition according to the priority list that follows. There is no expectation that tracts can be acquired only in the order shown. These areas contain the greatest number of tracts, most of which are undeveloped and are in areas of high visitor use where development would be most apparent and disturbing to the scenic values.

National Park Service priority for acquisition are as follows:

It must be noted that none of these recommendations should be construed as proposing to prevent any acquisitions (by purchase, exchange or donation) now in progress nor are they offers to purchase land. Furthermore, the Park should retain the option of acquiring any parcel within the boundary regardless of priority should a proposed use or development be judged incompatible or detrimental.

The following factors were considered in determining long term priorities for each tract within the Park.

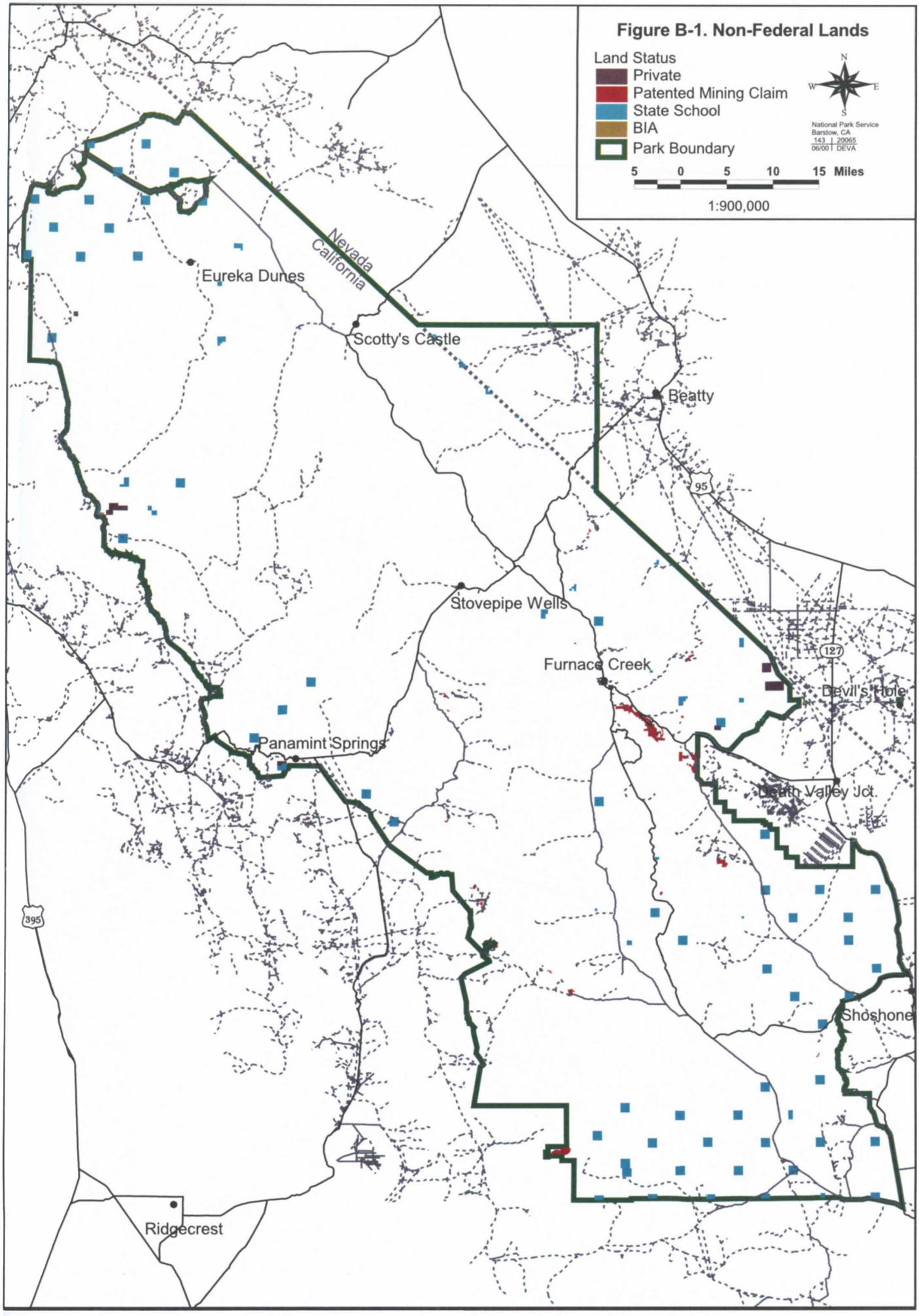
1. Properties in wilderness
2. Relative resource quality
3. Resource vulnerability
4. Visibility
5. Legislative restriction (patents prior to Act of June 13, 1933)
6. Regulatory controls (Mining in the Parks Act)
7. Validity of unpatented claims
8. Visitor safety and visitor use conflicts
9. Environmental threats
    a. dust
    b. noise

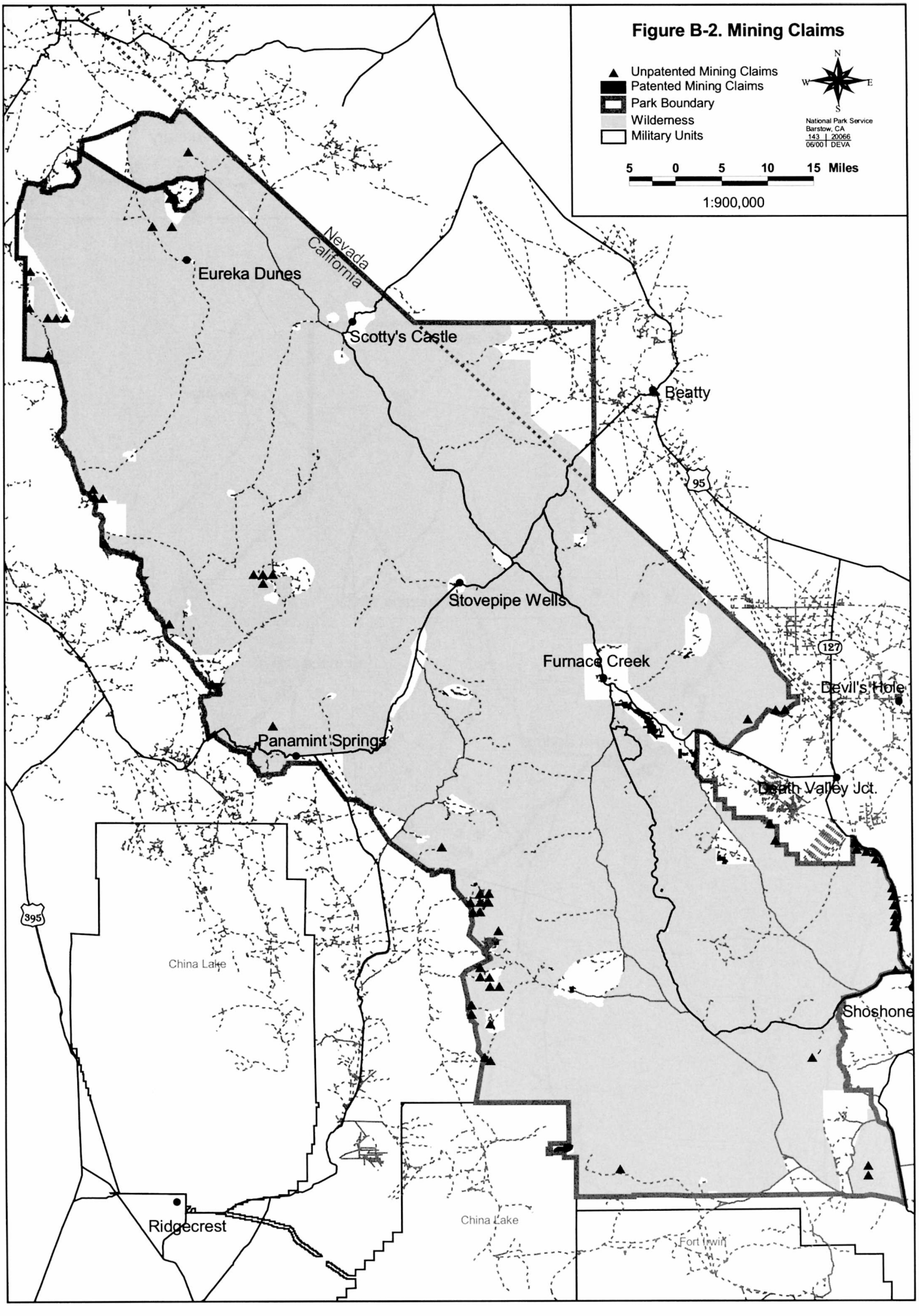
* If the holder of a grazing permit indicates a willingness to sell base property associated with a permit, the National Park Service would make the acquisition of such base property a priority compared with the acquisition of other lands (per CDPA section 306(b)).

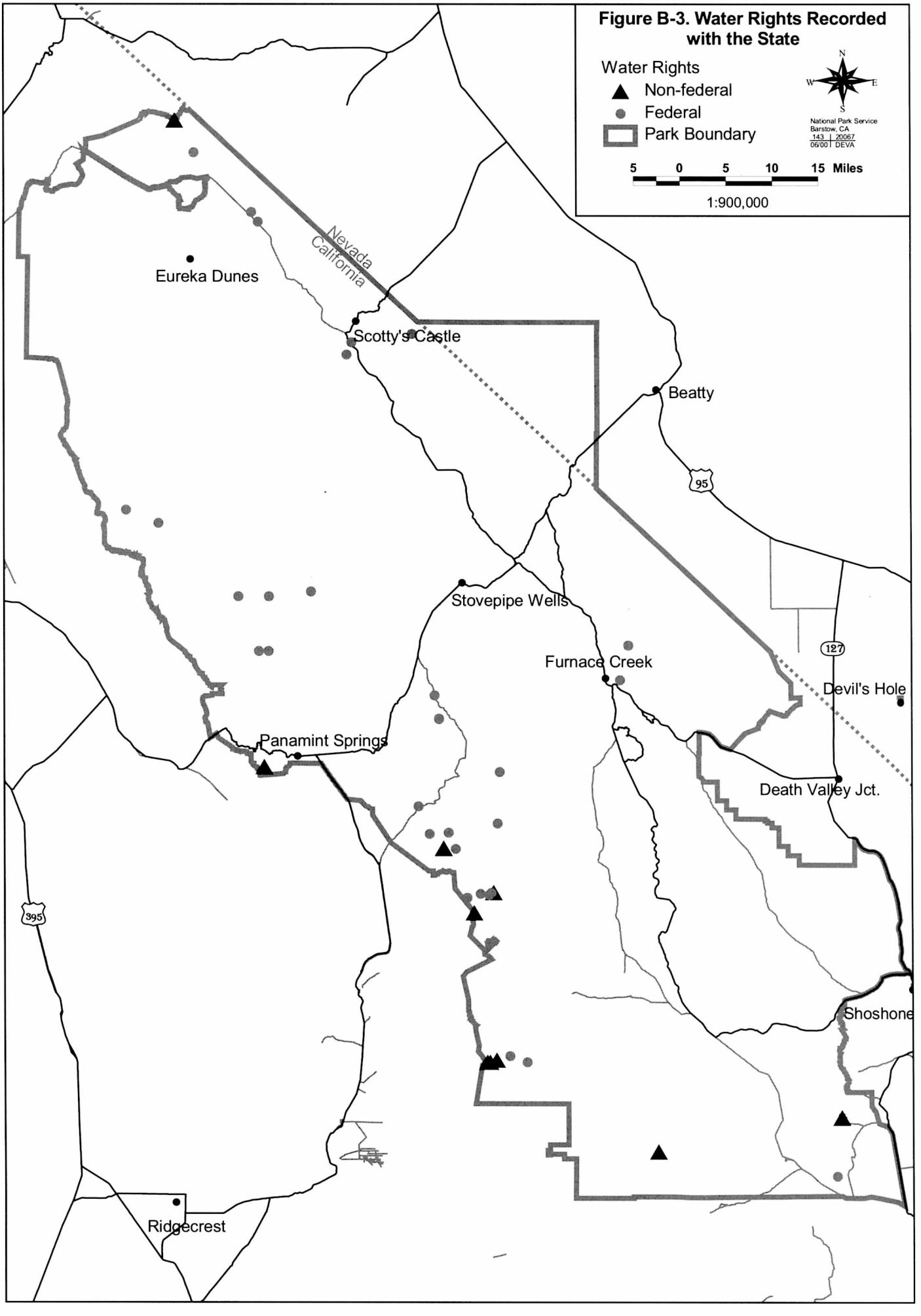
Applying these factors to the nonfederal parcels, the following priorities were developed for geographic areas within the Park.

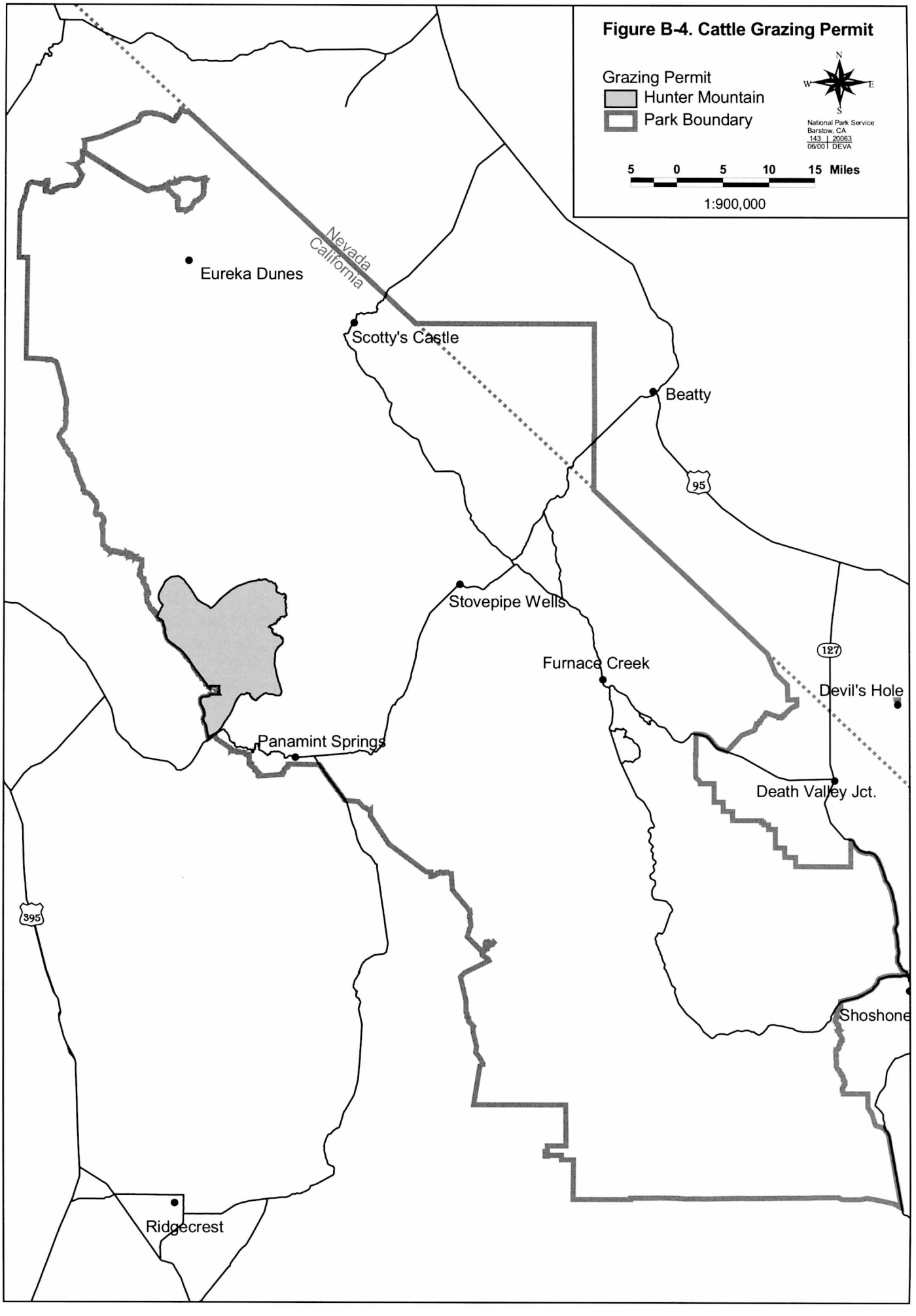
Priority	Rationale
1. Lower Furnace Creek	Outstanding scenic attraction (1,2) Vulnerable (3) Pre-monument patents (5) Along primary entrance route (8) Current recreation use (8)
2. Upper Furnace Creek	Very scenic area, heavily used by visitors (1,2,8,9)
3. Bullfrog Hills	Historic Areas (2,8)
Big Bell Group	Historic Areas (2,8)
Inyo Gold	Historic Areas (2,8)
4. Warm Spring Canyon, Skidoo	Visible to visitors, historic areas (3,8)
5. Remote small claim groups	wilderness (1) Relative resource quality (2) Susceptibility to disturbance (3,8)
6. Amargosa	Wilderness (1), visibility (4)
7. Saline Valley	Visibility (2), resource vulnerability (3)
8. Jackass Flat	Visibility (4), relative resource quality (2), resource vulnerability (3)
9. SW Funeral Mountains	Wilderness (1)
10. Goler Canyon (Meyer Ranch)	Wilderness (1), relative resource quality (2)
11. Panamint Springs	Wilderness (1), visibility (4)
12. Amfac Properties	Visibility (4), relative resource quality (2), resource vulnerability (3)

Adjustments can be made in these priorities at the time of updating of the *Land Protection Plan* and by the Superintendent at any time the changing situation dictates.


Figure B-1. Non-Federal Lands
Land Status
Private
Patented Mining Claim
State School
BIA
Park Boundary
N
W
E
S
National Park Service
Barstow, CA
143 | 20065
06/00 | DEVA
5 0 5 10 15 Miles
1:900,000
Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Stovepipe Wells
Furnace Creek
127
Devil's Hole
Panamint Springs
Death Valley Jct.
395
Shoshone
Ridgecrest


Figure B-2. Mining Claims
Unpatented Mining Claims
Patented Mining Claims
Park Boundary
Wilderness
Military Units
N
W
E
S
National Park Service
Barstow, CA
143 | 20066
06/00 | DEVA
5 0 5 10 15 Miles
1:900,000
Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Stovepipe Wells
Furnace Creek
127
Devil's Hole
Panamint Springs
Death Valley Jct.
395
China Lake
Shoshone
Ridgecrest
China Lake
Fort Irwin


Figure B-3. Water Rights Recorded with the State
Water Rights
Non-federal
Federal
Park Boundary
N
W
E
S
National Park Service
Barstow, CA
143 | 20067
06/00 | DEVA
5 0 5 10 15 Miles
1:900,000
Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Stovepipe Wells
Furnace Creek
127
Devil's Hole
Panamint Springs
Death Valley Jct.
395
Shoshone
Ridgecrest


Figure B-4. Cattle Grazing Permit
Grazing Permit
Hunter Mountain
Park Boundary
N
W
E
S
National Park Service
Barstow, CA
143 | 20063
06/00 | DEVA
5 0 5 10 15 Miles
1:900,000
Nevada
California
Eureka Dunes
Scotty's Castle
Beatty
95
Stovepipe Wells
Furnace Creek
127
Devil's Hole
Panamint Springs
Death Valley Jct.
395
Shoshone
Ridgecrest

APPENDIXES

A. Legal Description for Park Boundary
B. Unpatented Mining Claim Groups
C. Patented Mining Claim Groups
D. Appropriated Water Rights

B-1. LEGAL DESCRIPTION FOR PARK BOUNDARY

FINAL July 18, 1996

LEGAL DESCRIPTION
OF THE
BOUNDARIES OF DEATH VALLEY NATIONAL PARK

(This is a scanned reproduction of the original and may contain undetected errors; minor typograhical errors have been corrected in this version that do not appear in the official version submitted to Congress.)

NOTE: All following map references are to features depicted on 1:24,000 scale United States Department of Interior Geological Survey 7.5 Minute Series Topographic Maps, Provisional Editions 1982–1988, except Bonnie Claire SE, Nev. 1967 and Bonnie Claire SW, Nev. 1968.

