

STATEMENT FOR MANAGEMENT

MAY 1993

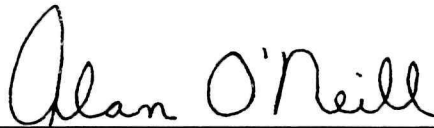


NATIONAL PARK SERVICE - U.S. DEPARTMENT OF THE INTERIOR

Definition

The Statement for Management (SFM) provides an up-to-date inventory of the park's condition and an analysis of its problems. It does not involve any prescriptive decisions on future management and use of the park, but it provides a format for evaluating conditions and identifying major issues and information voids.

Recommended by:



Superintendent,
Lake Mead National Recreation Area

Approved by:



ACTING

Regional Director
Western Region

TABLE OF CONTENTS

LOCATION	1
PURPOSE AND SIGNIFICANCE.....	3
INFLUENCES: INVENTORY AND ANALYSIS	5
LEGISLATIVE/ADMINISTRATIVE REQUIREMENTS AND CONSTRAINTS...	5
Enabling Legislation.....	5
Other Legislative and Administrative Requirements ...	9
EXISTING MANAGEMENT ZONING.....	17
RESOURCES.....	21
Geology/Soils.....	22
Minerals	23
Floodplains and Wetlands	23
Air Quality	24
Visual Quality	24
Water Resources	25
Ecological Communities	26
Threatened/Endangered and Candidate Species	28
Significant Natural Resources	30
Cultural Resources	33
WITHIN PARK LAND USE AND TRENDS.....	35
ADJACENT LAND USE	38
VISITOR USE ANALYSIS	40
RANGER ACTIVITIES.....	48
CONCESSIONS.....	48
PARTNERSHIPS.....	50
STATUS OF PLANNING	52
NPS FACILITIES.....	55
CONCESSION FACILITIES.....	62
MAJOR ISSUES	66
RECREATION USE	66
VISITOR SAFETY/PROTECTION IN HIGH VISITATION AREAS.....	67
ENTRANCE STATION/FEE COLLECTION	67
BURRO MANAGEMENT.....	68
COLORADO RIVER BRIDGE PROPOSAL	69
DRUG INTERDICTION.....	69
FLOOD MITIGATION.....	69
LAKE LEVEL FLUCTUATIONS.....	70
WATER RESOURCES.....	71
REPLACEMENT OF SUSTANDARD, DATED & INADEQUATE FACILITIES..	72
LOCATION OF COMMERCIAL FACILITIES ON PARK LANDS.....	73
CULTURAL RESOURCES.....	73
PLANNING.....	74
INTERPRETATION.....	74
NATURAL RESOURCES.....	75
DETERIORATING AIR QUALITY.....	76
INTERAGENCY COOPERATION.....	77
ADJACENT LAND USE.....	78
PARK OPERATIONAL SHORTFALL.....	79
RENEWAL OF CONCESSION CONTRACTS.....	79
MANAGEMENT OBJECTIVES.....	81
APPENDIX.....	98
Enabling Legislation	98
Concession Contracts.....	102
Cooperative Agreements	103

LOCATION

Lake Mead National Recreation Area (Lake Mead NRA) includes two reservoirs (Lakes Mead and Mohave) along 140 miles of the former Colorado River from the southern tip of Nevada to the northwest corner of Arizona. It contains portions of Clark County in Nevada and Mohave County in Arizona. Lake Mead NRA is located in the Second Congressional District of Nevada and the Third Congressional District of Arizona.

Lake Mead National Recreation Area is bounded on the north by the town of Overton, Nevada, the Virgin Mountains, and the Shivwits Plateau; on the east by Grand Canyon National Park and Bureau of Land Management (BLM) lands; on the south by Bullhead City, Arizona, and Laughlin, Nevada; and on the west by Boulder City, Nevada, the Eldorado Mountains and the Newberry Mountains. It is generally associated with Las Vegas, Nevada, which lies approximately 20 miles to the northwest.