PARCEL NO. 1 DEATH VALLEY NATIONAL PARK

BEGINNING at a point on the State boundary, line between California and Nevada near the closing corner between Sections 4 & 9, T.27N., R.4E., SBM, where it intersects 50 feet southwesterly of the centerline of the dismantled, historic Tonopah & Tidewater Railroad grade;

thence northwesterly along said State boundary line to its intersection with the range line between T.13S., R.45E. & R.46E., MDM;

thence northerly along said range line to the township line between T.12S. & T.13S., R.45E. & R.46E., MDM;

thence easterly along said township line to the range line between T.12S., R.45E. & R.46E., MDM;

thence northerly along said range line to its intersection with the township line between T.10S. & T.11S., R.45E. & R.46E., MDM;

thence westerly along said township line to its intersection with the aforesaid State boundary line;

thence northwesterly along said State boundary line to a Point 50 feet southerly of the centerline of an unnamed road located in the northwest ¼ of protracted Section 14, T.7S., R.39E., MDM;

thence westerly changing to northwesterly, parallel with and 50 feet southerly and southwesterly of said centerline to a point 50

feet southeasterly of the centerline the Willow Creek/Cucomungo Canyon Road, Inyo County Road S2047;

thence southwesterly, changing to westerly, parallel with and 50 feet southerly of said centerline to a point 50 feet easterly of the centerline of the North Eureka Valley/Fish Lake Valley Road, Inyo County Road 2048;

thence southwesterly, parallel with and 50 feet southeasterly of said centerline to a point 50 feet from said centerline nearest elevation point 4497T;

thence southwesterly, crossing over said road, to the corner common to Sections 29, 30, 31 & 32, T.7S., R.38E., MDM, also being elevation point 3696T;

thence bearing southwesterly approximately 1.8 miles to a point 50 feet easterly of the intersection of the centerlines of two unnamed roads also being near elevation point 3500T;

thence southerly, parallel with and 50 feet easterly of the centerline of one said unnamed road to a point 200 feet northerly of the centerline of the Big Pine/Death Valley Road, Inyo County Road S2017;

thence southeasterly changing to northeasterly, parallel with and 200 feet northerly of said centerline of the Big Pine/Death Valley Road, Inyo County Road S2017, to a point along that road in Hanging Rock Canyon, between the 4640 and 4680 contour interval, where a northeasterly trending unnamed drainage approximately mid-way between elevation points 5238T and 5100T intersects the road;

thence northeasterly along the center of said drainage to the 6320 contour interval;

thence northeasterly approximately 0.1 miles to the ridge line between elevation points 6573T and 6715T;

thence easterly to elevation point 6367T;

thence southeasterly to elevation point 5702T;

thence easterly to elevation point 5151T;

thence bearing northeasterly to a point 200 feet southerly of the intersection of the centerline of the Last Chance Canyon Road and the centerline of the Big Pine/Death Valley Road, Inyo County Road S2017, also known as Crankshaft Junction, near elevation point 3911T;

thence southwesterly, changing to westerly, changing to northwesterly, changing to westerly, parallel with and 200 feet southerly of the centerline of the Big Pine/Death Valley Road, Inyo County Road S2017, to a point 50 feet easterly of the centerline of an unnamed road where it turns south, near the section line between Sections 1 & 2, T.8S., R.37E., MDM;

thence southerly, changing to southwesterly, parallel with and 50 feet easterly of said centerline to a point 50 feet easterly of the centerline of the Harlis & Broady Mine Road, near the section line between protracted sections 11 & 14, T.8S., R.37E., MDM;

thence southeasterly, changing to southwesterly, changing to westerly, parallel with and 50 feet northeasterly and southeasterly and southerly of said centerline of the Harlis & Broady Mine Road to a point on the center of a southwesterly trending unnamed drainage near the 4960 foot contour interval, also near the center ¼ corner of protracted Section 28, T.8S., R.37E., MDM;

thence southwesterly along the center of said drainage to the 5520 foot contour interval;

thence continuing along the western fork of said drainage to where it intersects the 5920 foot contour interval;

thence on a northwesterly bearing to the elevation point 6743T;

thence bearing west approximately 0.3 miles to the center of a second unnamed drainage encountered along said bearing being near the section line between protracted Sections 29 & 30, T.8S., R.37E., MDM, also near the 6520 foot contour interval;

thence northerly, changing to northeasterly along the center of said drainage to a point 50 feet westerly of the centerline of an access road to an unnamed mineral prospect, also being near the SW $^{1}/_{16}$ corner of protracted Section 20, T.8S. R.37E., MDM;

thence northerly changing to westerly, parallel with and 50 feet westerly and southerly of said centerline of said unnamed road to a point 200 feet southeasterly of the centerline of the Big Pine/Death Valley Road, Inyo County Road S2017, also being near elevation point 5515T;

thence southwesterly, changing to westerly, changing to southerly, parallel with and 200 feet southeasterly and southerly and easterly to the centerline of said road, to a point 200 feet southeasterly of said centerline of the road at its intersection with the section line between protracted Sections 1 & 2 T.9S.,

R.36E., MDM, being just north of the corner common to protracted Sections 1, 2, 11 & 12, T.9S., R.36E., MDM;

thence southerly along the section line between protracted Sections 1 & 2, 11, 12 to the corner common to protracted Sections 11, 12, 13, 14, T.9S., R.36E., MDM;

thence southerly along the line between protracted Sections 13 & 14, 23 & 24, 25 & 26 and 35 & 36 to the corner common to protracted Sections 1, 2, 35,36, being also the township line between T.9S. & T.10S., R.36E.,MDM;

thence easterly along said township line to the township corner common to T.9S. & T.10S., R.36E. & R.37E., MDM, also being the section corner of protracted Sections 1, 6 & 36;

thence southerly along the range line between T.10S., R.36E. & R.37E. and T.11S., R.36E. & R.37E., MDM to the section corner common to protracted Sections 30 & 31, T.11S., R.37E., MDM;

thence easterly along the section line between protracted Sections 30 & 31 and 29 & 32 to a drainage near the corner common to protracted Sections 28, 29, 32 & 33, T.11S., R.37E., MDM;

thence easterly along the center of said drainage to a point 5So feet southwesterly of its, intersection with the centerline of the Saline Valley Road, Inyo County Road 3013;

thence southerly, parallel with and 50 feet westerly of the centerline of the Saline Valley Road, Inyo County Roads 3013 & 4013 (changing to 4013 at Willow Creek) through protracted Sections 3, 10, 11, 14, 23, 26 & 35 to a point on the township line between T.12S. & T.13S., R.37E., MDM;

thence continuing southerly, changing to southeasterly, parallel with and 50 feet westerly of said centerline through protracted Sections 1, 2, 11, 12, 13, 18, 19, 30, 31 & 32 to a point on the township line between T.13S. & T.14S., R.38E., MDM;

thence continuing southeasterly, parallel with and 50 feet westerly of said centerline for approximately 0.25 miles to an unnamed vehicle trail, located in the northwest 1/4 of Section 5 T.14S., R.38E., MDM, elevation point 1178T;

thence continuing on southerly, parallel with and 50 feet westerly of said centerline of road 4013 past the unnamed road, past elevation points 1178T, 1141T & 1152 and continuing southeasterly, changing to southerly, changing to easterly, changing to southerly, parallel with and 50 westerly of the centerline of the Saline Valley Road, Inyo County Road 4013,

through protracted Sections 5, 4, 9, 16, 21, 22 to the intersection of the north-south centerline of protracted Section 27, T.14S., R.38E., MDM, near the 1090 elevation point;

thence south along the north-south centerline of protracted Sections 27, 34 T.14S., R.38E. & protracted Section 3, T.15S., R.38E., MDM to the 1800 foot contour interval;

thence southerly, changing to southeasterly, changing to easterly along the 1800 foot contour interval to the intersection with the section line between sections 8 and 17, T.15S., R.38E.;

thence due south to the center of the drainage of San Lucas Canyon;

thence southerly following the San Lucas Canyon to a point 50 feet northeasterly of San Lucas Canyon Road near elevation point 4744T;

thence southeasterly, parallel with and 50 feet northeasterly of said centerline of said road, which continues along the course of San Lucas Canyon, to its intersection with the centerline of the Southern Conglomerate Mesa/Cerro Gordo Road near elevation point 6198T;

thence on a southeasterly bearing to elevation point 6662T;

thence on a southeasterly bearing to elevation point 6092T coincident with the southeastern ridge line of the Santa Rosa Hills;

thence southeasterly along the said ridge line of the Santa Rosa Hills to a point 200 feet westerly of the centerline the Saline Valley Road, Inyo County Road 5013A nearest to Bench Mark 5376.4;

thence northeasterly parallel with and 200 feet westerly of said centerline of the Saline Valley Road to a point 200 feet westerly of the junction of an unpaved, unnamed road near elevation point 5321T;

thence across said road due east approximately 0.95 miles to a point 50 feet easterly of the centerline of an unnamed road east of the Lee Mines;

thence southerly, parallel with and 50 feet easterly of said centerline of said road to a point 50 feet southeasterly of the centerline of a second unpaved road, located southeasterly of the Lee Mines, near elevation point 5232T;

thence southeasterly, parallel with and 50 feet northeasterly of

said centerline of said unpaved road to a point 50 feet easterly of the centerline of its terminus;

thence continuing along the same bearing approximately 200 feet south of said point to a point 50 feet southeasterly of two unnamed mineral prospects;

thence due west approximately 1.05 miles to a point 200 feet east of the centerline of the Saline Valley/Hunter Mountain Road, Inyo County Road 5013A, south of the intersection of an unpaved road;

thence southerly, changing to easterly, changing to southeasterly, parallel with and 200 feet easterly and southerly and northeasterly of the centerline of the Saline Valley/Hunter Mountain Road, Inyo County Road 5013A to a point 300 feet northwesterly of the centerline of California State Highway 190;

thence northeasterly, parallel with and 300 feet northwesterly of the centerline of California State Highway 190 to a point 300 feet northwesterly of said centerline nearest to Bench Mark 4858.9;

thence on a southeasterly bearing to elevation point 5252T;

thence on a southeasterly bearing to elevation point 5602T;

thence continuing southeasterly on aforesaid bearing to a point on the range line between R.40E. & R.41E., T.18S., MDM;

thence southerly, approximately 0.2 miles on said range line to the center of an unnamed drainage;

thence southeasterly along the center of said drainage to a point on the section line between Sections 28 & 29, T.18S., R.41E., MDM;

thence southerly along said section line to a point in the center of an unnamed drainage immediately south of elevation point 3852T;

thence southeasterly, down the center of said drainage to the intersection with the center of the Darwin Canyon drainage;

thence southerly, up the center of the Darwin Canyon drainage to the point of intersection with the section line between Sections 3 & 4, T.19S., R.41E., MDM;

thence an a easterly bearing approximately 2.5 miles to elevation point 4008T;

thence northeasterly, down along the ridge line to the point of intersection with the east-west centerline of Section 31, T.19S., R.41E., MDM;

thence easterly on the E-W centerline of sections 31, 32, 33, and 34 to a point 200 feet northeasterly of the centerline of Inyo County Road S5018, the Panamint Valley Road;

thence southeasterly, parallel with and 200 feet northeasterly of the centerline of Inyo County Road S5018, approximately 4.75 miles to a point 200 feet from the centerline nearest to elevation point 1622;

thence southeasterly approximately 1.3 miles to the intersection of the centerlines of two unnamed and unpaved roads nearest to elevation point 1664;

thence southeasterly, along the centerline of said unnamed and unpaved road to a point of intersection with the section line between Sections 27 & 28, T.19S., R.43E. MDM;

thence southerly along said section line to the section corner common to Sections 27, 28, 33 & 34, T.19S., R.43E. MDM;

thence southeasterly to the section corner common to Sections 11, 12, 13 & 14, T.20S., R.43E. MDM;

thence southeasterly to the corner of Sections 27, 28, and surveyed Sections 33 & 34 T.20S., R.44E. MDM, said point also being on the northerly boundary line of the "Indian Ranch Reservation";

thence easterly to the 1/4 corner between Sections 27 & 34;

thence southerly along the north-south centerline of Section 34 and also being the easterly boundary of said "Indian Ranch Reservation" to the intersection with the center of the Hall Canyon drainage;

thence northeasterly along the center of the Hall Canyon drainage for approximately 2 miles to a point of intersection with centerline of the Hall Canyon Road, near the 4800 foot contour interval;

thence on a southeasterly bearing to elevation point 61BOT;

thence southeasterly to elevation point 7770T near the 1/4 corner and just south of the section line between Sections 16 & 21, T.21S., R.45E. MDM;

thence due east approximately 0.1 mile to the center of an unnamed drainage that is a tributary of Happy Canyon;

thence southerly along the center of said unnamed drainage to its intersection with the center of the Happy Canyon drainage;

thence bearing southwesterly to elevation point 7010T;

thence bearing southeasterly to a point 50 feet westerly of the intersection of the centerlines of Pleasant Canyon Road and Porter Mine Road;

thence northeasterly, changing to northerly, changing to southeasterly, parallel with and 50 feet northwesterly and westerly and northeasterly of the centerline of the Porter Mine Road to a point coincident with the north side line of the Hy-Grade #2 patented mining claim, Mineral Survey No. 7006;

thence easterly along line 1-4 of the Hy-Grade #2 to Corner No. 1 thereof, also being Corner No. 4 of the Hy-Grade #1, also of Mineral Survey No. 7006;

thence northeasterly along the northwest line 1-4 of the Hy-Grade #1 patented mining claim to Corner No. 1 thereof;

thence southeasterly along line 1-2 of the Hy-Grade #1 to Corner No. 2 thereof;

thence southwesterly along the southeast side line of the Hy-Grade #1 to Corner No. 3 thereof, also being Corner No. 2 of the Hy-Grade #2 patented mining claim;

thence westerly along the south side line of the of the Hy-Grade #2 patented mining claim to Corner No. 3 thereof;

thence southeasterly along the northeast end line of the Hy-Grade #3 patented mining claim, also of Mineral Survey No. 7006 to Corner No. 2 thereof;

thence southwesterly along the southeast side line of the Hy-Grade #3 patented mining claim to Corner No. 3 thereof;

thence northwesterly along the southwest end line of the Hy-Grade #3 patented mining claim to Corner No. 4 thereof, also being Corner No. 3 of the Hy-Grade #4 patented mining claim, also of Mineral Survey No. 7006;

thence northwesterly along the southwest end line of the Hy-Grade #4 patented mining claim to Corner No. 4 thereof;

thence northeasterly along the northwest side line of the Hy-Grade #4 patented mining claim to Corner No. 1 thereof, also being Corner No. 4 of the Hy-Grade #2 patented mining claim;

thence easterly along the north side line of the Hy-Grade #2 patented mining claim to a point 50 feet westerly of the centerline of the Porter Mine Road;

thence northwesterly, changing to southerly, changing to southwesterly parallel with and 50 feet southwesterly and easterly and southeasterly of the centerline of the Porter Mine Road to a point 50 feet northeasterly of the intersection of the Porter Mine Road and the Pleasant Canyon Road;

thence bearing southwesterly approximately 0.25 miles to elevation point 6538T;

thence southeasterly up and along an unnamed ridge line to the top of the ridge inside of the 7320 foot contour interval, near the center 1/4 corner of protracted Section 14, T.22S., R.45E.,MDM;

thence bearing southwesterly approximately 3 miles to elevation point 7267T, PARK USGS;

thence southwesterly approximately 0.65 miles to the head of Colter Spring, located in the northeast 1/4 of protracted Section 29, T.22S., R.45E., MDM;

thence southeasterly to elevation point 1717T (meters);

thence southerly to a point 50 feet westerly of the intersection of the centerline of the Redlands Canyon Road and the centerline of the Wood Canyon Road near elevation point 1289T (meters);

thence southeasterly, parallel with and 50 feet southwesterly of the centerline of the Wood Canyon Road to its terminus;

thence continuing along the center of the Wood Canyon drainage to the ridge line, approximately 0.25 miles southwest of elevation point 2165-T;

thence southwesterly, changing to southerly along said ridge line to Manly Peak, also being elevation point 2193.3 (meters);

thence bearing southerly to elevation point 2108.0 (meters);

thence bearing southeasterly to elevation point 1361T (meters);

thence bearing southerly to elevation point 1421T (meters);

thence bearing southeasterly to elevation point 1207T (meters);

thence bearing southeasterly to a point 50 feet southeasterly of the centerline of the Goler Canyon Road at the head of Sourdough Spring;

thence southwesterly, changing to westerly, parallel with and 50 feet southeasterly and southerly, of the centerline of aforesaid road, approximately 0.2 miles to the intersection of a drainage coming from the southeast near the 920 contour interval (meters);

thence bearing southwesterly from aforesaid intersection to elevation point 1046T (meters);

thence bearing southwesterly to a corner common to Sections 33 & 34, T.24S., R.45E., MDM, also being on township line between T.24S. & T.25S., said point also being on the Inyo County and San Bernardino County line, and also being on the China Lake Naval Weapons Center boundary;

thence easterly along said township line, also being on the Inyo County and San Bernardino County line, and also being the Northern Boundary of the China Lake Naval Weapons Center boundary, to the corner common to Section 4 & 5, T.25S., R.47E., MDM;

thence southerly along the section line between Sections 4 & 5, 8 & 9, 16 & 17, 20 & 21, and 28 & 29, T.25S., R.47E., MDM also being the boundary of the China Lake Naval Weapons Center, to the 1/4 corner between Sections 28 & 29, T.25S., R.47E., MDM;

thence westerly, continuing along said China Lake Naval Weapons Center boundary and the east-west centerline of protracted Sections 29 & 30, to the west 1/4 corner of protracted Section 30, said point also being on the range line between T.25S., R.46E. & R.47E., MDM;

thence southerly, continuing along said China Lake Naval Weapons Center boundary, and said range line to the corner common to protracted Sections 25 & 36, T.25S., R.46E., MDM;

thence westerly, continuing along said China Lake Naval Weapons Center boundary, and the section line between protracted Sections 25 & 36, to the east 1/16 corner between protracted Sections 25 & 36, T.25S., R.46E., MDM;

thence southerly, continuing along said China Lake Naval Weapons Center boundary and the north-south centerline of the northeast

1/4 of protracted Section 36 to the Center East 1/16 corner of protracted Section 36, T.25S., R.46E., MDM;

thence easterly, continuing along said China Lake Naval Weapons Center boundary and the east-west the centerline of protracted Section 36 to the east 1/4 corner of protracted Section 36, also being on the aforesaid range line between T.25S., R.46E. & R.47E., MDM;

thence northerly, continuing along said China Lake Naval Weapons Center boundary and said range line to the west 1/4 corner of protracted Section 31, T.25S., R.47E., MDM;

thence easterly, continuing along said China Lake Naval Weapons Center boundary and the east-west centerline of protracted Sections 31 & 32 to the center 1/4 corner of protracted Section 32, T.25S., R.47E., MDM;

thence southerly, continuing along said China Lake Naval Weapons Center boundary and the north-south centerline of protracted Section 32 to the south 1/4 corner of protracted Section 32 also being on the township line between T.25S. & T.26S., R.47E., MDM;

thence easterly, continuing along said China Lake Naval Weapons Center boundary and township line to a point on the San Bernardino Meridian;

thence southerly , continuing along said China Lake Naval Weapons Center boundary and San Bernardino Meridian to the west 1/4 corner of protracted Section 18 T.18N., R.lE., SBM;

thence easterly along the east-west centerline of protracted Section 18, 17, 16, 15, 14 & 13 to the east 1/4 corner of protracted Section 13, T.18N., R.lE., SBM, also being on the range line between R.lE. & R.2E., SBM;

thence northerly along said range line to the west 1/4 corner of protracted Section 18, T.18N., R.2E., SBM;

thence easterly along the east-west centerline of protracted Section 18, 17, 16, 15, 14 & 13 T.18N., R.2E., SBM, to the 1/4 corner between protracted Section 13, T.18N., R.2E., SBM, and protracted Section 18, T.18N., R.3E., SBM, also being on the range line between T.18N., R.2E. & R.3E., SBM;

thence continuing easterly along the east-west centerline of protracted Sections 18, 17, 16, 15, 14 & 13 to the 1/4 corner between protracted Section 13, T.18N., R.3E., SBM, and protracted Section 18 T.18N., R.4E., SBM, also being on the range line between T.18N., R.3E. & R.4E., SBM;

thence continuing easterly along the east-west centerline between protracted Sections 18, 17, 16, 15, 14 & 13, T.18N., R.4E., SBM, to the 1/4 corner between protracted Section 13, T.18N., R.4E., SBM, and protracted Section 18, T.18N., R.5E., SBM, also being on the range line between T.18N., R.4E. & R.5E., SBM;

thence continuing easterly along the east-west centerline between protracted Section 18, 17, 16, 15, 14, T.18N., R.5E., to a point 50 feet northeasterly of the centerline of the Harry Wade Road, Park Route # 1;

thence southeasterly, changing to easterly, changing to southeasterly, parallel with and 50 feet northerly and northeasterly of the centerline of the Harry Wade Road, Park Route # 1, to a point 300 feet westerly of the centerline of California State Highway 127;

thence northwesterly, parallel with and 300 feet southwesterly of the centerline of California State Highway 127 to a point 50 feet southerly of the centerline of an unnamed unpaved road near Bench Mark BM-JRH 15 410.2 (meters);

thence westerly, parallel with and 50 feet southerly of the centerline of an unnamed road to a point 50 feet southerly of the centerline of the Ibex Springs Road, near Bench Mark BM445.5 (meters);

thence bearing northwesterly to elevation point 662T (meters) on a ridge line;

thence continuing northwesterly along said ridge line to elevation point 687T (meters);

thence bearing northwesterly to the center 1/4 corner of protracted Section 32, T.20N., R.6E., SBM, also being coincident with the old Death Valley National Monument boundary;

thence northerly along the north-south centerline of protracted Sections 32 & 29, T.20N., R.6E., SBM, to the 1/4 corner between protracted Sections 20 & 29, also being coincident with the old Death Valley National Monument boundary;

thence westerly along the old Death Valley National Monument boundary, being the section line between protracted Sections 20 & 29, 19 & 30, T.20N., R.6E., SBM, and 24 & 25, T.20N., R.5E. to a point at the crest of the Ibex Hills, being near the 1210 contour interval (meters);

thence northeasterly changing to northerly along the crest of the

Ibex Hills to Ibex Peak, elevation point 1448T (meters);

thence northerly changing to northeasterly along a ridge line to elevation point 1296T (meters);

thence northeasterly along a ridge line to a point on the ridge line at the high point of a knob on the ridge line inside the closed 980 (meters) contour interval, approximately 0.2 miles southeasterly of Sheephead Spring;

thence bearing northwesterly, approximately 0.9 miles to elevation point 1166T (meters);

thence northeasterly, changing to northwesterly, changing to northerly along the crest of the Ibex Hills to elevation point 949T (meters);

thence due north to a point 300 feet north of the centerline of California State Highway 178;

thence northeasterly, parallel with and 300 feet northwesterly of said centerline to a point 300 feet southwesterly of the centerline of California State Highway 127;

thence northerly, parallel with and 300 feet northwesterly of said centerline to a point on the section line between protracted Sections 19 & 24, also being on the range line between T.24N., R.5E. & T.24N., R.6E., SBM;

thence southerly along said range line to the township corner common to protracted Sections 1, 6, 31 & 36, T.23N. & T.24N., R.5E. & R.6E., SBM;

thence westerly along the township line to the township corner, also being the on range line between R.4E. & R.5E., also the corner common to protracted Sections 1, 6, 31 & 36, T.23N. & T.24N., R.4E. & R.5E., SBM;

thence northerly along the range line to the corner common to protracted Sections 25, 30, 31 & 36, T.24N., R.4E. & R.5E., SBM;

thence westerly along the section line between protracted Sections 25 & 36, T.24N., R.4E., SBM to the corner common to protracted Sections 25, 26, 35 & 36, T.24N., R.4E., SBM;

thence northerly along the section line between protracted Sections 25 & 26, T.24N., R.4E., SBM to the corner common to 23, 24, 25 & 26, T.24N., R.4E., SBM;

thence westerly along the section line between protracted

Sections 23 & 26, T.24N., R.4E., SBM to the corner common to protracted Sections 22, 23, 26 & 27, T.24N., R.4E., SBM;

thence northerly along the section line between protracted Sections 22, 23, 14 & 15, T.24N., R.4E., SBM to the corner common to protracted Sections 10, 11, 14 & 15, T.24N., R.4E., SBM;

thence westerly along the section line between protracted Sections 10 & 15 to the west 1/16 corner between protracted Sections 10 & 15 T.24N., R.4E., SBM;

thence northerly along the north-south centerline of the southwest 1/4 of protracted Section 10 to the Center West 1/16 corner of protracted Section 10, T.24N., R.4E., SBM;

thence westerly along the east-west centerline of protracted Sections 9 & 10 to the Center East 1/16 corner of protracted Section 9, T.24N., R.4E., SBM;

thence northerly along the north-south centerline of the northeast 1/4 of protracted Section 9 to the northeast 1/16 corner of protracted Section 9, T.24N., R.4E., SBM;

thence westerly along the east-west centerline of the northeast 1/4 of protracted Section 9 to the Center North 1/16 corner of protracted Section 9, T.24N., R.4E., SBM;

thence northerly along the north-south centerline of protracted Section 9 to the 1/4 corner between protracted Sections 4 & 9, T.24N., R.4E., SBM;

thence westerly along the section line between protracted Sections 4 & 9, 5 & 8, 6 & 7 and 1 & 12 to the corner common to protracted Section 1, 2, 11 &.12, T.24N., R.3E., SBM;

thence northerly along the section line between protracted Sections 1 & 2 to the corner common to protracted Sections 1, 2, 35 & 36, also being on the township line between T.24N. & T.25N., R.3E., SBM;

thence westerly along the section line between protracted Sections 2 & 35 to the corner common to protracted Sections 2, 3, 34 & 35, T.24N. & T.25N., R.3E., SBM;

thence northerly along the section line between protracted Sections 34 & 35 to the corner common to protracted Sections 26, 27, 34 & 35, T.25N., R.3E., SBM;

thence westerly along the section line between protracted Sections 27 & 34 to the corner common to protracted Sections 27, 28, 33 & 34, T.25N., R.3E., SBM, also being coincident with the old Death Valley National Monument boundary;

thence northerly along the section line between protracted Sections 27, 28, 21 & 22, also being coincident with the old Death Valley National Monument boundary, to the corner common between protracted Sections 15, 16, 21 & 22, T.25N., R.3E., SBM;

thence westerly along the section line between protracted Sections 16, 21, 17 & 20, also being coincident with the old Death Valley National Monument boundary, to a point parallel with and 500 feet east from the centerline of the Dante's View Highway, Park Route # 30;

thence northwesterly, parallel with and 500 feet northeasterly of said centerline, also being coincident with the old Death Valley National Monument boundary, a point of intersection with the section line between protracted Sections 17 & 18, T.25N., R.3E., SBM;

thence northerly along the section line between protracted Sections 17, 18, 7, 8, 5 & 6, also being coincident with the old Death Valley National Monument boundary to the corner common to protracted Sections 5 & 6, also being on the township line between T.25N. & T.26N., R.3E., SBM;

thence easterly along said township line, also being coincident with the old Death Valley National Monument boundary, to the corner common to protracted Sections 31 & 32, T.26N., R.3E., SBM;

thence northerly along the section line between protracted Sections 31, 32, 29, 30, 19 & 20, also being coincident with the old Death Valley National Monument boundary, to a point 300 feet northerly of the centerline of California State Highway 190;

thence southeasterly, parallel with and 300 feet northeasterly of said centerline to the intersection with the centerline of an unnamed, unpaved road (now a drainage diversion) near elevation point 2950T;

thence bearing northeasterly to elevation point 3900T;

thence bearing northeasterly to elevation point 4758T;

thence northeasterly, along a northeasterly trending ridge line, approximately 2.3 miles to the high point inside the 3320 contour interval being near the terminus of the ridge line, in section 9, T.26N., R.4E.;

thence southeasterly to a point 50 feet northerly of the centerline of the terminus of an unnamed road by an unnamed prospect located approximately 0.25 miles northwesterly of elevation-point 2600T;

thence southeasterly, changing to easterly, changing to easterly, changing to northeasterly, parallel with and 50 feet northerly of the centerline of an unnamed, unpaved road to a point of intersection with the range line between R.4E. & R.5E., T.26N., SBM, also being the west section line of Section 6, T.26N., R.5E., SBM;

thence northerly along said range line to the corner common to Sections 1, 6, 31 & 36, T.26N. & T.27N., R.4E. & R.5E., SBM, also being the township line between T.26N. & T.27N., R.4E.;

thence westerly along said township line between Section 36 T.27N., R.4E., SBM, and protracted Section 1 T.26N., R.4E., SBM to the protracted corner of Sections 35 & 36 T.27N., R.4E., SBM, and protracted Sections 1 & 2, T.26N., R.4E., SBM;

thence northerly between Sections 35 & 36 and 25 & 26, passing through the historic Scranton Station grounds to a point 50 feet southerly of the centerline of the dismantled, historic Tonopah & Tidewater Railroad line, also being R4270 & S020133, the R/W and Scranton Station Grounds;

thence northwesterly, parallel with and 50 feet southwesterly of the centerline of the historic Tonopah & Tidewater Railroad Line, also being R 4270, R/W of the Tonopah & Tidewater RR, to a point of intersection with the State boundary line between California and Nevada, which is the **POINT OF BEGINNING.**

PARCEL NO. 2

Devils Hole Detached Management Unit

The SW 1/4 of SE 1/4 of Section 36, T.17S., R.50E. MDM, in the state of Nevada.

END OF DESCRIPTION

APPROVED 3/27/96

B-2. UNPATENTED MINING CLAIMS, DEATH VALLEY NATIONAL PARK

Claimant	Claim Group	Number of Claims	Lead BLM Serial Number	Location (MD & SB B&M) Township	Range	Sec.	Acres (approx.)	Comments
Milovich	Zlato No.1	1	231923	8S	39E	2	20	Lode
Sweet	Crater Grp.	16	109868	8S	39E	33, 34	331	Lodes
Cook	Storm Cloud	2	240316	9S	39E	15, 17	41	Lodes
Burgess / Striegel	Joe Ward	2	104688	10S	37E	7	41	Placers
Braden	Bonnie/ Newcastle	3	26249	10S	37E	31	62	
Blair & Hill	Morning Star/Pine Tree	6	38042	11S	37E	2,3	124	Lodes
Dahl & Haire	Emma	2	86211	11S	37E	4	41	
MacGregor	Windsong	1	254188	11S	37E	28	21	
Dickman	Silver Harvest	1	1667	14S	38E	4	21	Lode
Akin	Morning Sun	5	30408	14S 15S	38E 38E	9 3	56	2 lodes, 3 mill sites
Ostrenger	Saline Star 117	1	56565	14S	38E	10	20	Placer
Ostrenger	JO	11	5277	15S	41E	20-22, 28	145	Wollastonite; exam in progress
Dahl	Witte	1	54065	16S	39E	14	21	
Ostrenger	Silver Streak	2	221603	17S	40E	25	41	Lodes
Hollingsworth	Mothers Day	1	119722	18S	41E	11	20	Lode
Kummerfeld	Corona	2	38439	20S	44E	14	41	Panamint Mts.
Ostrenger	Jacob's Wonder Silver Series	7	101019 21391	21S	45E	10	56	3 Mill sites/4 Lodes Near Panamint
Lagrande Oro Mining Co.	Aaron Bluejay	2	39754	21S	45E	11	41	Lodes
North American Tree	New Surprise Valley	1	263487	21S	45E	11	5	Mill site
Hewlett & Moody	Moody	6	272950	21S	45E	15, 16, 21, 22	124	
Bradford	Evening	3	261584	21S	45E	36	62	Panamint Mts.
Fox	Alice Jean	1	32679	22S	45E	22	20	Lode
Funkhousen Skalski	Gods Country/ Lightning	3	254093	22S	45E	26, 27, 35	46	Lightning lode & mill God's Country Pl.
CR Briggs	PN 365	1	228060	22S	45E	36	21	
Harder	Redlands/ Lone Tree	2	260973	23S	45E	9,16	25	1 Lode; 1 Mill site
CR Briggs	Briggs 7 & 8	2	267057	23S	45E	23	41	
Keystone Mining Co.	Keystone	3	64413, 30785	24S	45E	10, 11	46	2 lodes; 1 mill site
Jackson & Baumunk	Death Valley BBJ	6	52822	18N 19N	6E	5 32	124	Exam completed Claims valid
Breslin/Hahn	Who Cares #1	1	60820	20N	5E	5	20	Lode
Laine	Sara	4	262118	22N	6E	23	83	Lodes
Naxos Resources	Arcan	18	14253	22 ½N 23N 24N	6E 6E 6E	23, 26 14, 23, 26, 35 19	372	Also: 23,24N-6E
U.S. Borax	Dixie 109-112	4	226843	24N	4E	10	83	May be partially in
U.S. Borax	Lila 377	1	219973	24N	4E	22	1	
R.T. Vanderbilt	Kaolin/ Kingfish	3	24101	26N	4E	10, 11, 18	46	2 Lodes; 1 Mill site
TOTALS		**125**					**2262**	

B-3. PATENTED MINING CLAIM GROUPS

NPS Lead Tract #	General Location	Approx. Acres	T	R	SEC
04-107	Gold Bar (Nevada Triangle)	77	11S	45E	35, 36
05-104	Bullfrog Hills (Nevada Triangle)	96	12S	45E	12, 13
13-103	Chloride City (northern Funeral Mtns.)	55	30N	1E	29
30-104	Skidoo (Emigrant Canyon-Panamint Mtns.)	109	17S	44E	23, 24, 25 26, 36
27-105	Echo Canyon (southern Funeral Mtns.)	214	27N	2E	1, 12
34-109	Furnace Creek Wash (Zabriskie)	2935	26N 26N 27N	1E 2E 1E	1, 2 5, 6, 7, 8, 9, 15, 16, 17, 20, 21, 22 35, 36
35-112	Upper Furnace Creek Wash	61	26N	2E	12
35-102	Upper Furnace Creek Wash (Ryan)	1006	26N	3E	many
no tract #	Upper Greenwater Valley (Black Mtns.)	410	24N	3E	34, 35
42-108	Mouth of Copper Canyon (Black Mtns.)	41	23N	2E	3
38-107	Wildrose Canyon	42	19S	44E	35, 36
no tract #	Surprise Canyon (Panamint City)	262	21S	45E	3, 4, 10, 14, 15, 22, 23
44-102 no tract #	Pleasant Canyon (Panamint Mtns.)	5 70	22S 22S	46E 45E	18 1, 2
44-103	Upper Warm Spring Canyon	60	22S	46E	23, 24
45-106	Warm Spring Canyon	101	22S	47E	31, 32
no tract #	Crystal Hills (southwest Owlshead Mtns.)	728	25S	47E	28, 29, 30, 31, 32, 33
no tract #	Northern Ibex Hills	34	21N	5E	32, 33
54-103	Central Ibex Hills	5	19N	5E	2
	TOTAL	**6311**			

*AS OF JULY 2000

B-4. APPROPRIATED WATER RIGHTS RECORDED WITH THE STATE OF CALIFORNIA

Note: This table represents those water rights recorded with the state of California, but is not necessarily a complete collection of water rights that may exist. Many rights may have been recorded with the counties prior to the state recordation process. This list is for information only and does not represent any official recognition of water rights.

DEVA WATER RIGHTS APP NUM	T		R	Sec	1/4	1/4	SOURCE	TRIBUTARY	OWNER NAME	D/D AMT		USE
A008183	18	N	5	2	SW	NW	SARATOGA SPRINGS	DEATH VALLEY	DEATH VALLEY NATIONAL PARK	4800.000	G	W, R
G363381	19	N	2	21	NE	SE			LESHIN, SOL			
A010245	19	N	5	2	NW	NE	IBEX SPRING NO 2	AMARGOSA RIVER	MORRIS, NEWELL	200.000	G	D
A010247	19	N	5	2	NW	NE	IBEX SPRING NO 1	AMARGOSA RIVER	MORRIS, NEWELL	200.000	G	D
A010119	27	N	1	23	NW	NE	UNSP	SALT CREEK	DEATH VALLEY NATIONAL PARK	0.078	C	E, D
A009510	28	N	1	36	SW	NE	MAIN COW CREEK	DEATH VALLEY	DEATH VALLEY NATIONAL PARK	0.045	C	R, D
A012320	7	S	39	21	NW	NE	WILLOW SPRING	WILLOW CREEK	LIDA LIVESTOCK COMPANY	3750.000	G	S
F004231S	8	S	39	2	NW	SE	LAST CHANCE SPRING	LAST CHANCE CANYON		0.000		S, W
F004229S	9	S	41	7	SE	SE	SAND SPRING	DEATH VALLEY WASH		0.000		R, S, W
F004230S	9	S	41	17	SW	SE	LITTLE SAND SPRING	DEATH VALLEY WASH		0.000		R, W, S
A019482	11	S	42	24	NE	SW	RANGER SPRING	UNST	DEATH VALLEY NATIONAL PARK	7200.000	G	R, W, D
A019538	11	S	42	26	SE	SE	MESQUITE SPRING	UNST	DEATH VALLEY NATIONAL PARK	7200.000	G	I, W, D
A021646	11	S	43	13	NE	SE	UNST	DEATH VALLEY	DEATH VALLEY NATIONAL PARK	7300.000	G	D
S007383	14	S	38	3		SE	MESQUITE WATER HOLE	SALT LAKE	DEATH VALLEY NATIONAL PARK	0.050	C	R, W, D
F007952S	14	S	39	27	NW	NW	SALINE WELL	SALINE VALLEY	DEATH VALLEY NATIONAL PARK	0.500	C	B, C, D
S012565	15	S	40	36	SW	SE	BIG DODD SPRING	SALINE VALLEY	DEATH VALLEY NATIONAL PARK	0.041	C	W
S008309	15	S	41	33	SE	SE	SPANISH SPRING	UNST	DEATH VALLEY NATIONAL PARK	100.000	G	W
A018433	15	S	42	29	SE	SW	GOLDBELT SPRING	UNST	DEATH VALLEY NATIONAL PARK	650.000	G	W, R
S012564	16	S	41	32	SE	NE	MILL CANYON SPRING	MILL CANYON	DEATH VALLEY NATIONAL PARK	7000.000	G	S, W
S012561	16	S	41	33	SE	NE	UNSP	MILL CANYON		0.027	C	S, W
A005073	17	S	44	27	NW	NE	LOWER SPRING	EMIGRANT WASH	DEATH VALLEY NATIONAL PARK	700.000	G	D
A015381	17	S	44	27	NW	NE	LOWER EMIGRANT SPRING	EMIGRANT WASH	DEATH VALLEY NATIONAL PARK	2800.000	G	D
A008950	18	S	41	34	SE	SW	DARWIN WASH	PANAMINT VALLEY	NINNIS, HELEN	0.053	C	D
A015539	18	S	44	2	NW	SW	COVERED SPRING/ WEE SPRING	EMIGRANT CANYON	DEATH VALLEY NATIONAL PARK	100.000	G	W
A013852A	18	S	44	2	NW	SW	BURNS SPRING	UNXX	DEATH VALLEY NATIONAL PARK	100.000	G	D
A010276	19	S	44	29	NE	NE	WILDROSE	WILDROSE	DEATH VALLEY	1500.000	G	D

DEVA WATER RIGHTS APP NUM	T		R	Sec	1/4	1/4	SOURCE	TRIBUTARY	OWNER NAME	D/D AMT		USE
							SPRING	CANYON	NATIONAL PARK			
A016096	19	S	45	2	SW	NE	TARANTULA SPRING	TRAIL CANYON	DEATH VALLEY NATIONAL PARK	4350.000	G	W
A008423	19	S	45	35	SE	SW	UNSP	WILDROSE CANYON	DEATH VALLEY NATIONAL PARK	400.000	G	D
S012558	20	S	44	1	SW	SW	MIDDLE TUBER CANYON	TUBER CANYON	DEATH VALLEY NATIONAL PARK	0.055	C	W
S012559	20	S	44	10	NW	NW	LOWER TUBER CANYON	TUBER CANYON	DEATH VALLEY NATIONAL PARK	0.041	C	W
S012557	20	S	44	13	NE	SE	JAIL CANYON	PANAMINT VALLEY	DEATH VALLEY NATIONAL PARK	0.138	C	W
A012245	20	S	44	14	NW	SE	JAIL CANYON	PANAMINT VALLEY	KUMMERFELD, KEITH	0.110	C	D, B
A014766	20	S	44	14	NW	SE	JAIL CANYON	PANAMINT VALLEY	KUMMERFELD, KEITH	0.500	C	P
S009067	21	S	45	21			HAPPY CANYON	PANAMINT VALLEY	MOODY, DAVID	3750.000	G	B
S012556	21	S	45	9	SW	SW	BREWERY SPRING	SURPRISE CANYON	DEATH VALLEY NATIONAL PARK	0.138	C	R, W
S007378	21	S	45	10			SOURDOUGH CANYON	SURPRISE CANYON	DEATH VALLEY NATIONAL PARK	0.050	C	D, R, W
A003269	21	S	45	11	SE	NE	WATER CANYON	PANAMINT VALLEY	LA GRANDE ORO MINING CO. LTD	0.060	C	B, D
S006355	21	S	45	11	SW	NE	WATER CANYON	SURPRISE CANYON	DEATH VALLEY NATIONAL PARK	100.000	G	D, R, W
S007379	21	S	45	11	NE	SW	SLAUGHTER HOUSE SPRINGS	WATER CANYON	DEATH VALLEY NATIONAL PARK	0.050	C	D, W, R
A010179	24	S	45	11	NE	SW	SOURDOUGH SPRINGS	UNST	KEYSTONE MINING COMPANY	470.000	G	B, D
A026173	24	S	45	11	NW	SW	SOURDOUGH SPRINGS	UNST	KEYSTONE MINING COMPANY	0.110	C	B, D
A010139	24	S	45	12	SW	NW	UNSP	PANAMINT WASH	MYERS, BARBARA	0.025	C	D
S012553	24	S	46	6	SW	SE	SOUTH BURRO SPRING	GOLER WASH	DEATH VALLEY NATIONAL PARK	900.000	G	W
S012554	24	S	46	9	NE	SW	MYSTERY SPRING	WINGATE WASH	DEATH VALLEY NATIONAL PARK	900.000	G	W

*Information provided by U.S. Borax:

Naval Springs, dated May 12, 1906, and recorded June 28, 1906 in Volume "A," Land and Water Claims, p. 497, records of Inyo County, California.