The recreation area contains 1,501,216 acres of which 1,484,159 acres are in Federal ownership administered by the National Park Service and 12,568 acres are non-Federal lands. An additional 4,488 acres surrounding Hoover and Davis Dams are administered by the Bureau of Reclamation. Lake Mead NRA is the third largest unit of the National Park System outside the State of Alaska.

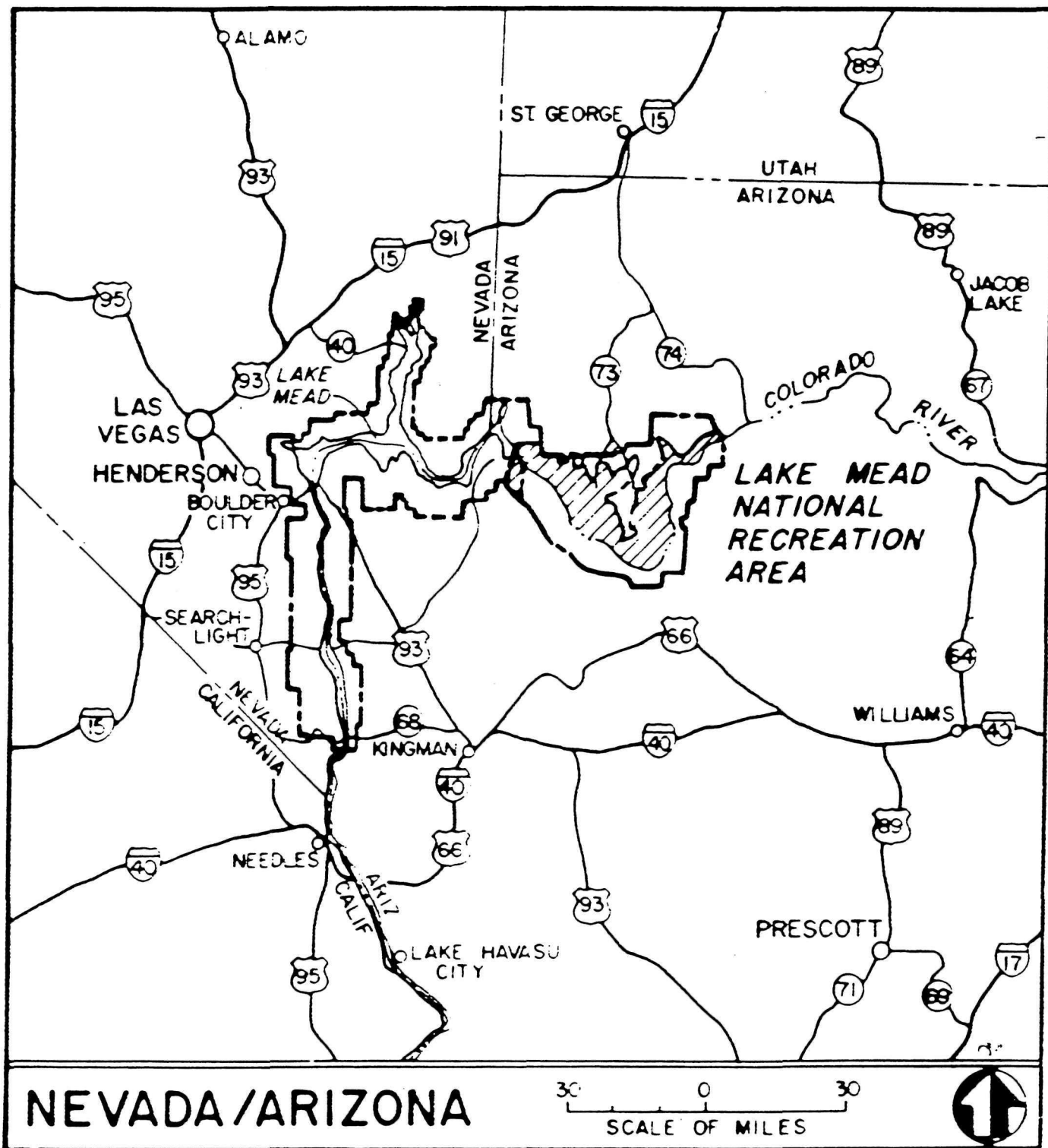
Federal Acreage by States are as follows:

Nevada (Clark County)	. . . 587,006 or 39.5 percent of the NRA
Arizona (Mohave County)	. . . 897,153 or 60.5 percent of the NRA

The area surrounding Lakes Mead and Mohave is rugged with deep canyons, dry washes, sheer cliffs and mountains. Improved access to the shore of the lakes is limited (see Region map).