RECORD TYPES

A - APPLC - APPROPRIATIVE
D - SMDOM - SMALL DOMESTIC REG
F - FEDRL - FEDERAL FILINGS (RESERVATION RIGHT)
G - GRWTR - GROUNDWATER RECORDATION
S - STATE - STATEMENT OF DIV & USE

USE TYPES

B - MINING
C - MILLING
D - DOMESTIC

E - FIRE PROTECTION
I - IRRIGATION
J - INDUSTRIAL
K - INCIDENTAL POWER
P - POWER
R - RECREATIONAL
S - STOCKWATERING
W - FISH & WILDLIFE PROTECTION AND / OR ENHANCEMENT

OTHER ABBREVIATIONS
UNSP - UNNAMED SPRING
UNST - UNNAMED STREAM
UNXX - OTHER
S - SAN BERNARDINO BASE & MERIDIAN
C - CFS - CUBIC FEET PER SECOND; 646, 317 GALLONS PER DAY (GPD)
G - GPD - GALLONS PER DAY; 1.55 CFS
DD - DIR/DIV - DIRECT DIVERSION

APPENDIX C: SPECIES OF SPECIAL CONSIDERATION

SPECIES OF SPECIAL CONSIDERATION

Species of special consideration is a broad term intended to encompass names used by managing agencies such as sensitive species, species of special concern, endangered, threatened, etc. Some terms can vary appreciably in formality or use and the criteria for species status can vary among agencies. In addition, most taxa carry more than one listing status or designation.

The sensitive species analysis included all species within the Death Valley National Park, a 3.3 million acre area of California and a small part of Nevada. This analysis found that Death Valley National Park supports roughly 125 plant and animal species of special consideration. These include species that are endangered, threatened, proposed, or candidate species under the Federal Endangered Species Act of 1973, as amended; endangered, threatened, proposed, or rare under the California Endangered Species Act; or agency-defined sensitive or endemic species of special concern. The following tables show these protective designations or others defined by the California Native Plant Society (CNPS) or the California/Nevada Natural Diversity Data Base (CNDDB/NNDDB).

Habitats that support one or more species of special consideration were reviewed in this planning effort, although not typically given legal protective status by agencies, as are individual species. Because of this, habitats of special consideration may also be referred to throughout this document as "sensitive habitats." Those sensitive habitats which were a focus of plan review were riparian, wetland, sand dune and wash habitats as well as widespread or local habitats key in supporting desert tortoise, bats, bighorn sheep, carbonate plants and a variety of endemic species.

TABLE C-1: ANIMALS OF SPECIAL CONSIDERATION WITHIN DEATH VALLEY NATIONAL PARK
(Federally or State Listed or Proposed Species known to occur within Death Valley National Park are bolded)

ANIMAL SPECIES		LISTING STATUS	
Common Name	**Scientific Name**	**Federal**	**State**
BIRDS			
Cooper's hawk	*Accipiter cooperi*		CDF&G "Species of Special Concern"
tricolored blackbird	*Agelaius tricolor*	NPS SS	CDF&G "Species of Special Concern"
golden eagle	*Aquila chrysaetos*	Protected under the Bald Eagle Protection Act	CDF&G "Species of Special Concern"
long-eared owl	*Asio otus*		CDF&G "Species of Special Concern"
western burrowing owl	*Athene cunicularia-hypugea*		CDF&G "Species of Special Concern"
ferruginous hawk	*Buteo regalis*	NPS SS	CDF&G "Species of Special Concern"
Swainson's hawk	***Buteo swainsoni***		**Threatened**
western snowy plover	*Charadrius alexandrinus nivosus*	**Coastal** populations are listed Threatened; **Inland** populations are not. NPS SS	CDF&G "Species of Special Concern"
northern harrier	*Circus cyaneus*		CDF&G "Species of Special Concern"
western yellow billed cuckoo	***Coccyzus americanus occidentalis***		**Endangered**
yellow warbler	*Dendroica petechia brewsteri*		CDF&G "Species of Special Concern"
southwestern willow flycatcher	***Empidonax trailli extimus***	**Endangered**	**(*Empidonax trailli* is state listed Endangered)**
prairie falcon	*Falco mexicanus*		CDF&G "Species of Special Concern"
yellow-breasted chat	*Icteria virens*		CDF&G "Species of Special Concern"
western least bittern	*Ixobrychus exilis hesperis*	NPS SS	
California grey-headed junco	*Junco hyemalis caniceps*		CDF&G "Species of Special Concern"
loggerhead shrike	*Lanius ludovicianus*	NPS SS	CDF&G "Species of Special Concern"

ANIMAL SPECIES		LISTING STATUS	
Common Name	**Scientific Name**	**Federal**	**State**
elf owl	***Micrathene whitneyi***		**Endangered**
hepatic tanager	*Piranga flava*		CDF&G "Species of Special Concern"
summer tanager	*Piranga rubra*		CDF&G "Species of Special Concern"
white-faced ibis	*Plegadis chihi*	NPS SS	CDF&G "Species of Special Concern"
black-tailed gnatcatcher	*Polioptila melanura*		CDF&G "Species of Special Concern"
vermilion flycatcher	*Pyrocephalus rubinus*		CDF&G "Species of Special Concern"
Bendire'thrasher	*Toxostoma bendirei*		CDF&G "Species of Special Concern"
Crissal thrasher	*Toxostoma crissale*		CDF&G "Species of Special Concern"
Le Conte'thrasher	*Toxostoma lecontei*		CDF&G "Species of Special Concern"
Virginia's warbler	*Vermivora virginae*		CDF&G "Species of Special Concern"
least Bells vireo	***Vireo bellii pusillus***	**Endangered**	**Endangered**
gray vireo	*Vireo vicinior*		CDF&G "Species of Special Concern"
MAMMALS			
desert pallid bat	*Antrozous pallida*		CDF&G "Species of Special Concern"
Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	NPS SS	CDF&G "Species of Special Concern"
Western mastiff bat	*Eumops perotis*		Recommended for inclusion in this table by CDF&G
Big free-tailed bat	*Nyctinompos macrotis*		Recommended for inclusion in this table by CDF&G
Pocketed free-tailed bat	*Nyctinomops femorosaccus*		Recommended for inclusion in this table by CDF&G
Fringed myotis	*Myotis thysanodes*		Recommended for inclusion in this table by CDF&G
California leaf-nosed bat	*Macrotus californicus*		Recommended for inclusion in this table by CDF&G (not recorded within Park but found at southern boundary)
Western red bat	*Lasiurus blossevillii*		Recommended for inclusion in this table by CDF&G (identified as threatened by Western Bat Working Group)
Panamint kangaroo rat	*Dipodomys panamintinus panamintinus*		
desert bighorn sheep	*Ovis canadensis nelsoni*	BLM SS	
Mohave ground squirrel	***Spermophilus mohavensis***	**NPS SS**	**Threatened**
american badger	*Taxidea taxus*		CDF&G "Species of Special Concern"
Amargosa southern pocket gopher	*Thomomys umbrinus amargosae*	NPS SS	
AMPHIBIANS			
Inyo Mountains salamander	*Batrachoseps campi*	BLM SS	CDF&G "Species of Special Concern" (no record within Death Valley, but may portentialy be present)
black toad	***Bufo exsul***		**Threatened**
REPTILES			
Panamint alligator lizard	*Elgaria panamintinus*	NPS SS	CDF&G "Species of Special Concern"
desert tortoise	***Gopherus agassizii***	**Threatened**	**Threatened**
rosy boa	*Lichanura trivirgata*	NPS SS	
chuckwalla	*Sauromalus obesus*		CDF&G " Species of Special Concern"
FISH			
Devils Hole Pupfish	***Cyprinodon diabolis***	**Endangered**	**NV Endangered**

ANIMAL SPECIES		LISTING STATUS	
Common Name	**Scientific Name**	**Federal**	**State**
Amargosa River pupfish	*Cyprinodon nevadensis amargosae*	BLM SS	CDF&G "Species of Special Concern"
Saratoga Springs pupfish	*Cyprinodon nevadensis nevadensis*		CDF&G "Species of Special Concern"
Cottonball Marsh pupfish	*Cyprinodon salinus milleri*		Threatened
Salt Creek pupfish	*Cyprinodon salinus salinus*		CDF&G "Species of Special Concern"
Amargosa Canyon speckled dace	*Rhinichthys osculus* ssp 1		CDF&G "Species of Special Concern"
INSECTS			
Furnace Creek naucorid bug	*Ambrysus funebris*		
Saratoga Springs Belastoma bug	*Belostoma saratogae*	NPS SS	
monarch butterfly	*Danaus plexippus*		
Furnace Creek riffle beetle	*Microcylloepus formicoideus*	NPS SS	
unnamed riffle beetle	*Microcylloepus similis*	NPS SS	
Amargosa Naucorid bug	*Pelocoris shoshone amargosus*	NPS SS	
Saline Valley Snow Front Scarab beetle	*Polyphylla anteronivea*		
Death Valley June beetle	*Polyphylla erratica*	NPS SS	
Devils Hole riffle beetle	*Stenelmis calida calida*	NPS SS	
SNAILS			
Badwater snail	*Assiminea infima*	NPS SS	
Oasis Valley spring snail	*Pyrgulopsis micrococcus*	NPS SS	
Grapevine Springs elongate tryonia	*Tryonia margae*	NPS SS	
robust tryonia	*Tryonia robusta*	NPS SS	
Grapevine Springs squat tryonia	*Tryonia rolandsi*	NPS SS	
Cottonball Marsh tryonia	*Tryonia salina*	NPS SS	
Amargosa tryonia	*Tryonia variegata*	NPS SS	

STATUS EXPLANATIONS

Federal

NPS SS = National Park Service Sensitive Species = Any species or infraspecies not otherwise designated whose population characteristics warrant special management or more intensive monitoring. Consideration may include but is not limited to: local rarity; endemism, Park management objectives, usefulness of species as an indicator species, vulnerability to population declines; human disturbance; political concern / public interest

BLM SS = Bureau of Land Management Sensitive Species = Sensitive species are those designated by a State Director, usually in cooperation with the State agency responsible for managing the species as sensitive. They are those species that are: (1) under status review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary; or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats.

Endangered = any species that is in danger of extinction throughout all or a significant portion of its range.

Threatened = any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Proposed species = any species of fish, wildlife, or plant that is proposed in the Federal Register to be listed under section 4

of the Endangered Species Act.

State

CDFG "Species of Special Concern" = An administrative designation given to vertebrate species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a threatened or endangered species.

TABLE C-2: PLANTS OF SPECIAL CONSIDERATION WITHIN DEATH VALLEY NATIONAL PARK (Federally or State Listed or Proposed Species known to occur within Death Valley National Park are bolded)

PLANT SPECIES		LISTING STATUS		CNPS	CNPS RED CODE
Common Name	**Scientific Name**	**Federal***	**State**	**CNPS**	
Mormon needle grass	*Achnatherum aridum*			2	2-1-1
pinyon rock cress	*Arabis dispar*			2	2-1-1
Darwin rock cress	*Arabis pulchra* var. *munciensis*	BLM SS		2	3-1-1
Shockley's rock cress	*Arabis shockleyi*			2	3-2-1
white bear poppy	*Arctomecon merriamii*	BLM SS		1B	2-2-2
Darwin Mesa milk-vetch	*Astragalus atratus* var. *mensanus*			1B	3-1-3
black milk-vetch	*Astragalus funereus*	BLM SS		1B	3-2-2
Geyer's milk-vetch	*Astragalus geyeri* var. *geyeri*	BLM SS		2	3-2-1
Gilman's milk-vetch	*Astragalus gilmanii*			4	1-2-2
shining milk-vetch	*Astragalus lentiginosus* var. *micans*			1B	3-2-3
Sodaville milk-vetch	***Astragalus lentiginosus* var. *sesquimetralis***		**CA Endangered; NVCE**	**1B**	**3-3-2**
curved-pod milk-vetch	*Astragalus mohavensis* var. *hemigyrus*	BLM SS	NVCE#	1A	
little big-pod milk-vetch	*Astragalus platytropis*			2	2-2-1
Preuss's milk-vetch	*Astragalus preussii* var. *preussii*			2	3-1-1
naked milk-vetch	*Astragalus serenoi* var. *shockleyi*			2	2-2-1
scaly cloak fern	*Astrolepsis cochisensis*			2	2-1-1
King's eyelash grass	*Blepharidachne kingii*			2	2-1-1
red grama	*Bouteloua trifida*			2	3-1-1
Jaeger's caulostramina	*Caulostramina jaegeri*	BLM SS		1B	3-2-3
Spring loving centaury	***Centaurium namophilum***	**Threatened**	**NVCE**		
Wooton's lace fern	*Cheilanthes wootonii*			2	2-1-1
desert birds beak	*Cordylanthus eremicus* ssp. *eremicus*			4	1-1-3
Gilman's cymopterus	*Cymopterus gilmanii*			2	2-1-1
Ripley's cymopterus	*Cymopterus ripleyi*			2	3-2-1
July gold	***Dedeckera eurekensis***	**BLM SS**	**CA Rare**	**1B**	**2-1-3**
Panamint Dudleya	*Dudleya saxosa saxosa*			4	1-2-3
Panamint daisy	*Enceliopsis covillei*	BLM SS		1B	3-2-3
Ash meadows sunray	***Enceliopsis nudicaulis* var. *corrugata***	**Threatened**	**NVCE**	**4**	**1-1-1**
Gilman's goldenbush	*Ericameria gilmanii*			1B	3-1-3
Reveal's buckwheat	*Eriogonum contiguum*			2	2-1-1
Wild Rose canyon buckwheat	*Eriogonum eremicola*	BLM SS		1B	3-1-3
jointed buckwheat	*Eriogonum intrafractum*			4	1-1-3
Panamint Mountains buckwheat	*Eriogonum microthecum* var. *panamintense*	BLM SS		1B	3-1-3
hairy erioneuron	*Erioneuron pilosum*			2	2-1-1
hot-springs fimbristylis	*Fimbristylis thermalis*			2	2-2-1
Telescope peak bedstraw	*Galium hypotrichium* ssp. *tomentellum*			1B	3-1-3
Ripley's gilia	*Gilia ripleyi*			2	3-1-1
golden carpet	*Gilmania luteola*			1B	3-1-3
Inyo hulsea	*Hulsea vestita* ssp. *inyoensis*	BLM SS		2	2-2-1
Yellow ivesia	*Ivesia arizonica* var. *arizonica*			3	?-?-1
sand linanthus	*Linanthus arenicola*			2	1-2-1
Panamint Mountains lupine	*Lupinus magnificus var. magnificus*	BLM SS		1B	3-1-3
rock lady	***Maurandya petrophila***	**BLM SS**	**CA Rare**	**1B**	**3-2-3**
Utah monkeyflower	*Mimulus glabratus* ssp. *utahensis*			2	3-2-1
Amargosa niterwort	*Nitrophila mohavensis*	Endangered	**CA Endangered**	1B	3-3-2
Eureka Dunes evening primrose	***Oenothera californica* ssp. *eurekensis***	**Endangered**	**CA Rare**	**1B**	**3-2-3**

PLANT SPECIES		LISTING STATUS		CNPS	CNPS RED CODE
Common Name	**Scientific Name**	**Federal***	**State**	**CNPS**	
Watson's oxytheca	*Oxytheca watsonii*			2	3-2-1
cliff brake	*Pellaea truncata*			2	2-1-1
limestone beard tongue	*Penstemon calcareus*			2	2-1-1
Death Valley beardtongue	*Penstemon fruticiformis* var. *amargosae*	BLM SS		4	1-1-2
Pahute Mesa penstemon	*Penstemon pahutensis*				
Hanaupah rock daisy	*Perityle villosa*	BLM SS		1B	3-1-3
Death Valley sandpaper plant	*Petalonyx thurberi* ssp. *gilmanii*	BLM SS		1B	3-2-3
Saline Valley phacelia	*Phacelia amabilis*			3	3-1-3
Aven Nelson's phacelia	*Phacelia anelsonii*			2	2-1-1
Death Valley round-leaved phacelia	*Phacelia mustelina*		On watch list in NV	1B	2-1-2
Goodding's phacelia	*Phacelia pulchella* var. *gooddingii*			2	3-1-1
notch-beaked milkwort	*Polygala heterorhyncha*			1B	2-1-2
Rusby's mallow	*Sphaeralcea rusbyi* ssp. *eremicola*	BLM SS		1B	3-2-3
Eureka Valley dunegrass	***Swallenia alexandrae***	**Endangered**	**CA Rare**	**1B**	**3-2-3**
holly-leaved tetracoccus	*Tetracoccus ilicifolius*			1B	3-1-3

STATUS EXPLANATIONS

Federal

* See abouve Status Explanations Section for animals for definiation of terms.

State

NVCE = Critically Endangered in Nevada

NVCE# = Recommended for Critically Endangered List, pending formal list

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California

List 1B = Plants Rare, Threatened, or Endangered in California and elsewhere

List 2 = Plants Rare, Threatened, or Endangered in California, but more common elsewhere

List 3 = Plants about which we need more information--a review list

List 4 = Plants of limited distribution--a watch list

CNPS RED Code

R (Rarity)

1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time

2 = Distributed in a limited number of occurrences, occasionally more if each occurrence is small

3 = Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported

E (Endangerment)

1 = Not endangered

2 = Endangered in a portion of its range

3 = Endangered throughout its range

D (Distribution)

1 = More or less widespread outside California

2 = Rare outside California

3 = Endemic to California

TABLE C-3: LISTED ANIMALS WITHIN DEATH VALLEY NATIONAL PARK

ANIMAL SPECIES		LISTING STATUS		HABITAT	DISTRIBUTION	THREATS	IMPORTANCE OF NEMO TO LONG-TERM CONSERVATION OF THE SPECIES
Common Name	**Scientific Name**	**Federal**	**State**				
BIRDS							
Swainson's hawk	*Buteo swainsoni*		Threatened	Breeds in juniper-sage flats, riparian areas and in oak savanna. Requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields supporting rodent populations. Trees are important nesting habitat in desert.	Western half of U.S., w Canada, ne MX. In CA, primarily migrants throughout planning area. Has been recorded at the Amargosa Canyon Natural Area and its immediate drainage and at MOJA[1] and DEVA[2]. Owens Valley supports a small breeding population	Although formerly abundant in CA, loss of nesting habitat has reduced the state's population significantly. Off-site pesticide use is another significant threat.	The planning area encompasses little of the species' total range.
western yellow billed cuckoo	*Coccyzus americanus occidentalis*		Endangered	Riparian forest nester, along the broad lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Probably only 50 pairs of cuckoos are presently in CA (primarily at Kern & Sacramento Rivers). Has been recorded at Amargosa Canyon Natural Area and at DEVA, also at Prado Basin, Mojave R. (Victorville), Owens Valley, Santa Clara R. CA summer migrant.	Habitat loss and fragmentation due to clearing of riparian stands for flood control, land reclamation, agriculture and urbanization. Lowering water tables due to irrigation, construction of dams and urban growth. Exotic vegetation and grazing.	The planning area encompasses little of the species' total range.

ANIMAL SPECIES		LISTING STATUS		HABITAT	DISTRIBUTION	THREATS	IMPORTANCE OF NEMO TO LONG-TERM CONSERVATION OF THE SPECIES
Common Name	**Scientific Name**	**Federal**	**State**				
southwestern willow flycatcher	*Empidonax trailli extimus*	Endangered	(*Empidonax trailli* is State listed Endangered)	Inhabit extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters. Require dense willow thickets for nesting and roosting; low, exposed branches are used for singing posts and hunting perches. 2000–8000 ft elev.	Only 300-500 nesting pairs thought to exist over species' entire range (70 pairs in CA). Breeding range includes s CA, s NV, s UT, NM, w TX; (possibly sw CO, n Baja, CA and Sonora, MX). Recorded at Amargosa Canyon Natural Area, DEVA, and at least at the species level at MOJA.	Cowbird parasitism and habitat modification are primary threats; the latter from: water diversion, livestock grazing (including destruction of nests by cattle). ORV / OHV[3] and other recreational uses.	Certain wetlands in NEMO are ephemeral sites for SWWF. Because migration routes and wintering grounds are not well known and habitat patches as small as 0.5 hectares can support 1-2 nesting pairs, the planning area may be of some although limited importance to species recovery.
least Bells vireo	*Vireo bellii pusillus*	Endangered	Endangered	Riparian; willow-cottonwood forest, oak woodland, shrubby thickets and dry washes established with arroyo willows. Small amounts of aquatic and herbaceous cover. Dense shrub layer from 2.0 to 9.9 ft above ground.	Only in CA and Baja CA. Small scattered areas in south/south-central CA; coastal/inland. Currently breeds in few scattered riparian habitat in s CA, in Amargosa River. Has been recorded at Amargosa Canyon Natural Area and its immediate drainage; also at DEVA.	Loss of riparian habitat. Brood parasitism by brown-headed cowbirds. Susceptibility to rapid local extinction resulting from disease outbreak or increase in predators or parasites. Nest predation by birds, snakes and mammals.	The planning area represents fringe habitats for LBV and low numbers of documented birds, given depleted habitats near large population centers in southern CA; however, NEMO management may contribute to species recovery.
MAMMALS							
Mohave ground squirrel	*Spermophilus mohavensis*	(Former C2) NPS SS	Threatened	Open desert scrub, alkali desert scrub, Joshua tree woodland. Feed in annual grasslands. Prefers sandy to gravely soils. Avoids rocky areas; uses burrows at base of shrubs for cover; nests are in burrows. 1800–5000 feet elevation.	Western Mojave Desert, Inyo, Kern, San Bernardino, Los Angeles counties. Has been recorded at DEVA and BLM[4].	Degradation of habitat by agriculture, OHV / ORV activity, military maneuvers, livestock grazing. Isolation of individual populations due to habitat fragmentation.	

ANIMAL SPECIES		LISTING STATUS		HABITAT	DISTRIBUTION	THREATS	IMPORTANCE OF NEMO TO LONG-TERM CONSERVATION OF THE SPECIES
Common Name	**Scientific Name**	**Federal**	**State**				
AMPHIBIANS							
black toad	*Bufo exsul*	(Former C2)	Threatened	Near springs, watercourses, marshes, wet meadows. Seek cover under and between clumps of vegetation, surface objects. 5000–52000 ft elev.	Found only in Deep Springs Valley between the White and Inyo Mountains. Mostly at Corral Springs, Bog Mound Springs and Buckhorn Springs and a few at Antelope Springs 5 miles to the north. Has been recorded at DEVA and BLM.	State threatened due to naturally small populations and restricted habitat. Water development and diversion. Vulnerability to excessive vegetation growth surrounding its habitat.	The planning area is important to the recovery of this species.
REPTILES							
desert tortoise	*Gopherus agassizii*	Threatened	Threatened	Wide variety of habitats including alluvial fans, desert washes, broad valleys, creosote bush communities with annual flower blooms. Friable soil for digging burrows.	Mojave Desert portions of CA, NV, and north of the Colorado River in AZ and southwestern UT. Has been recorded at DEVA, MOJA, and BLM.	Upper respiratory tract and shell lesion diseases. Collection. Predation by ravens and canids. Conflicts with livestock and feral burros (trampling). Direct mortality and injury by humans from poaching, shooting, OHV / ORV use.	NEMO includes roughly 10-15% of total critical habitat designated for DT. Populations receive relatively few human impacts and may be relatively disease-free as compared with western Mojave populations, an important consideration for species recovery.
FISH							
Devils Hole Pupfish	*Cyprinodon diabolis*	Endangered	NV Critically Endangered		Occurs only at Devils Hole in NV (NPS administered) but part of the larger system that includes Ash Meadows. Endemic to DEVA Class I.[5]	Groundwater mining in Ash Meadows directly lowers the water level in Devil's Hole and progressively exposes the shallow limestone shelf upon which the pupfish depend for food and spawning.	This species occurs entirely within the planning area at DEVA.

STATUS EXPLANATIONS

Federal

NPS SS = National Park Service Sensitive Species = Any species or infraspecies not otherwise designated whose population characteristics warrant special management or more intensive monitoring. Consideration may include but is not limited to: local rarity; endemism, Park management objectives, usefulness of species as an indicator species, vulnerability to population declines; human disturbance; political concern / public interest

NOTES

[1] MOJA = Mojave National Preserve

[2] DEVA = Death Valley National Park

[3] OHV/ORV = Off-Highway Vehicles or Off-Road Vehicles

[4] BLM = Bureau of Land Management public lands within the NEMO Planning Area

[5] Endemic to DEVA Class I = Entire distribution occurs within the boundary of the former Death Valley National Monument

TABLE C-4: LISTED AND PROPOSED PLANTS WITHIN DEATH VALLEY NATIONAL PARK

PLANT SPECIES		LISTING STATUS		CNPS	CNPS RED CODE	HABITAT	DISTRIBUTION	THREATS	IMPORTANCE OF NEMO TO LONG-TERM CONSERVATION OF THE SPECIES
Common Name	**Scientific Name**	**Federal**	**State**	**CNPS**					
shining milk-vetch	*Astragalus lentiginosus* var. *micans*	Proposed Threatened		1B	3-2-3	Desert dunes forming dense clumps along the lower slopes of mobile dunes. +/- 3050–3100 ft elev.	Northern Mojave Desert (Eureka Valley). More strongly perennial, with longer hairs than similar plants of the variety *'variabilis.'*	Trampling, OHV / ORV[1] use, noxious weed invasion (Russian thistle).	The entire known range of this variety is within the planning area.
Spring loving centaury	*Centaurium namophilum*	Threatened	NV Critically Endangered				Eastern Mojave Desert, Ash Meadows. (According to Jepson, all are apparently *C. exaltatum*). Has been recorded at DEVA.[2]		
July gold	*Dedeckera eurekensis*	BLM SS	CA Rare	1B	2-1-3	Mojavean desert scrub; limestone outcrops, on rocky ridges, cliffs, talus slopes, and sometimes in washes, restricted to carbonate soils, restricted to Bonanza King Formation dolomite and Polet Formation limestone. 4000–7200 ft elev.	Ten disjunct occurrences in the Last Chance, Inyo, White and Panamint Mountains (Inyo County, CA). Locations is rocky canyons west of Saline Valley, especially Hunter Canyon; also found on Owen's Valley slopes. Has been recorded at DEVA and BLM.[3]	Mining, OHV / ORV use, small hydroelectric development, possibly collecting for firewood.	
Ash meadows sunray	*Enceliopsis nudicaulis* var. *corrugata*	Threatened	NV Critically Endangered	4	1-1-1	*E. nudicaulis* is found in Great Basin scrub, Mojavean desert scrub, stony hillsides and canyons, calcareous substrates. 3100–6600 ft elev.	*E. nudicaulis* is uncommon. White and Inyo Mountains, desert mountains to ID, UT, northern AZ. Also in Last Chance Mountains.		

PLANT SPECIES		LISTING STATUS		CNPS	CNPS RED CODE	HABITAT	DISTRIBUTION	THREATS	IMPORTANCE OF NEMO TO LONG-TERM CONSERVATION OF THE SPECIES
Common Name	**Scientific Name**	**Federal**	**State**	**CNPS**					
rock lady	*Maurandya petrophila*	BLM SS	CA Rare	1B	3-2-3	Mojavean desert scrub, limestone crevices of canyons, narrow steep canyon walls within limestone crevices, shaded from afternoon sun. 3600–5000 ft elev.	Northern Mojave Desert, Titus, Fall Canyons, Death Valley region, Inyo County.		
Eureka Dunes evening primrose	*Oenothera californica* ssp. *eurekensis*	Endangered	CA Rare	1B	3-2-3	Desert dunes (away from slopes), generally with *Psorothamnus polydenius*. 2950–3950 ft elev.	Northernmost Mojave Desert (Eureka Valley). Populations are few but large. Known from fewer than five occurrences in the Eureka Dunes.	Trampling, occasional off-road driving, noxious weed invasion (Russian thistle).	
Eureka Valley dunegrass	*Swallenia alexandrae*	Endangered	CA Rare	1B	3-2-3	Desert dunes; active desert dunes. 2900–4000 ft elev.	White and Inyo Mountains (Eureka Valley in northeastern Inyo County). The only known populations in the world are in the Eureka Dunes. Only four populations are known all in southern Eureka Valley in relatively deep sand.	Unauthorized OHV / ORV use and other unmanaged recreational dune use.	The total range of the species is within the planning area.

STATUS EXPLANATIONS

Federal

BLM SS = BLM Sensitive Species = Sensitive species are those designated by a State Director, usually in cooperation with the State agency responsible for managing the species as sensitive. They are those species that are: (1) under status review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary; or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats.

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California

List 1B = Plants Rare, Threatened, or Endangered in California and elsewhere

List 2 = Plants Rare, Threatened, or Endangered in California, but more common elsewhere

List 3 = Plants about which we need more information--a review list

List 4 = Plants of limited distribution--a watch list

CNPS RED CODE

R (Rarity)

1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time

2 = Distributed in a limited number of occurrences, occasionally more if each occurrence is small

3 = Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported

E (Endangerment)

1 = Not endangered

2 = Endangered in a portion of its range

3 = Endangered throughout its range

D (Distribution)

1 = More or less widespread outside California

2 = Rare outside California

3 = Endemic to California

[1] OHV/ORV = Off-highway vehicle, off-road vehicle

[2] DEVA = Death Valley National Park

[3] BLM = Bureau of Land Management public lands within the NEMO Planning Area

APPENDIX D: NATIONAL PARK SERVICE BIOSPHERE RESERVE PROGRAM

NATIONAL PARK SERVICE BIOSPHERE RESERVE PROGRAM

STATEMENT OF BROOKS B. YEAGER, DEPUTY ASSISTANT SECRETARY FOR POLICY AND INTERNATIONAL AFFAIRS, DEPARTMENT OF THE INTERIOR, BEFORE THE HOUSE COMMITTEE ON RESOURCES REGARDING, H.R. 883, THE AMERICAN LAND SOVEREIGNTY PROTECTION ACT.

MARCH 18, 1999

Mr. Chairman, members of the Committee, thank you for the opportunity to appear before you today to present the views of the Department of the Interior on H.R. 883, the American Land Sovereignty Protection Act. The chief effect of this legislation would be to place cumbersome and unwise restrictions on U.S. participation in the World Heritage Convention and other international conservation agreements. Ironically, these agreements were, in many cases, the product of U.S. world conservation leadership and have been supported by Presidents of both parties going back to President Nixon. Through them, the United States has been successful in engaging many other nations of the world in the effort to establish and protect national parks and to better conserve unique and important natural and cultural resources worldwide. The restrictions on participation and the burdensome new requirements of H.R. 883 appear to be a response to worries that these agreements in some way diminish U.S. sovereignty over our own parks and refuges – but nothing could be further from the truth. Because the restrictions of H.R. 883 are unnecessary, and would unwisely weaken the worldwide conservation leadership and influence that the United States has earned, we must strongly oppose this bill. If this legislation were to pass, the Secretary of the Interior would recommend a veto.

U.S. participation in the World Heritage Convention and other international conservation agreements has benefited parks and adjacent communities and has been helpful to U.S. foreign policy objectives. Both the idea of national parks and the World Heritage Convention, originating a century apart, are American ideas that are universally acclaimed and accepted worldwide. Their international acceptance is a continuous affirmation of the United States' prestige and global influence. U.S. participation in international conservation agreements insures that these ideals continue to extend their reach and also that U.S. sites receive the prestige and recognition they deserve, on par with that enjoyed internationally by the Great Pyramids of Egypt, Victoria Falls, the Serengeti Plain, and Vatican City.

World Heritage designation does not impose any particular new management requirements; it often presents new opportunities. In Hawaii, the World Heritage designation of Hawaii Volcanoes National Park is serving as the linchpin in a strategy to draw more tourists to the island, and is an element of the town of Volcano's strategic planning. At Wrangell-St. Elias and Glacier Bay, two parks that are listed jointly with Canadian parks across the border, World Heritage designation has resulted in direct cooperation with Canada on mountain rescue, managing traffic, and rescue operations on the Alsek River. The Reagan administration recognized the value of such designations when it chose to highlight one of its major initiatives in private-sector fundraising for parks -- the restoration of the Statue of Liberty -- by nominating the Statue to the World Heritage List in 1984.

H.R. 883 attempts to fix alleged problems that do not exist. American sovereignty is not at risk. First, international agreements, such as the World Heritage Convention, do not in any way exclude Congress from exercising oversight of land management decisions, nor could they ever do so. Second, the nomination processes for the various international conservation designations are generally consultative and are based on conservation measures already in place at the local level. Third, land-use decisions

pertaining to internationally recognized sites remain the sole responsibility of the sovereign nation in which the site is located. In the United States, such decisions fall under the jurisdiction of the appropriate federal, state, or local governments, tribes, or private property owners, and are subject to the domestic laws already in place.

The designation of sites under the World Heritage Convention and other such agreements has no more effect on national law in the U.S. or elsewhere, than does the winning of a Nobel Prize or an Olympic Medal. The United Nations does not gain any authority to dictate land-management decisions in any country or at any level. This Administration has no intention to cede sovereignty over U.S. lands to international organizations; neither did the five previous administrations, both Republican and Democratic, which have all participated enthusiastically in the international conservation agreements targeted by this bill.

Nor is there any evidence that international recognition restricts land use or stops economic growth. To the contrary, World Heritage sites, U.S. Biosphere Reserves, and Ramsar designations have been embraced in many local areas of the U.S. as value-added designations, which increase partnerships among federal, state and local governments, and private property owners for mutual benefit. Additionally, they have contributed to increases in tourism, which is especially vital to local economies, and have fostered research on important environmental problems.

Rather than being harmful to local and community interests, a World Heritage designation appears to be economically beneficial to those near designated sites, especially an attraction for foreign tourists. During the period 1990-1995, visitation to U.S. World Heritage parks increased 9.4%, as opposed to a 4.2% increase for all national parks. There is evidence to suggest that a significant part of the increase derived from increased international tourism; World Heritage designation makes it more likely that foreign visitors, especially those with specialized interests, will learn about and visit the parks.

For example, Wrangell-St. Elias National Park reports that an increase in foreign visitation from Europe, currently at 10%, may be due to its World Heritage designation. Grand Canyon National Park, where foreign visitation is roughly 40%, reports that foreign visitation is more likely as a result of a World Heritage designation than to an individual nation's "national park" designation. Given that the total economic benefit of the Grand Canyon to the surrounding region is estimated at $350 to $700 million per year, the impact of the World Heritage designation is clearly salutary there.

H.R. 883

H.R. 883 would unduly restrict the legal and administrative framework for implementation of important U.S. commitments to international environmental cooperation, which have traditionally enjoyed bipartisan support in Congress and the Executive Branch. It would also allow those who oppose cooperative efforts in international conservation on ideological grounds to block the efforts of communities to utilize these agreements for their own benefit. Section 3 of the bill would amend the National Historic Preservation Act of 1966, as amended, to require express authorization by Congress of each future nomination of Federal sites for inclusion in the World Heritage List. It would also instruct the Secretary of the Interior to object to the inclusion of any property (including private lands) in the U.S. on the List of World Heritage in Danger, absent authorization by a Joint Resolution of Congress. Section 4 would establish a similar congressional authorization process for biosphere reserve designations. It would prohibit the nomination of new biosphere reserves for international recognition under UNESCO and void the designation of all existing biosphere reserves unless authorizing legislation is passed by December 31, 2000. The bill unnecessarily encumbers what are

now modest, grass roots-based programs that fulfill our commitment to environmental stewardship in the world.

The amendments to the National Historic Preservation Act, that would be made under Section 3, would require the Secretary of the Interior to make a determination of any adverse effects on commercially viable uses should an area be nominated as a World Heritage site or be placed on the List of World Heritage in Danger. The adverse effects must be considered for lands being nominated or listed and also for all lands within 10 miles of the area. However, since designating an area as a World Heritage site or listing it as "in danger" does not change U.S. law, nor impose land-use restrictions, the designation cannot adversely affect commercially viable uses. Also, sections 3 and 4 of the bill set additional reporting requirements for all areas that have been recognized as World Heritage Sites or Biosphere Reserves. This is a burdensome and unnecessary requirement and flies in the face of recent congressional action to eliminate unneeded reports to Congress.

With respect to the legal effect of the World Heritage Convention, the Congressional Research Service said in its May 3, 1996 report, "World Heritage Convention and U.S. National Parks," that: "The Convention has no role or authority beyond listing sites and offering technical advice and assistance." The clear understanding that the Convention carries no land management authority or obligation goes back to President Nixon's statement on the issue.

The case of "biosphere reserves" established in connection with UNESCO's Man and the Biosphere program similarly admits no international control of U.S. lands. Indeed, the charter document for the UNESCO program clearly states that, "Biosphere Reserves, each of which remain under the sole sovereignty of the State where it is situated and thereby submitted to State legislation only, form a world network in which participation by States is voluntary." (As used in this quote the word "State" refers to sovereign nations.)

World Heritage

The World Heritage Convention, a foreign policy initiative of the Nixon Administration, has been a cornerstone of U.S. international environmental foreign policy for a quarter century. The U.S. played a notable leadership role in drafting the Convention and was the first signatory in 1973. The Senate ratified the Treaty by a margin of 95-0. Although 156 nations now participate, the U.S. has continued its leadership role, twice serving as chair, and currently completing a second consecutive 6-year term on the World Heritage Committee.

It is noteworthy that, although the Reagan Administration chose to withdraw the United States from UNESCO, that Administration opted to remain active in World Heritage and promulgated the program regulations, still in force, that made the program fully operative in the U.S. Under President Bush, in 1992, Secretary of the Interior Manuel Lujan hosted the meeting of the World Heritage Committee, in Santa Fe, New Mexico, the second time in the Committee's more than 20 years of active work that it met in the U.S.

Under the World Heritage Convention, each nation nominates its own most important natural and cultural sites and agrees to take the necessary steps to preserve and protect them under its own legal systems. In fact, a nation can only nominate a site within its own border and no nation can nominate a site in another nation. The treaty, implementing legislation, and program regulations mandate a process that is orderly, predictable, and exacting, requiring a minimum of more than two years between the proposal of a site for study and its consideration by the World Heritage Committee.

The U.S. nomination process is completely voluntary and clearly delineated in law and regulation (Title IV of the Historic Preservation Act Amendments of 1980 and 36 CFR Part 73). Under the regulations, the National Park Service staffs the Interagency Panel on World Heritage, which is advisory to and chaired by the Assistant Secretary for Fish and Wildlife and Parks. The Panel meets in public sessions to consider proposed nominations and to review completed studies. Proposals to nominate sites have originated from private organizations and citizens and local governments as well as from park superintendents. Every proposed nomination must have a strictly defined boundary. The criteria and documentation requirements for nomination are highly selective; many proposed properties have been turned down or deferred for cause. Relevant committees of the House and Senate are notified of all pending proposals and again informed when the Department has decided to nominate a property. Over the years, when Members of Congress have commented on proposed sites, they have overwhelmingly supported proposed nominations in their respective states. This existing congressional input has worked very well. No site has been nominated if its nomination did not enjoy overwhelming support from both local leaders and the State's congressional delegation.

Since 1979, when Yellowstone and Mesa Verde were placed on the World Heritage List, 18 other U.S. sites have been added, for a total of 20. A handful of others have been nominated but not listed. No new proposed nominations are being actively considered. The World Heritage Committee, composed of representatives elected from 21 member countries, reviews all national nominations. At present, 582 properties have been listed. The Committee also places properties on the List of World Heritage in Danger. Only the Committee can place properties on either List. Neither listing as a World Heritage Site nor inclusion on the List of World Heritage in Danger supersedes or diminishes United States sovereignty. Neither imposes any legal requirement for U.S. sites beyond those already contained in U.S. law. The World Heritage Committee does not acquire management authority over World Heritage Sites by virtue of any listing.

The U.S. World Heritage nomination process is fully respectful of private property rights. Affirmative concurrence is required from all non-federal owners before properties can be nominated for inclusion on the World Heritage List. The two private U.S. properties on the World Heritage List are Monticello and Taos Pueblo. Three other properties in the United States or Puerto Rico are on the World Heritage List. These are the University of Virginia in Charlottesville, Virginia owned by the Commonwealth of Virginia and Cahokia Mounds and La Fortaleza in San Juan, Puerto Rico owned by the Commonwealth of Puerto Rico. The nominations for all these sites enjoyed the full support of all relevant stakeholders.

U.S. Biosphere Reserves

Though the Department of the Interior plays a leading role for the U.S. under the World Heritage Convention, it plays a cooperative role in our participation in the Man and the Biosphere Program. As with World Heritage Sites, the designation and management of U.S. Biosphere Reserves provide benefits from international recognition, and allow U.S. sites to be linked to a global network for cooperation in science, education, and technical assistance. Recognition does not pose a threat to the sovereignty of American lands, it does not impose new management requirements on public lands, and it does not impose new land-use or regulatory restrictions on private property owners. In addition, designation does not imply any intent on the part of the federal government to acquire property in the surrounding area.