Northshore Road (Nevada Route 167) provides access to the Callville Bay, Echo Bay and Overton Beach developed areas along the western edge of Lake Mead. Lakeshore Road (Nevada Route 166) is the most heavily used road in the park and provides access to the Alan Bible Visitor Center, Boulder Beach and Las Vegas Bay developed areas on the southwestern portion of Lake Mead.

U.S. Highway 95 on the west extends the length of Lake Mohave and spur roads provide access to the Cottonwood Cove developed area and to Eldorado Canyon overlook. A number of unimproved roads also provide access to the vast backcountry of the Eldorado and Newberry Mountains. On the east, U.S. Highway 93 provides the main transportation link with spur roads leading to Willow Beach on Lake Mohave and Temple Bar, South Cove and Pearce Ferry on the eastern portion of Lake Mead. Katherine Landing, at the southernmost end of Lake Mohave, is located just north of Davis Dam and is accessed by Nevada Highway 163 off U.S. Highway 95 and by Arizona Highway 68 off U.S. Highway 93.



The recreation area is located in one of the fastest growing regions of the United States. It is within a half-day drive of large metropolitan areas in Southern California and within a one-day drive of population centers in Utah and Arizona. These states provide the largest number of visitors to Lake Mead NRA from outside Nevada. A total of over 9.34 million visits were recorded in 1992.

Southern Nevada, Arizona, Southern California, and Southern Utah are major points of origin for many of the Lake Mead NRA water-based recreationists. However, the adjacent attractions of Las Vegas and Laughlin, Nevada, draw people from throughout the Nation, as well as international visitors, many of whom visit Lake Mead NRA while they are in the area. Concurrent with the expanding service industries in Las Vegas and Laughlin and with the trend of increasing population in the "sunbelt" states, Clark County, Nevada (which includes both Las Vegas and Laughlin) experienced a 36 percent increase in population between 1980 and 1990. Not included in these population figures are the seasonal "snowbird" visitors who spend a portion of the winter in this area. The pressures of increasing visitation and regional population growth have created numerous challenges for the future management of Lake Mead National Recreation Area, its resources and the opportunities for public recreational experiences.

PURPOSE AND SIGNIFICANCE

As stated in the enabling legislation of October 8, 1964, Public Law (P.L.) 88-639 (78 Stat. 1039), Lake Mead National Recreation Area was established for:

" . . . the general purpose of public recreation, benefit, and use, and in a manner that will preserve, develop, and enhance . . . the recreation potential and in a manner that will preserve the scenic, historic, scientific, and other important features of the area. . . "

Lake Mead National Recreation Area is the oldest and largest national recreation area in the National Park System. Lake Mead NRA contains a wide diversity of resources and constitutes extensive and superlative examples of the plants, animals and physical geography of the Colorado Plateau and the Basin and Range Provinces. From an elevation of approximately 517 feet at Davis Dam, the land rises to a height of 7,072 feet on the Shivwits Plateau. Annual rainfall varies from less than 5 inches on the low desert to more than 8 inches on the plateau.

While the area's very name conjures up an image of water, the land-based resources comprise 87.1 percent of the park's surface area and offer an exciting wealth of natural and cultural resources that enhance the attraction of the Colorado River and its impoundments - Lakes Mead and Mohave.

Lake Mead, formed by construction of the Hoover Dam completed in 1935, stretches 68 miles along the old Colorado River channel and over 25 miles up the Overton Arm to the confluence of the Muddy and Virgin Rivers. At full pool (1,221 feet elevation) it has a surface area of 157,900 acres of water with 822 miles of shoreline. Lake Mohave begins below Hoover Dam and continues 67 miles along the Colorado River channel to Davis Dam. At full pool (647 feet elevation) it has a surface area of 28,260 acres of water with 150 miles of shoreline.

Visitors to Lake Mead NRA find spectacular scenic vistas from the park roads, lake surface and non-structured walks. Striking backdrops for all recreational activities include deep canyons, dry washes, sheer cliffs, distant mountain ranges, the lakes, colorful soils and rock formations and mosaics of different vegetation.

Exposed within the boundaries of Lake Mead NRA are geological deposits spanning 1.7 billion years and representing the Basin and Range Province and the Colorado Plateau Province, the boundary between which may be seen at the Grand Wash Cliffs. The geological diversity is readily apparent even within the length of a 60-mile drive along the park's Lakeshore/Northshore scenic drive including the black lava-capped Fortification Hill, a 6- to 11-million-year-old volcano; the jagged peaks of the Black Mountains; the brilliant reds of the Aztec sandstone; the ancient strata that have been pushed up and tilted 90 degrees; the hot springs; and the weather-worn but colorful badlands-like terrain near Overton Beach.

Not so readily discernible are paleontological resources. Petrified wood and fossilized shells can be found at locations within Lake Mead NRA, and the remains of a mammoth over 10,000 years old have been found in the Overton Arm.

Complementing this geological diversity is the fact that Lake Mead NRA lies within the northeastern portion of the Mojave Desert, on the southern edge of the Great Basin Desert, and just north of the Sonoran Desert. As a result of this location and the interface of these deserts, Lake Mead NRA contains a surprising variety of plants and animals, such as the gila monster, ocotillo, palo verde and the smoke tree. These species are considered to be at the far reaches of their northern distributional range.

The diversity of the area is unique, varying from ponderosa pine and pinon-juniper forest on the Shivwits Plateau, to the Joshua tree forests near Pearce Ferry, to the riparian community along the desert washes, and to the creosote community throughout the western and central part of the recreation area. Within the various plant communities one may find the rare bear paw poppy and other beautiful flowering plants such as the beard's tongue,

ocotillo, hedgehog cactus, palo verde tree and a wide variety of annuals.

The various plant communities are home to a variety of mammals and reptiles. In addition to premier herds of desert bighorn sheep, Lake Mead NRA also supports populations of mule deer, coyotes, kit fox, bobcat, ringtail cat, beaver, desert tortoise, a variety of lizards and snakes, and a wealth of bird species, including the bald eagle, peregrine falcon, grebes, gulls, herons, and numerous resident and migratory species.

While at first glance the Lake Mead NRA region may seem to be a hostile land, man has known the secrets of this region for longer than we might imagine. So far, the oldest evidence of early man found in Lake Mead NRA has been dated at 3,000 years B.C. There are over 900 identified archeological sites above the water line of Lakes Mead and Mohave. Archeological sites that are on the National Register of Historic Places include the petroglyphs of Grapevine Canyon, the Grand Wash and Overton Beach Archeological Districts, and the Lost City (Pueblo Grande de Nevada) archeological sites. The Homestake Mine and the Waring (Horse Valley) Ranch are listed as historic sites, and five other sites have been determined to be eligible for listing. Seventeen structures associated with these National Register sites are included on the List of Classified Structure.

INFLUENCES: INVENTORY AND ANALYSIS

The responsibility for operating the reservoirs of Lake Mead and Lake Mohave in accordance with the numerous laws governing distribution of water on the Colorado River System lies with the Bureau of Reclamation. Water releases from Hoover and Davis Dams are programmed to maximize electrical generation while providing water for agriculture and domestic use. The marketing of Federal electric power is the responsibility of the Western Area Power Administration. The National Park Service manages Lake Mead NRA and is responsible for providing public recreation opportunities and the conservation and management of the natural and cultural resources.

LEGISLATIVE AND ADMINISTRATIVE REQUIREMENTS AND CONSTRAINTS

Enabling Legislation

Basic to Lake Mead National Recreation Area is its establishing legislation (P.L. 88-639, 78 Stat. 1039) that contains the following major legislative constraints on management in its various sections. Management response to these requirements follow.

Sec. 1. "...in order to establish a more adequate basis for effective administration...for more public benefit, the Secretary may exercise the functions to carry out the activities prescribed by this Act."