There are 47 designated biosphere reserves in the United States. Biosphere reserves represent purely voluntary commitments on the part of land managers to emphasize conservation, science and education as they seek solutions to issues of conservation and development in cooperation with local

residents, governments, and other parties in their region. The purposes of these associations are to facilitate the discovery of practical solutions to complex conservation and development problems by providing a science-based framework for pursuing common goals. This cooperative setting allows each party to share resource and economic expertise that no one group could obtain on its own. Biosphere reserve recognition is proposed by local entities, in consultation with local governments and other interested parties. Approval by landowners, public and private, is required. As a matter of practice, when such proposals appear to have been developed without sufficient local consultation, or where local opposition is obvious, they have been returned with guidance regarding the need for local support.

Mammoth Cave is a good example of this program. The Mammoth Cave Area Biosphere Reserve was designated in 1990 and includes Mammoth Cave National Park and its primary groundwater recharge basins. The Barren River Area Development District (BRADD), which is chartered by the Commonwealth of Kentucky and is responsible for regional planning within the ten-county area surrounding Mammoth Cave, selected the U.S. biosphere reserve model as the tool to address regional water quality issues. The biosphere reserve activities are coordinated through the BRADD, whose Board of Directors is made up of locally elected officials, and is viewed as a locally managed effort rather than a federal undertaking. To coordinate resource management activities, the BRADD established a Biosphere Reserve Council which consists of Western Kentucky University, USDA Forest Service, USDA Farm Service Agency, USDA Natural Resource Conservation Service, Tennessee Valley Authority, U.S. Economic Development Administration, Army Corps of Engineers, agencies of the Kentucky Natural Resources Cabinet, the Resource Conservation and Development District, the Caveland Sanitation District, and the National Park Service. Together, these previously unlikely partners have made significant accomplishments that have directly benefited the area. These accomplishments include:

The Mammoth Cave Area Water Quality Project - A partnership approach to protecting the Mammoth Cave Watershed, which includes significant financial resources available to farmers from the USDA on a cost-sharing basis, significant investment by the NPS for monitoring, and support from the EPA to continue this effort.

Regional GIS/GPS and Development of a Geospatial Data Center - Members of the Biosphere Reserve Council have pooled their resources to enhance data sharing and analysis capability and to establish a geographic information system and global positioning base station which has a variety of applications of benefit to all members. Additionally, a grant from the U.S. Geological Survey has established a Geospatial Data Center at Western Kentucky University.

Economic Development and Impact Studies - The Economic Development Administration funded a study in the area to assess the potential for compatible industrial development. The results of this study have been made available to the community to assist in economic and infrastructure planning. Also, the USGS in partnership with local universities is working on an economic impact study of the park and local area to assess the impact of tourism expenditures.

The Mammoth Cave Area Biosphere Reserve, with the national park as its core protected area, has therefore utilized its stature to better address local conservation and development issues, including securing additional financial resources not previously available. Landowners and communities have derived tangible benefits and received recognition for working together to resolve complex conservation and development issues and protect resource values. A survey of biosphere reserve managers in 1995 suggests that, in cases where their cooperative endeavors are identified explicitly

with the biosphere reserve concept, there are more cooperating parties and more participation of local organizations than in other types of cooperative efforts.

Biosphere Reserves are also important internationally because they provide a network of protected areas, particularly essential as stopovers for migratory birds that U.S. shares with other nations. For example, Mexico's newly created Sian Ka'an Biosphere Reserve in the Yucatan Peninsula provides wintering habitat for species seen during the summer in the United States, many of which are in decline because of habitat loss. Each year more than 65 million Americans watch and feed birds and more than 25 million Americans travel away from their homes specifically to watch birds. These bird-watching Americans spend $5.2 billion annually, generating an annual total economic return to the U.S. economy of nearly $20 billion. U.S. citizens also are frequent visitors to internationally recognized sites of other countries. American businesses directly benefit from this visitation of U.S. citizens to foreign countries, as they operate tour companies that frequent biosphere reserve sites abroad.

Ramsar

Finally, Section 5 of the bill restricts international agreements in general with respect to the nomination, classification or designation of federal lands for conservation purposes. This general language will have a detrimental effect on the United States ability to provide world leadership in environmental conservation efforts. Specifically, it will hamper the U.S. ability to implement the Ramsar Convention on Wetlands, an international agreement submitted by President Reagan in 1986, that recognizes the vital role wetlands play in local communities for water quality, migratory bird habitat and aesthetic and recreational enjoyment.

Designations of appropriate sites as "wetlands of international importance" under the Ramsar Convention have been a positive force for conservation of these sites. Since the Convention was ratified in 1986, 17 sites have been designated, all at the request of the local communities where the sites occur. The U.S. Fish and Wildlife Service, the agency which oversees the Ramsar Convention, does not actively seek out and designate Ramsar sites, one of the reasons that the implementation of the Convention in the United States has been successful without major controversies. The Service considers educating and informing citizens about the Convention a starting point; then the genesis of a nomination must begin with the community. This approach sparks interest by citizens, helps bring a community together, and builds support for a nomination. Sometimes it can develop partnerships between unlikely groups. Citizens take pride in their special places and international recognition can only improve this pride.

A number of States and local communities have used designation as a means of enhancing locally based conservation and economic efforts. A review conducted by the Fish and Wildlife Service in 1996 found a number of positive values from Ramsar designations, all as a result of the voluntary, cooperative spirit in which designations are made. For example, the New Jersey Department of Environmental Protection noted that Ramsar designation has been used as a non- regulatory tool to achieve wetland protections, and found a significant increase in tourism to designated sites, increasing local revenue. On the Lower Connecticut River, the State of Connecticut found that their designation of the lower Connecticut River wetlands complex as a Ramsar site has had a positive impact upon property values. Realtors are actively using this designation to attract buyers to abutting properties and the sale prices for these lands have increased. The State expects to see a positive impact on the tax base for Connecticut River townships from the Ramsar designation. And in Southern Illinois, the local communities are depending on the Ramsar designation of the unique cypress and tupelo swamps on the Cache River to help draw tourists and improve the economic viability of this depressed region.

Policy and guidelines for nomination of sites to the List of Wetlands of International Importance was published in a Federal Register Notice dated April 12, 1990, Vol. 55, No. 77. This action was taken in accordance with the articles of the Convention. These guidelines are needed to (1) assure that petitions for listing are consistent with the Convention's criteria and obligations, and (2) allow mechanisms for appropriate review of proposed site nominations. It is important to note that Article 2, Part 3, of the Convention document specifically states "the inclusion of a wetland in the List does not prejudice the exclusive sovereign rights of the Contracting Party in whose territory the wetland is situated."

The Fish and Wildlife Service will continue its policy to consider proposed sites only if: 1) there is concurrence from the State, Commonwealth, or Territory where the site is located; 2) the ownership rights of the lands being considered are free from encumbrances or dispute; and 3) the lands are in public or private management that is conducive with the conservation of wetlands. In all cases where private lands are involved, endorsement of a potential listing by the landowners is mandatory. In addition, the Fish and Wildlife Service has made it a requirement for all nominating organizations to provide written approval from the appropriate member(s) of the Congressional Delegation.

The Administration believes that the requirement under H.R. 883 that would require Congressional approval for listing sites under the Convention on Wetlands would substantially delay the benefits which designation of sites under the Convention can bring and would make the process much more time-consuming and bureaucratic. It would also remove the locally driven designation process and replace it with a prescriptive federal process if the entire Congress would have to approve every designation. Why should a member from New York be able to deny a Ramsar designation from a community in Texas that is seeking the designation? On the other hand, the required approvals from any private property owner(s), the State, Commonwealth, or Territory in which the property resides, and the Congressional delegation, should ensure that citizens directly effected by a designation are supportive and make a formal Congressional approval process unnecessary.

Conclusion:

International site recognitions such as World Heritage and U.S. Biosphere Reserves do not threaten U.S. sovereignty or interests. Rather, they enhance the prestige and recognition of areas already protected under domestic law and provide economic benefits to communities that benefit from being internationally recognized. The "national park" idea was something inherently American that has been extended internationally through these programs; to inhibit them would be a disservice to this idea in the United States and would diminish U.S. influence abroad. We strongly believe that the United States should continue to play a leading role in these worldwide efforts that benefit the citizens and the environment of both our nation and of the entire world.

This concludes my prepared remarks.

APPENDIX E: PRINCIPLES FOR WILDERNESS MANAGEMENT IN THE CALIFORNIA DESERT

PRINCIPLES FOR WILDERNESS MANAGEMENT IN THE CALIFORNIA DESERT

A Response to Transition Task # 28

Develop a consistent management policy for DOI in managing California Desert Wilderness.

CHAPTER I. SECURING AN ENDURING RESOURCE OF WILDERNESS

It is the intent of the Federal land managers of the California Desert to secure for the American people of present and future generations an enduring resource of wilderness, composed of those Federal lands in the California Desert designated by Congress as "wilderness areas."

The California Desert Protection Act designated 69 new wilderness areas, approximately 3.6 million acres, primarily administered by the Bureau of Land Management. Three of the wilderness areas are partially managed by the U.S. Forest Service, comprising approximately 100,000 acres. The National Park Service now administers 3.9 million wilderness acres in three units of the National Park System. The Fish and Wildlife Service gained 9,000 acres of wilderness in two refuges.

Wilderness areas shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness. The areas designated by Congress as wilderness in the California Desert are to be managed to retain their "...primeval character and influence, without permanent improvements or human habitation,...protected and managed so as to preserve ... natural conditions."

Wilderness designation generally provides the most protective form of Federal land management requiring difficult decisions to ensure that the intent of the Wilderness Act is met: "to preserve...natural conditions," and "outstanding opportunities for solitude or a primitive and unconfined type of recreation." Where the Wilderness Act, or any other law, including the California Desert Protection Act, makes any exceptions to the general prohibitions in the Wilderness Act, the managers undertake to implement such exceptions consistently, judiciously and thoughtfully. Where wilderness characteristics of primeval character have been degraded, the managers pledge to restore the area, where feasible, to a condition, that "...generally appears to have been affected primarily by the forces of nature."

Lastly, the managers will commit to develop common procedures that apply to all wilderness areas managed by each Federal agency, to the greatest extent legally permissible.

CHAPTER II. THE WILDERNESS ACT AND SPECIFIC PROHIBITIONS

The Wilderness Act (16 U.S.C. 1133(c)) specifically prohibits certain activities on wilderness lands, no matter which Federal agency administers the lands. Federal agencies, by regulation and policy, may not permit such activities on their lands, except for the special provisions of the Wilderness Act or other statutes.

The Wilderness Act specifically prohibits:

*commercial enterprises;
*permanent roads;
*temporary roads;
*motor vehicles;
*motorized equipment;
*motorboats;
*landing of aircraft;
*any form of mechanical transport, and
*structures or installations.

Note that the above prohibitions do not apply to those who possess "existing private rights" e.g. valid mining claims, inholdings or rights-of-way within wilderness. "Existing private rights" is the first, and major, exception to the Wilderness Act prohibitions and this exception applies to the wilderness areas in the California Desert. Other exceptions are discussed in Chapters III and IV.

In addition to the Wilderness Act prohibitions, Federal agencies may impose other prohibitions on Federal lands that are within wilderness under each agency's specific statutory authorities. It is a fundamental premise of the Wilderness Act that the designation of Federal lands as "wilderness" does not remove the lands from the National Forest System, public lands or National Refuge System, National Park System, or from the laws and agencies that govern those systems (16 U.S.C. 1133(a)).

CHAPTER III. MINIMUM REQUIREMENTS FOR ADMINISTRATION OF THE AREA

The Wilderness Act provides a second major exception to the prohibitions listed in Chapter II. The Wilderness Act at 16 U.S.C.1133(c) states that "except as necessary to meet minimum requirements for the administration of the area for the purposes of this Act (including measures required in emergencies involving the health and safety of persons within the area) there shall be no temporary road, no use of motor vehicles, motorized equipment, or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation..." Note that the "minimum requirement" exception can never be used to allow a commercial enterprise or a permanent road in a wilderness area. A backcountry patrol station, fire lookout, a radio repeater, a helicopter rescue of an injured person, or a chainsaw may all be permitted in a wilderness only if such use is determined through a documented decision process, such as NEPA, to be the "minimum requirement for the administration of the area" for wilderness purposes.

Federal land managing employees often speak of "minimum tool." That term is shorthand for this provision of the Wilderness Act and applies only to agency administrative activities for wilderness.[1]

There has been a disparity between Federal agencies on applying the exception of "minimum requirements for the administration of the area for the purpose" of wilderness. The decision to permit administrative activities that are the minimum requirements remains the decision of each unit manager. However, the Desert managers, through collective communication, will build on a foundation of good decisions that protect both physical resources and the wilderness character of the area.

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[1] Federal agencies also seek to govern activities by those who possess "private existing rights" in wilderness (e.g. a right-of-way holder) or an authorized user (e.g. a grazing allottee) under the "minimum tool" policy. Strictly speaking, the prohibitions in 16 U.S.C. 1133(c) DO NOT APPLY to those with "private existing rights" within designated wilderness. However, the agencies are nonetheless obligated to permit the exercise of "private existing rights" so as to minimize the damage to Federal wilderness areas. It is in this context that use of the term "minimum tool" must be understood.

CHAPTER IV. SPECIAL PROVISIONS IN THE WILDERNESS ACT

Congress incorporated into the 1964 Wilderness Act several "special provisions," or exceptions. Since the 1964 Wilderness Act involved only national forest lands, the exceptions were originally applicable only to national forest wilderness areas. The "special provisions" are:

*aircraft or motorboat use where they were established (16 U.S.C. 1133(d)(1));
*measures for control of fire, insects and diseases (16 U.S.C. 1133(d)(1));
*conduct of mineral surveys (16 U.S.C. 1133(d)(2));
*location of mining claims until the end of 1983 (16 U.S.C. 1133(d)(3));
*continued mineral leasing until January 1, 1984 (16 U.S.C. 1133(d)(3));
*water project development with Presidential approval (16 U.S.C. 1 133(d)(4));
*continuation of existing grazing (16 U.S.C. 1133(d)(4));
*retention of state authority over wildlife management (16 U.S.C. 1133(d)(7);
*guarantee of adequate access to non-federal lands surrounded by wilderness (16 U.S.C. 1134(a)), and
*customary ingress and egress to mining claims and other occupancies surrounded by wilderness (16 U.S.C. 1134(b)).

Several of the above "special provisions" apply specifically to wilderness in "national forests." Others of the "special provisions" apply to the Secretary of Agriculture. The exceptions that apply to "national forest" wilderness and to the Secretary of Agriculture also apply to wilderness managed by the BLM under the terms of the Federal Land Policy and Management Act. (FLPMA) at 43 U.S.C. 1782(c).

Individual acts establishing wilderness in National Park System units, including the California Desert Protection Act at Section 603, contain language that is similar to the following:

> The wilderness areas designated by this Act shall be administered by the Secretary of the Interior in accordance with the provisions of the Wilderness Act governing areas designated by that Act as wilderness areas, and where appropriate, any reference in that Act to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

The Associate Solicitor, Conservation and Wildlife, wrote to the NPS Director on February 26, 1975 stating that "... an (NPS wilderness) act containing this language causes Wilderness Act sections" that apply to the Secretary of Agriculture "...to be made applicable to the (National Park System) area designated as wilderness." However, the memo explains that special provisions applicable to "national forest" wilderness are not applicable to national park system wilderness. See the chart on the next page for applicability of each "special provision."

1964 WILDERNESS ACT (Public Law 88-577)
Table 1

EXCEPTIONS TO PROHIBITIONS OF WILDERNESS ACT	CITATIONS	BLM	FS	FWS	NPS
To meet the minimum requirements for the administration or area Including emergencies involving health/safety of persons.	4(c)	*	*	*	*
Aircraft or motorboat use, where established	4(d)l	*	*	*	*
Control fire, insects, and diseases	4(d)l	*	*	*	*
Gathering information about mineral or other resources	4(d)2	*	*		
Claim location, mineral leasing until 12/31/83 or designation	4(d)3	*	*		
Federal water projects allowed by the President	4(d)4(1)	*	*		
Grazing of livestock, where established, may continue	4(d)4(2)	*	*		
Boundary Water Canoe Area	4(d)5		*		
Commercial Services for wilderness purposes	4(d)6	*	*	*	*
Neutral with regard to State Water law	4(d)7	*	*	*	*
Neutral with regard to State wildlife jurisdiction	4(d)8	*	*		
Adequate Access to private and State lands	5(a)	*	*		
Ingress and egress to claims	5(b)	*	*		

CHAPTER V. THE SPECIAL PROVISIONS OF THE CALIFORNIA DESERT PROTECTION ACT AND THEIR EFFECT UPON WILDERNESS

Each unit of the National Wilderness Preservation System is governed by the laws that govern the national forests, national wildlife refuges, national parks or public lands and by the Wilderness Act. Finally, each wilderness area is ultimately governed by the provisions of the Act that established the area as wilderness.

The California Desert Protection Act, Titles I, II, and VI, designate wilderness areas to be administered by the BLM, Forest Service, Fish and Wildlife Service and the NPS. The Act contains several provisions that apply to wilderness. Some of the provisions do not apply equally to all wilderness created by the Act. Others of the provisions are applicable to all wilderness.

Some of the provisions are unique in the history of wilderness designations by Congress. The chart on the following page lists the provisions of the California Desert Protection Act that affect wilderness in the California Desert.

CALIFORNIA DESERT PROTECTION ACT OF 1994 (Public Law 103-433)
Table 2

General Provisions	BLM Wilderness	FS Wilderness	FWS Wilderness	NPS Wilderness	Non-wilderness Portions of Park Units		
					Death Valley NP	Joshua Tree NP	Mojave Preserve
Management under Wilderness Act	103(a)	103(a)	201(b)	603			
Maps and legal descriptions	103(b)	103(b)	201(c)	602	304	404	504
Livestock Grazing	103(c)	103(c)	103(c)	306, 510	306		510
Buffer Zones	103(d)	103(d)					
Fish and Wildlife Jurisdiction	103(e)	103(e)					
Fish and Wildlife Management	103(f)	103(f)					
Law Enforcement	103(g)	103(g)					
Colorado River dams			202				
Colorado River Upper Basin	203	203	203	203	203	203	203
No Reserved Water Rights in Colorado River			204				
Withdrawal Under Mining Law	103(a)	103(a)		305/405/ 507	305	405	507
Mineral Validity Examinations				509			509
Utility Rights-of-Ways						406	511
Land Tenure Adjustment Priority	702	702	702	702	702	702	702
Native American Uses & Interests	705(a)	705(a)	705(a)	705(a)	705(a)	705(a)	705(a)
Federal Reserve Water Rights	706	706	706	706	Implicit water rights		
State School Lands Exchange	707	707	707	707	707	707	707
Access for Inholdings	708	708	708	708	708	708	708

CHAPTER VI. STATEMENT OF AGREEMENTS

We the undersigned managers agree to:

1. The Principles enunciated herein as guiding the management of wilderness in the California Desert;

2. To review and give individual attention to each proposed annex to these Principles that addresses wilderness and other management issues;

3. To authorize the wilderness task force to meet with other task forces to craft procedures which minimize impacts to wilderness resources.

SIGNATURES

Manager, California Desert District	9/15/95 DATE
Manager, Yuma District	9/15/95 DATE
Superintendent, Mojave National Preserve	9/15/95 DATE
Superintendent, Death Valley National Park	9/15/95 DATE
Superintendent, Joshua Tree National Park	9/15/95 DATE
State Supervisor, U.S. Fish & Wildlife Service	9/15/95 DATE

PRINCIPLES GOVERNING GRAZING ON THOSE PORTIONS OF ALLOTMENTS WITHIN WILDERNESS

I. INTRODUCTION

The California Desert Protection Act provides, at Section 103(c), that livestock grazing established prior to the Act shall be permitted to continue within Bureau of Land Management wilderness areas subject to reasonable regulations, policies and practices.

Section 103(c) reinforces this direction by prescribing that such regulations, policies and practices conform to Section 101(f) of the Arizona Wilderness Act (P.L. 101-628).

Sections 306 and 510 of the Act authorize the continuation of grazing privileges "at no more than the current level" on the "lands" added to the National Park System in Death Valley National Park and Mojave National Preserve. Such grazing is to be governed by "applicable laws and National Park Service (NPS) regulations." The authorization of existing grazing on the "lands" in these National Park System units provided for continued grazing without regard as to whether these "lands" are wilderness or non-wilderness within the two units. Thus, grazing may continue, where it now exists, at no more than the current level, on both the wilderness and non-wilderness lands within Death Valley National Park and the Mojave National Preserve.

II. PRINCIPLES

1. TRANSPORTATION:

   a. Each non-emergency entry by motorized vehicle or mechanized transport into wilderness must be approved by the Authorized Officer.

   b. The Authorized Officer may pre-approve a list of scheduled motorized vehicle or mechanized transport entries into wilderness.[1]

   c. Motorized vehicle or mechanized transport use in wilderness will normally only be permitted to those portions of the wilderness where they had occurred prior to the area's designation as wilderness.

   d. Each emergency motor vehicle or mechanized transport entry must be reported to the Authorized Officer beforehand, if possible, or by close of business on the next working day. Phone notification is sufficient, if followed up in writing.

   e. "Emergency" access for purpose of entry, as provided for, in Section 101(f) of P.L. 101-628, exist where there is imminent danger of loss of livestock, severe facility damage, an injured person requiring transport, or life threatening situation involving one or more persons.

   f. Mechanized transport includes, but is not limited to, any wheeled vehicle.

   g. Entry by foot or by animal needs no prior approval, unless required by regulations (for example, commercial activities or organized groups).

[1] Such pre-approvals may be specified for certain routes, means, frequencies and purposes. Such pre-approvals may provide for "occasional" motorized vehicle or mechanized transport use. Such use is not to be routine.

2. MOTORIZED EQUIPMENT

   a. Use oil motorized equipment in wilderness (e.g. chain saws, augers, battery operated equipment, etc.) must be approved by the Authorized Officer.

   b. The Authorized Officer may pre-approve a list of scheduled motorized equipment use in wilderness.[2]

   c. Motorized equipment use in wilderness will normally only be permitted in those portions of the wilderness where they had occurred prior to the area's designation as wilderness.

3. NEW STRUCTURES AND INSTALLATIONS

   FOR NPS

   a. Construction of new range facilities (e.g. wells, pipelines, troughs, windmills, fences, cabins) in wilderness will be permitted only where it serves the purpose of natural and/or cultural resource protection.

   FOR BLM

   a. Construction of new range facilities in wilderness should primarily serve the purpose of resource protection.

4. REPLACEMENT OF EXISTING STRUCTURES AND INSTALLATIONS

   a. The Authorized Officer may approve the replacement of existing range facilities in wilderness.

   b. Such replacement generally should be of facilities "in kind."[3]

   c. Replacement of existing facilities in wilderness, where they are visible (i.e. above ground) shall be with natural materials, if the use of natural materials does not impose "unreasonable additional costs" on the permittee.

5. MAINTENANCE OF STRUCTURES AND INSTALLATIONS

   a. Maintenance of existing operational facilities requires approval of the Authorized Officer only if use of motorized vehicle, mechanized transport or motorized equipment is necessary.

6. ABANDONMENT OF FACILITIES

   a. The permittee will remove all facilities located in wilderness that the permittee either constructed, or made use or made use of, but which are now abandoned.

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[2] Such pre-approvals may be specified for certain areas, tools, frequencies and purposes.

[3] For example, a 20' windmill should not be replaced with a 35' windmill; or a one room line shack by a four room ranch house.

SIGNATURES

Manager, California Desert District — DATE 9/15/95

Manager, Yuma District — DATE 9/15/95

Superintendent, Mojave National Preserve — DATE 9/15/95

Superintendent, Death Valley National Park — DATE 9/15/95

DEFINING MINIMUM REQUIREMENTS FOR ADMINISTERING WILDERNESS AREAS WITHIN THE CALIFORNIA DESERT

INTRODUCTION

As directed by Congress, it is the intent of the Federal Land Managers of the California Desert to secure for the American people of present and future generations an enduring resource of wilderness in the wilderness areas designated through the California Desert Protection Act of 1994. To ensure these areas are managed as directed by Congress, Section 4(c) of the Wilderness Act prohibits nine activities on those wilderness lands. Subject to specific exceptions, the Wilderness Act stipulates that there will be no commercial enterprise, no permanent road, no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any wilderness area. Actions that do not incorporate any of these nine Wilderness Act prohibitions are beyond the scope of this Annex.

The Wilderness Act provides a major exception to seven of the nine prohibitions listed in Section 4(c) of the Act. This Section states that "*...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation...*" This statutory direction is hereafter called the "**minimum requirements for administration**" exception. The "minimum requirements for administration" exception cannot be used to allow commercial enterprise nor a permanent road. A backcountry patrol station, fire lookout, radio repeater, or chainsaw may be allowed in a wilderness if such use is determined, through a **"Minimum Requirement Analysis,"** to be the "minimum requirements for administration" for the wilderness purpose.

This Annex is intended to clarify management direction and reduce disparity between Federal agencies when applying the "minimum requirements for administration" exception in managing wilderness areas. The decision to approve or deny administrative activities or uses that are the "minimum requirements for administration" remains with each unit manager. However, the Desert Managers, through collective communication will build on a foundation for quality decisions that protect both the physical resources and the wilderness character of the area.

This Annex provides general guidance in determining the use of the "minimum requirements for administration" exception for activities and uses within wilderness. Other annexes, adopted by the Desert Managers, address more specifically the use of the "minimum requirements for administration" determinations for specific circumstances.

The "minimum requirements for administration" exception of the Wilderness Act applies **only to agency administrative activities** for wilderness. Agency activities include such things as using motorized equipment to construct trails, issuing research permits, granting contracts for facilities in wilderness, signing of MOUs for actions normally prohibited in wilderness, etc. Part A of this Annex provides the direction for managing under these circumstances and applying the "Minimum Requirement Analysis."

For activities by those who possess "existing private rights" in wilderness (e.g., a right-of-way holder), for activities specifically provided by the Wilderness Act, or for activities specifically provided by the California Desert Protection Act, Federal agencies should cooperatively seek to administer for those

rights using "minimum tool" concepts. The prohibitions found in Section 4(c) of the Wilderness Act (listed previously) and the "minimum requirements for administration" exception **do not apply** to "existing private rights" nor to "authorized uses" within designated wilderness. Nonetheless, Federal Land Managers should attempt, when administering for such rights or uses, to minimize impacts on the wilderness resource. Part B of this Annex provides direction for applying the "minimum tool" concept and for using a **"Minimum Tool Analysis"** (distinct from the "Minimum, Requirement Analysis" described in Part A) to administer authorized uses and accommodate existing private rights.

PART A. PRINCIPLES FOR AGENCY ADMINISTRATIVE ACTIVITIES

Part A addresses the use of the Section 4(c) "minimum requirements for administration" exception and the use of the "Minimum Requirement Analysis." This exception authorizes Federal Land Managers to employ temporary roads, use motor vehicles, use motorized equipment or motorboats, land aircraft, employ mechanical transport, and create structures or installations **only if** such activities or uses are "*...necessary to meet minimum requirements for the administration of the area for the purpose* [emphasis added] *of this* [Wilderness] *Act...*" It is therefore imperative that Federal Land Managers ensure that application of this exception is for that purpose. The purpose of wilderness, as defined in Section 2(a) of the Act, is "*... to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States ... leaving no lands designated for preservation and protection* ***in their natural condition*** [emphasis added]..." Furthermore, wilderness is defined in Section 2(c) of the Act as being "*... an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions...*" Each Federal Land Manager must apply the following principles when employing the "minimum requirements for administration" exception for agency administrative activities.

1. Each Federal Land Manager who manages wilderness is responsible for administering the wilderness area for the purpose of the Wilderness Act.

2. Each Federal Land Manager is responsible for ensuring that any of the seven prohibited activities or uses occur only when necessary to accomplish the "minimum requirements for administration" of the area as wilderness. (Note: this would not apply for exceptions being made under special provisions in the 1964 Wilderness Act or CDPA or for existing private rights).

3. If a proposed administrative action would use one or more of the seven prohibited activities or uses identified in Section 4(c) of the Wilderness Act, a "Minimum Requirement Analysis" must be completed. This analysis will include a two step process:

    a. Step one: An analysis of whether the "minimum requirements for administration" exception is appropriate, that is, whether the action is indeed an agency action necessary for the minimum administration of the wilderness area.

    b. Step two: If the action is necessary for wilderness administration, an analysis of whether the techniques used to accomplish the action art the least degrading to wilderness characteristics.

(Note: this "Minimum Requirement Analysis" would not apply for exceptions being made under special provisions in the 1964 Wilderness Act or CDPA or for existing private rights).

4. If a proposed agency activity is necessary for the administration of the wilderness area for the purpose of wilderness (defined above) and involves one or more of the normally prohibited actions in 4(c) of the Wilderness Act, then the "Minimum Requirement Analysis" must determine and evaluate, at a minimum:

    a. Whether the proposed agency activity is consistent with existing statutes, regulations, policies, and plans;

    b. Whether the proposed agency activity would involve any prohibited use listed in Section 4(c) of the Wilderness Act;

    c. Whether the proposed agency activity involving a prohibited act could, be reasonably accomplished outside of the wilderness area(s); and

    d. Whether the proposed agency activity could be reasonably accomplished without use of the action(s) prohibited by the Wilderness Act.

5. In determining what is reasonable, the Federal Land Manager will:

    a. Identify alternatives that do not involve any of the prohibited acts in Section 4(c) of the Wilderness Act;

    b. Not be guided solely by cost, convenience, or efficiency, but may consider time and cost effectiveness;

    c. Analyze impacts on the wilderness characteristics (e.g., naturalness, opportunities for solitude or primitive and unconfirmed recreation, and special features) and resources of each alternative, and;

    d. Determine whether the proposed agency activity, or alternatives not involving any of the prohibited acts, could safely and feasibly accomplish both the objective of the proposed activity and the objective of wilderness management.

6. If the decision involves a normally prohibited act under section 4(c), the accompanying "Minimum Requirement Analysis" should contain a clear and compelling justification for use of the prohibited act(s) necessary to implement the decision and necessary to manage the wilderness area.

7. The "Minimum Requirement Analysis" should specify the conditions that will mitigate adverse effects of the actions) on wilderness characteristics.

8. A Federal Land Manager may prepare a programmatic document that covers a specific management activity involving a prohibited act in wilderness, which recurs on a regular basis (e.g., maintenance of a defined hiking trail system using chainsaws).

9. Federal Land Managers should employ minimum impact or light-on-the-land management techniques in wilderness, even if the project (e.g., using low level helicopter flights to corral burros) does not involve any oil the prohibited acts at Section 4(c). Even though such actions are not specifically prohibited by the Wilderness Act and do not require a "minimum requirements

administration" exception, agencies should still consider how best to accomplish the goal with minimal impacts to wilderness character.

10. Other Annexes address emergency situations provided for in law involving health and safety of persons and responses to fire and crimes in which prior analysis may not be feasible.

PART B. PRINCIPLES FOR THE ADMINISTRATION OF AUTHORIZED USES AND ACCOMMODATION OF EXISTING PRIVATE RIGHTS

Part B addresses the administration of authorized uses provided for in the Wilderness Act and/or the California Desert Protection Act and addresses, the accommodation of existing private rights. Authorized uses are summarized in Tables 1 and 2 of the *Principles for Wilderness Management in the California Desert.* Examples of existing private rights could include rights-of-way, valid mining claims, etc. While activities in connection with these authorized uses or existing private rights are not governed by the "minimum requirements for administration" exception to the prohibited acts, the Federal Land Manager will administer or accommodate for such activities to minimize impacts on the wilderness character and resource, and under the conditions prescribed for that activity in law and regulation. To minimize impacts on the wilderness characteristics, the following are the principles the Federal Land Manager must apply to ensure the appropriate "minimum tool" is determined.

1. Each Federal Land Manager who manages wilderness is responsible for administering authorized uses and accommodating existing private rights provided for in law.

2. Each Federal Land Manager who manages wilderness will ensure that the exercise of rights or authorized uses in wilderness, that require an action normally prohibited in Section 4(c) of the Wilderness Act, are carried out only after the Federal Land Manager issues an authorization (e.g., a permit).

3. Authorization will be issued only after completing a "Minimum Tool Analysis." This analysis must consider:

    a. Whether the proposed use would involve any normally prohibited activity listed in Section 4(c) of the Wilderness Act;

    b. Whether the proposed use is specifically provided for in the Wilderness Act or in the California Desert Protection Act;

    c. Whether the proposed use is necessary for the conduct of the authorized use or for the exercise of the existing private right;

    d. Whether the proposed use could be reasonably accomplished outside of the wilderness area(s); and

    e. Whether the proposed use could be reasonably accomplished without use of the action(s) normally prohibited by the Wilderness Act.

4. Authorizations should contain reasonable provisions to reduce the impact on wilderness character. These provisions may include, for example, conditions on the travel routes, methods, means, or frequencies, conditions on the use by season, time of day, or duration, or conditions on the size or

type of equipment, structure or installation. Such provisions shall be consistent with the expressed Congressional intent applicable to that activity.

5. Federal Land Managers should encourage the use of minimum impact or light-on-the-land management techniques within wilderness whenever possible.

SIGNATURES

Superintendent, Mojave National Preserve	8/27/98 DATE
Superintendent, Death Valley National Park	9/16/98 DATE
Superintendent, Joshua Tree National Park	9-8-98 DATE
Superintendent, Lake Mead National Rec. Area	9/3/98 DATE
District Manager, California Desert District	10-1-98 DATE
Field Manager, Ridgecrest Field Office	10/8/98 DATE
Field Manager, Barstow Field Office	8-27-98 DATE
Field Manager, Needles Field Office	10/27/98 DATE
Field Manager, Palm Springs/South-Coast Field Office	10/29/98 DATE
Field Manager, El Centro Field Office	10/29/98 DATE
Field Manager, Yuma Field Office	11/10/98 DATE
Field Manager, Lake Havasu Field Office	11/27/98 DATE

Diane K. Noda — 11/13/99

Field Supervisor, Ventura Fish & Wildlife Office — DATE
U.S. Fish & Wildlife Service, Region One

Sheri L. Barrett — 11/20/99

Assistant Field Supervisor, Carlsbad Fish & Wildlife Office — DATE
U.S. Fish & Wildlife Service, Region One

APPENDIX F: TERM AND CONDITIONS OF A SPECIAL USE PERMIT FOR GRAZING LIVESTOCK

These terms and conditions, and the Special Use Permit, apply only to those portions of the grazing allotment which lie within Death Valley National Park.

1. The terms and conditions specified in the lease of permit issued by the Bureau of Land Management, that governed grazing on the _____ allotment on October 30, 1994, are the terms and conditions of this permit, except as such terms and conditions may be modified herein.

2. For purposes of this permit, any reference to the "Authorized Officer" in the terms and conditions of the BLM permit existing on October 30, 1994 shall mean the Superintendent of Death Valley National Park, or his or her designee, and any reference to the "Bureau," or "BLM" shall mean the "Bureau of Land Management."

3. The permit shall operate under the general guidance of the Allotment Management Plan (AMP) in effect on October 30, 1994 as amended by the Bureau of Land Management in a Grazing Decision of June 10, 1994. From time to time, the National Park Service, after consultation with the permittee, may modify the AMP as new information is available regarding livestock carrying capacity, analysis of monitoring data, status of range improvements, and general grazing management.

4. All or a portion of the permit can be temporarily suspended by the National Park Service due to drought, fire, flood, or other natural or man-made catastrophe, or to facilitate installation, maintenance or modification of range improvements. When monitoring shows grazing use is causing an unacceptable pattern of use or use exceeds carrying capacity, or when use is not in conformance with prescribed resource goals and objectives as or the biological opinions of the U.S. Fish and Wildlife Service, or the legislative directions, regulations and policies of the National Park Service, the Superintendent shall modify grazing use. In making modifications the Superintendent will follow the terms and conditions, both above and below, notably number three above. When grazing has been temporarily reduced, the unused portion of the permit shall be set aside until the NPS determines that full grazing use can resume.

5. The Authorized Officer may modify existing terms or add additional terms and conditions to this permit, as needed. Before making such modifications, the Authorized Officer will consult with and provide opportunity for comment from the permittee concerning modifying the existing terms or prescribing any added terms. The Authorized officer will notify the permittee of the modification or addition of terms and conditions sixty (60) calendar days prior to adoption of the new or modified term or condition.

6. This permit to graze is attached to the base property identified as such in the AMP and permit in effect on October 30, 1994. For the purposes of this permit, "base property" means the same as the term is defined in 43 CFR 4100.0-5.

7. Under section 306 of the California Desert Protection Act, the permittee may convey to the United States the base property to which this grazing preference is attached. The grazing preference provided by this permit will be terminated upon conveyance of the base property to the United States.

8. If the permittee disposes of base property to which this grazing preference is attached, by sale, gift, will, or otherwise, to a party other than the United States, the acquiring party must apply for a new permit within ninety days IF that party intends to continue grazing under the permit. If the acquiring party intends to continue grazing, then such an applicant must be engaged in the livestock business, must own or control (by contract) the base property and cattle and must submit a legal description and record of ownership or control of the base property. The acquiring party shall accept the terms and conditions of the permit with such modifications as the applicant may request which are approved by the authorized officer. Any other terms and conditions that may be needed will be worked according to the provisions in number three above. An applicant who is not otherwise qualified and who has gained this permit by testamentary disposition must meet the qualifications herein within two years of gaining the base property.

9. Should a third party acquire the base property to which this grazing preference is attached, that party may elect to discontinue grazing, and the Authorized Officer will then cancel such grazing preference and not reissue it.

10. The permittee may dispose of this grazing preference to a third party and, retain title and/or control of the base property to which the grazing preference is attached. The acquiring party may use the grazing preference only if so qualified under condition #8 above, or the party may elect to discontinue use under condition #9 above. The NPS will not issue a new grazing preference to the permittee who retains the base property but disposes of the existing preference that is attached to that base property under this permit.

11. The Authorized Officer may approve the transfer of this permit from one base property owned or controlled by the permittee to another base property owned or controlled by the same permittee.

12. A permittee may apply for, and the Authorized Officer may grant, conservation use of the permit, during which period the permittee will refrain from exercising the privilege of grazing under this permit.

13. Range improvements shall be installed, used, maintained, modified or removed from NPS lands in a manner consistent with grazing management practices. Prior to installing and/or modifying range improvements on NPS lands, the permittee will submit a request to, and obtain the consent of the Authorized Officer. The Authorized Officer, after compliance with the National Environmental Policy Act and other applicable statutes, will notify the permittee in writing, of the decision on a request to install or modify a range improvement. Upon the Authorized Officer's approval of the range improvement, the permittee and the NPS will enter into an agreement describing construction and maintenance responsibilities for the approved project. Any range improvement, or portion thereof, owned by the permittee on October 30, 1994 remains the property of the permittee. Any range improvements constructed under this permit will belong to the United States, EXCEPT for those improvements, or portions thereof that are financed by permittee funds.

14. Range improvements shall be designed, constructed, and maintained under NPS standards and stipulations adapted from the standards currently used by the BLM. In the event the permit is transferred, all range improvements necessary to maintain the permit will be transferred from the permittee to the qualified applicant (See #8). Range improvements cannot be removed from NPS lands without authorization from the Authorized Officer. The Authorized Officer may require the permittee to remove range improvements that conflict with NPS resource management objectives, USFWS biological opinions or with AMP goals.

15. If the Authorized Officer cancels this permit, in whole or in part, or so alters its terms and conditions as to prevent or hamper the use of a range improvement, the permittee, at the discretion of the Authorized officer, may receive reasonable compensation for the adjusted value of their interest in the range improvement including interest in those improvements constructed prior to this permit or, in lieu of such compensation, the Authorized Officer may decide to authorize the permittee to remove the improvement and salvage all materials used as part of the improvement.

16. The permittee is responsible for control and management of his or her livestock while using the permit. The permittee shall comply with State requirements for branding livestock, breed, grade, and number of bulls, health, and sanitation. The Authorized Officer may require counting or tagging of animals to promote orderly grazing administration. The brand and other identifying marks found on the cattle are to be filed with the Authorized Officer prior to each grazing year. Where a permittee does not own the cattle which graze on the permit, the management lease (or pasture agreement) that gives the permittee control must be immediately filed with the Authorized Officer.

17. Permit fees may be refunded if the permittee files for a refund prior to the period of adjusted use. A service charge will be assessed for each transfer of grazing permit and additional billing except for those initiated by the NPS. A service charge shall reflect processing costs and shall be adjusted periodically as costs change.

18. Grazing use will be based on long-term sustainable forage yield and current forage conditions. Grazing use will be in accordance with the current AMP, biological opinions, and NPS resource management conditions, goals and objectives. Each grazing year starts on November 20 and concludes on the following June 30.

19. Pursuant to longstanding NPS policy, all water diverted to, or used on, Federal lands within an NPS unit by the United States or its permittees, will be perfected in the name of the United States. This provision applies only to the use of water, rights to which are established after the October 31, 1994 passage of the California Desert Protection Act of 1994. Water rights established under California State law, prior to October 31, 1994, by an existing or previous permittee, and to which the current permittee holds title or ownership, remains the property of the permittee. Water rights on private lands that were developed in the past, or that may be developed in the future, remain as private property rights.

20. The permittee shall not engage in any of the following practices:

    a. Violation of any term or condition of this permit, either as issued, or as subsequently modified by the NPS.
    b. Transfer of this permit, in whole or in part, to any other person without NPS approval.
    c. Construction, replacement or alteration of a range improvement without NPS approval, or failure to remove a range improvement as directed by NPS.
    d. Disturbance of any ground on Federal land without first obtaining permission from the NPS, except for minor emergency repairs with the use of hand tools.
    e. Subleasing. "Subleasing" means the same as the term is defined in 43 CFR 4100.0-5.
    f. Grazing livestock without an NPS permit.
    g. Grazing livestock in excess of numbers authorized by this permit.
    h. Cutting, burning, spraying, destroying or removing vegetation without NPS approval.
    i. Littering.

j. Knowingly or willfully making a false statement or representation in grazing applications, range improvement applications, cooperative agreements, actual use reports and/or amendments thereto.
k. Violating State livestock board requirements relating to branding of livestock, breed, grade, number of bulls, and health and sanitation requirements.
l. Placement of supplemental feed, as defined in 43 CFR 4100.0-5, without NFS approval.
m. Violation of any Federal, State or local law relating to conservation and protection of natural or cultural resources or environmental quality.

21. This permit is subject to cancellations or suspension, in whole or in part, with 60 days notice to the permittee by the Authorized Officer, for failure to pay fees, conduct in violation of any provision in terms and conditions #3, 13, 16, and 20 where necessary to fulfill obligations imposed upon law, regulation or policy, or for reasons determined by the NPS Director.

22. The permittee may appeal a decision made under the terms and conditions of this permit to the Regional Director, Pacific West Region, National Park Service, 600 Harrison Street, Suite 600, San Francisco, CA 94017-1372. Such an appeal must be filed in writing with 30 calendar days after the date of notification to the permittee of the action or decision complained of. The terms and conditions of this permit remain in effect during the appeal process. The permittee may appeal a decision of the Regional Director to the NPS Director, Washington, D.C., within 30 calendar days after receipt of notice of the Regional Director's decision. The appeal to the NPS Director will be the final administrative appeal under this permit.

WILDERNESS APPENDIX

The special terms and conditions of this Wilderness Appendix apply only to those portions of the grazing allotment which lie within designated wilderness areas of Death Valley National Park.

1. TRANSPORTATION:

    a. Each non-emergency entry by motorized vehicle or mechanized transport into wilderness must be approved by the Authorized Officer (Park Superintendent or designee).
    b. The Authorized Officer may pre-approve a list of scheduled motorized vehicle or mechanized transport entries into wilderness.
    c. Motorized vehicle or mechanized transport use in wilderness will normally only be permitted to those portions of the wilderness where they had occurred prior to the area's designation as wilderness.
    d. Each emergency motor vehicle or mechanized transport entry must be reported to the Authorized Officer beforehand if possible, or by close of business on the next working day. Phone notification is sufficient, if followed up in writing.
    e. An "emergency," for purpose of entry, exists where there is imminent danger of loss of livestock, severe facility damage, an injured person requiring transport, or a life-threatening situation.
    f. Mechanized transport includes, but is not limited to, any wheeled vehicle.
    g. Entry by foot or by animal needs no prior approval, unless required by regulations (for example, commercial activities or organized groups).

2. MOTORIZED EQUIPMENT:

    a. Use of motorized equipment in wilderness (e.g., chain saws power augers, battery operated equipment, etc.) must be approved by the Authorized Officer.
    b. The Authorized Officer may pre-approve a list of scheduled motorized equipment use in wilderness.
    c. Motorized equipment use in wilderness will normally only be permitted in those portions of the wilderness where they had occurred prior to the area's designation at wilderness.

3. NEW STRUCTURES AND INSTALLATIONS
   Construction of new range facilities (e.g., wells, pipelines, troughs, windmills, fences, cabins) in wilderness will be permitted only where the Authorized Officer determines that the facility serves the purpose of natural and/or cultural resource protection.

4. REPLACEMENT OF EXISTING STRUCTURES AND INSTALLATIONS
    a. The Authorized Officer may approve the replacement of existing range facilities in wilderness.
    b. Such replacement generally should be of facilities "in kind."
    c. Replacement of existing facilities in wilderness, where they are visible (i.e., above ground) shall be with natural materials if the use of natural materials does not impose "unreasonable additional costs" an the permittee.

5. MAINTENANCE OF STRUCTURES AND INSTALLATIONS
   Maintenance of existing operational facilities requires approval of the Authorized Officer only if use of motorized vehicle, mechanized transport or motorized equipment is necessary.

6. ABANDONMENT OF FACILITIES
The permittee will remove all facilities located in wilderness that the permittee either constructed, or made use of, but which are now abandoned.

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ACRONYMS AND GLOSSARY

ACEC: Area of Critical Environmental Concern

adaptive use: A new use for a structure or landscape other than the historic use, normally entailing some modification of the structure or landscape.

affected environment: The existing biological, physical, cultural, social, and economic conditions of an area that are subjected to both direct and indirect changes, as a result of actions described within alternatives under consideration.

air quality: A measure of health and visibility-related characteristics of air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

allotment: An area of public land designated and leased by the BLM for grazing livestock.

alternatives: A reasonable range of options that can accomplish an agency's objectives.

animal unit month (AUM): The amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month.

archeological resources: Any material remains or physical evidence of past human life or activities which are of archeological interest, including the record of the effects of human activities on the environment. Such resources are capable of revealing scientific or humanistic information through archeological research.

area of critical environmental concern (ACEC): Places within the BLM public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural or scenic values, fish and wildlife resources, other natural systems or processes or to protect life and safety from natural hazards.

B

backcountry camping: Camping at undeveloped locations in the preserve outside designated day use only areas.

biodiversity: Or biological diversity, includes genetic diversity within species, species diversity within a community, and diversity in a full range of biological communities. An area is considered biologically diverse when it includes rich and stable populations of native species that are naturally distributed across the landscape.

BIA: Bureau of Indian Affairs

Bureau of Land Management (BLM): An agency of the Department of the Interior that is responsible for managing public lands.

C

Caltrans: California Department of Transportation

CCC: Civilian Conservation Corps

CDCA: California Desert Conservation Area

CDF&G: California Department of Fish and Game

CDPA: California Desert Protection Act

California Desert Protection Act of 1994 (CDPA): The California Desert Protection Act established the Mojave National Preserve, added acreage to and redesignated Death Valley and Joshua Tree national monuments as national parks, and established 69 wilderness areas on BLM-managed public lands.

CNPS: California Native Plant Society

concessioner: A private commercial entity that conducts business under contract with the National Park Service that may provide food, lodging, retail, recreation, and other services to park visitors.

cooperative management (agreement): A negotiated agreement between two or more entities to achieve specific management objectives.

cooperative ecosystem studies units (CESUs): The National Park Service has entered into national cooperative agreement with several universities to operate cooperative ecosystem studies units (CESU) on campuses to promote research and educational activities in parks.

Council on Environmental Quality (CEQ): The President's Council on Environmental Quality was established by the National Environmental Policy Act NEPA and is the agency responsible for the oversight and development of national environmental policy.

critical habitat: Habitat approved in the *Federal Register* as critical for a particular listed species under section 4 of the Endangered Species Act. (1) The specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features (a) essential to the conservation of the species and (b) which may require special management or protection (2) Specific areas outside the geographical area occupied by the species at the time it is listed that are considered essential to the conservation of the species.

cultural landscape: A geographic area (including both cultural and natural resources) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

cultural resource: An aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. Properties such as landscapes or districts, sites, buildings, structures, objects, or cultural practices that are usually greater than 50 years of age and possess architectural, historic, scientific, or other technical value. By their nature, cultural resources are nonrenewable.

cumulative effects (impacts): Effects on the environment that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or nonfederal) or person undertakes such actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

D

DCP: Development Concept Plan

degradation (natural resources): Refers to negative impact(s) to natural resources or natural processes. The impact may be singular or cumulative; the extent may be local or ecosystemwide. The term degradation is used broadly and may refer to: reduction in habitat size, reduction in extent of plant populations, declining species vigor exhibited as reduced population numbers, reduced reproductive success, increased mortality rates, and/or decreased percent of available habitat utilized.

DEIS: Draft Environmental Impact Statement

desert tortoise wildlife management area (DWMA): A series of reserves recommended by the Recovery Plan that provide areas for population recovery and delisting of the desert tortoise.

development concept plan (DCP): The National Park Service uses a development concept plan to bridge the gap between a general management plan and the preliminary construction and design drawings for a specific geographic area within the NPS boundaries. This is accomplished by providing greater detailed direction on options for development at a particular geographic area.

DOD: Department of Defense

DWMA: Desert Wildlife Management Areas

E

EIS: Environmental Impact Statement

environmental consequences: A section of an environmental impact statement that is the scientific and analytic basis for comparing alternatives. This discussion includes the environmental effects of the alternatives, any adverse effects that cannot be avoided, and short-term, long-term and cumulative effects.

environmental impact statement (EIS): A detailed statement required by the National Environmental Policy Act (NEPA) when an agency proposes a major action that significantly affects the quality of the human environment.

endangered species: Any species which is in danger of extinction throughout all or a significant portion of its range. These species are listed by the U.S. Fish and Wildlife Service.

Endangered Species Act of 1973 (amended) (ESA): The Endangered Species Act ensures that no federal action will jeopardize the continued existence of federally listed or proposed threatened or endangered species of plant or animal.

ephemeral range: Areas of the desert rangeland that do not consistently produce enough forage to sustain grazing cattle but may briefly produce unusual volumes of forage to accommodate cattle grazing.

ethnographic resources: A site, structure, object, landscape, or natural resource feature assigned legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

F

facilities: Refers to buildings, houses, campgrounds, picnic areas, visitor-use areas, operational areas, and associated supporting infrastructure such as roads, trails, and utilities.

Federal Land Policy and Management Act (FLPMA): Public Law 94-579, October 21, 1976. Often referred to as the BLM "Organic Act," which provides the majority of the BLM's legislative authority, direction, policy, and basic management guidance.

FEIS: Final Environmental Impact Statement

floodplain: Land on either side of a stream or river that is submerged during floods. Typically discussed in terms of 50, 100, or 500 year events.

> **100-year floodplain:** The land adjacent to a river corridor that would be covered by water during a 100-year flood event. A 100-year flood event has a 1% probability of occurring during any given year.

FLPMA: Federal Land Policy and Management Act

FWS: U.S. Fish and Wildlife Service

G

general management plan (GMP): The first tier plan for NPS units that provides overall broad management direction.

geographic information system (GIS): Specialized software and computers that convert map data and other resource information into digital files, allowing analysis of resource interactions and generation of computer drawn maps.

GPRA: Government Performance and Results Act

groundwater: All water found below the surface of the ground.

guzzler: A guzzler is a permanent self-filling water catchment. Most are similar to a cistern and are simple, low-maintenance devices that are essentially tanks filled by rain-collecting aprons (Giles 1971).

H

hazardous material: A substance or combination of substances that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise man-aged.

hazardous waste: Hazardous materials that no longer have practical use, such as substances that have been discarded, spilled, or contaminated, or that are being stored temporarily prior to proper disposal.

herd management area: Areas of public land which are managed by the Bureau of Land Management for wild horses and burros.

historic district: A geographically definable area, urban or rural, possessing a significant concentration, linkage or continuity of sites, landscapes, structures, or objects, united by past events or aesthetically by plan or physical developments. A district may also be composed of individual elements separated geographically but linked by association or history.

historic site: The site of a significant event, prehistoric or historic occupation or activity, or structure or landscape whether extant or vanished, where the site itself possesses historical, cultural, or archeological value apart from the value of any existing structure or landscape.

HMA: Herd Management Area

HML: Herd Management Level

HMP: Herd Management Plan

hydrology: A science dealing with the properties, distribution and circulation of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere.

I

Impacts: Effects, both beneficial and adverse, of an action on the human environment. Direct effects are those occurring at the same time and place as the action itself. Indirect effects occur later in time or are farther removed in distance from the action, yet are reasonably foreseeable.

Indian trust resources: Resources held in trust by the U.S. government for the benefit of Indian tribes.

Infrastructure: The various systems and facilities needed to support park operations and visitor services (e.g., sewer and water systems, electric systems, communication lines, roads and trails, and various support buildings).

Interpretation: Programs that support the mission of the National Park Service by assisting people in understanding, enjoying, and contributing to the protection of the park's natural, cultural, and scenic resources and dynamic processes. Interpretive programs include walks and evening programs, guided tours, formal education programs for school groups, exhibits, audiovisual productions, and publications.

L

land protection plan (LPP): A plan that provides general guidance for parks on addressing issues related to nonfederal lands and interests contained within the boundaries of park units.

LPP: Land Protection Plan

locatable minerals: Any valuable mineral that is not salable or leasable including gold, silver, molybdenum, tungsten, and uranium.

M

Minimum Tool Analysis: An analysis of "tools" or methods that might be utilized for a particular understanding in wilderness, whose purpose is to find the least impacting tool to accomplish the task

Mining in the Parks Act: Public Law 94-429 that was passed in September 1976, giving the National Park Service authority to regulate mining on all federal claims inside park units.

mitigation: An activity designed to avoid, minimize, rectify, reduce or compensate the severity of, or eliminate impacts from the proposed project. A mitigation measure should be a solution to an identified environmental problem.

museum collection: Objects, works of art, historic documents, and natural history specimens collected according to a rational scheme and maintained so they can be preserved, studied, and interpreted for public benefit.

N

National Environmental Policy Act of 1969 (NEPA): A law enacted on January 1, 1970 that established a national policy to maintain conditions under which humans and nature can exist in productive harmony and fulfill the social, economic and other requirements of present and future generations of Americans.

National Historic Landmark: A district, site, building, structure, landscape, or object of national historical significance, designated by the Secretary of the Interior under authority of the Historic Sites Act of 1935 and entered in the National Register of Historic Places.

National Historic Preservation Act of 1966 (NHPA): This act required federal agencies to give consideration to historic properties determined significant (properties listed on or determined to be eligible for the National Register of Historic Places) prior to expending funding for, authorizing, or licensing a federal project or permit.

National Natural Landmark Register: A program which seeks to identify and encourage the preservation of areas that illustrate the ecological and geological character of the United States.

National Park Service (NPS): An agency in the Department of the Interior responsible for protection and preservation of 379 natural and cultural units throughout the United States.

National Register of Historic Places: The comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state, and local significance in American history, architecture, archeology, engineering, and culture kept by the National Park Service under authority of the National Historic Preservation Act of 1966.

natural resources: Features and values that include plants and animals, water, air, soils, topographic features, geologic features, paleontological resources, natural quiet, and clear night skies.

NECO: Northern and Eastern Colorado Planning Effort

NEMO: Northern and Eastern Mojave Planning Effort

NEPA: National Environmental Policy Act

NHPA: National Historic Preservation Act

no-action alternative: An alternative in an environmental impact statement that continues current management direction. A no action alternative is a benchmark against which action alternatives are compared.

nonnative species: Species of plants or animals that do not naturally occur in a particular area and often interfere with natural biological systems. Also known as alien, introduced, or exotic species.

Non-point pollution sources: Pollutants that enter the environment from general non-contained locations. Examples of non-point sources are roadways, parking lots, and landscaped areas. Pollutants from these locations can include petrochemicals, heavy metals, and fertilizers.

Nonwilderness: Areas that have not been legislatively designated as wilderness areas.

P

paleoenvironment: Ancient environment.

patented mining claim: These claims are mining properties obtained under the 1872 Mining Law, where the owners have met the federal requirements to obtain title to the surface and subsurface estates. Mining on patented claims is subject to NPS regulations at 36 CFR Part 9A, the same as on unpatented claims.

perennial range: Refers to portions of a grazing permit or allotment where grazing is primarily on perennial plants (shrubs, cacti, biennial herbs)

petroglyph: An ancient picture, design, or indentation carved, abraded, or pecked into a rock surface.

pictograph: An ancient figure or design painted onto a rock surface.

plan of operations: A plan submitted by an operator in compliance with 36 CFR Part 9, which outlines in detail proposed mining development activities for agency review and analysis.

prescribed fire: Fires that are intentionally ignited under controlled conditions to meet management goals for natural resources and processes, wildland fire protection, and cultural resource preservation.

preservation (cultural resource): The act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape, or object. Work may include preliminary measures to protect and stabilize the property, but generally focuses on the ongoing preservation maintenance and repair of historic materials and features rather than extensive replacement and new work.

preservation (natural resource): The act or process of preventing, eliminating, or reducing human-caused impacts to natural resources and natural processes.

R

ranch developments: Structures that are installed to support ranching operations including: water tanks, windmills, pipelines, fences, cattleguards, corrals, etc.

record of decision (ROD): The public document following the preparation of a final environmental impact statement that reflects the agency's final decision, rationale behind the decision, and commitments to monitoring and mitigation.

rehabilitation (cultural resources): The act or process of making possible an efficient compatible use for a historic structure or landscape through repair, alterations, and additions while preserving the portions or features which convey the historical, cultural and architectural values.

rehabilitation (natural resources): All activities conducted to improve the quality or biologic function of an impacted natural resource. The term rehabilitation connotes a less extensive process than restoration. Site impacts may preclude a full restoration but project work is undertaken to enhance the extent or function of natural processes.

reserved water right: When the government reserves land for a preserve or other purposes, it also reserves, explicitly or by implication, enough unappropriated water at the time of the reservation as is

necessary to accomplish the purposes for which Congress or the President authorized the land to be reserved.

restoration (cultural): The act or process of accurately depicting the form, features, and character of an existing historic structure, landscape, or object as it appeared at a particular period of time, by removing modern additions and replacing lost portions of historic fabric, paint, or other elements.

restoration (natural): Work conducted to remove impacts to natural resources and restore natural processes, and to return a site to natural conditions.

revegetation: Replacement or augmentation of native plants in an area largely or entirely denuded of vegetation.

riparian areas: Areas that are on or adjacent to rivers and streams; these areas are typically rich in biological diversity.

right-of-way (ROW): An authorization provided that specifies the legal right of use, occupancy, or access across land or water areas for a special purpose or purposes.

roads (backcountry): Unmaintained routes of travel that have been established by repeated motorized vehicle use or were constructed using equipment to provide access to a remote site. These roads are often in unpredictable condition and usually require a high clearance or four wheel drive vehicle.

roadside camping: Camping in close proximity to a vehicle in previously disturbed sites along open routes of travel outside wilderness.

RS-2477: A revised statute under the Mining Act of 1866 that provided for the establishment of rights-of-way across public lands. Although repealed by Congress in 1976 with enactment of the Federal Land Policy and Management Act, valid rights-of-way for roads constructed on public lands before 1976 were not subject to the repeal.

S

Section 7 Consultation: Section 7 of the Endangered Species Act requires consultation with the U.S. Fish and Wildlife Service if the habitat of a threatened or endangered plant or animal may be affected by a federally authorized action.

Soda Springs/Zzyzx: A desert oasis located approximately ten miles south of Baker, California that has a long history of human use and has water sources that provide habitat for the endangered Mohave tui chub

State School Lands: Land owned and managed by the State Lands Commission for the benefit of the state. Sections 16 and 36 of each township were deeded to the state upon statehood. Some of these have since been sold or traded.

surface water: Water that naturally flows or settles on top of natural landforms and vegetation, often as rivers, springs, seeps streams, lakes, ponds, and other bodies of water.

T

threatened species: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. These species are listed by the U.S. Fish and Wildlife Service.

U

USFS: U.S. Forest Service

USGS: U.S. Geological Survey

unpatented mining claim:

V

visitor experience: The perceptions, feelings, and interaction a park visitor has in relationship with the environment.

W

Watershed: The region draining into a river, river system, or body of water.

Wetland: Areas that are inundated by surface or groundwater with a frequency sufficient to support, under normal circumstances, vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wild and Free-Roaming Horse and Burro Act of 1971: An act passed in 1971 that provides for management of wild and free roaming horses and burros on public lands. The Act applies to public lands managed by the BLM and the U.S. Forest Service.

Wilderness: Areas protect by provisions of the Wilderness Act of 1964. These areas are characterized by a lack of human interference in natural processes; generally there would be no roads, structures, installations, or use of motorized equipment.

WMP: West Mojave Plan: BLM-led planning effort focusing on multiple species conservation.

Z

Zzyzx: A desert oasis located approximately ten miles south of Baker, California at Soda Springs named by Curtis Springer.

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Death Valley National Park

Military Units
Park Boundary
Non-Federal Land
Private
Patented Mining Claims
State School
BIA

N
W E
S

National Park Service
Barstow, CA
170 | 20064
06/00 | MOJA

3 0 3 6 9 12 Miles

1:200,000

Nevada
California

Eureka Dunes
Scotty's Castle
Beatty
Stovepipe Wells
Furnace Creek
Panamint Springs
Devil's Hole
Death Valley Jct.
Shoshone
China Lake
Ridgecrest
Fort Irwin

To Las Vegas
(75 miles)

To Victorville
(75 miles)

To Baker
(25 miles)

267
374
95
190
373
127
178
395

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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