--Lake Mead National Recreation Area is established as a unit of the National Park System within the Department of Interior.

Sec. 2. "Lake Mead National Recreation Area shall comprise that particular land and water area which is shown on a certain map...and shall be available for public inspection in the Headquarters Office of the Superintendent..."

"The Secretary is authorized to revise the boundaries...subject to the requirement that the total acreage...be no greater than the present acreage thereof... The Secretary may accept donations of land and interests in land within the exterior boundaries...or such property may be procured."

"In exercising his authority to acquire property by exchange, the Secretary may accept title to any non-Federal property located within the boundaries of the recreation area and convey...any federally owned property... The exchange shall be approximately equal in fair market value... The Secretary may accept cash from or pay cash to the grantor in such an exchange in order to equalize values."

--A Land Protection Plan was approved for the recreation area in 1984 and updated in 1987 and 1990 outlining the specific methods of protection. It identifies priorities, summarizes current land ownership, analyzes the cost effectiveness of proposed protection strategies as well as impacts on the social, cultural and natural environments, and discusses the various alternatives that were considered in arriving at current policy. It also serves as a comprehensive statement to landowners of the NPS intentions regarding their lands.

"Establishment or revision of the boundaries...shall not affect valid existing rights in the area, nor shall it affect the validity of withdrawals...made for reclamation purposes. There shall be excluded from the said national recreation area...any property for management or protection by the Bureau of Reclamation..."

--The Bureau of Reclamation has withdrawn from Lake Mead NRA 4,488 acres necessary for the administration of Hoover and Davis Dams.

Sec. 3. The authorities granted by this Act shall be subject to the following exceptions and qualifications when exercised with respect to any tribal or allotted lands of the Hualapai Indians...

(a) "The inclusion of Indian lands within the exterior boundaries...shall not be effective until approved by the Hualapai Tribal Council."

--The Tribal Council, to date, has not expressed interest in having Tribal lands included in Lake Mead NRA. Because of this, subsections (b), (c), and (d) regarding mineral development, leases and permits, and hunting and fishing do not apply.

Sec. 4. (a) "Lake Mead...shall be administered by the Secretary of the Interior for general purposes of public recreation, benefit, and use and in a manner that will preserve, develop and enhance, so far as practicable, the recreation potential, and in a manner that will preserve the scenic, historic, scientific, and other important features of the area..."

--Administration of Lake Mead NRA is consistent with this section and the authorities granted in the 1916 enabling legislation of the National Park Service as amended. Specifically, this section of the act provides authority for the NPS to manage wildlife within Lake Mead NRA.

(b) "In carrying out the functions prescribed by this Act...the Secretary may provide for the following activities, subject to such limitations, conditions, or regulations...and as will not be inconsistent with either the recreational use or...reclamation purposes:

- (1) General recreational use, such as bathing, boating, camping and picnicking;**
- (2) Grazing;**
- (3) Mineral leasing;**
- (4) Vacation cabin site use, in accordance with existing policies,...or as such policies may be revised hereafter by the Secretary**

--Uses outlined are permitted and administered in accordance with existing policies and regulations.

--Mineral leasing is managed in accordance with the Mineral Management Plan completed in 1988. It is authorized only on land zoned as Resource Utilization in the General Management Plan.

--In 1972, the Bureau of Land Management, the Bureau of Reclamation and the National Park Service signed a Memorandum of Understanding (MOU) relating to domestic livestock grazing within Lake Mead NRA. That agreement provided that limited grazing would be administered by BLM in accordance with the recreation area's enabling act of October 8, 1964, with fees collected to be deposited in accordance with BLM requirements.

In 1992, that MOU was updated for the Las Vegas District BLM to more closely follow the guidelines established in the umbrella

MOU between the National Park Service and the BLM for grazing management and administration. The current MOU reflects the discretionary nature of grazing within Lake Mead NRA and better defines the role of the NPS as the decision maker for grazing determinations and prescriptions. Similar updated MOU's will be pursued with the BLM's Kingman Resource Area and Arizona Strip District Office to better define management roles.

Sec. 5. "The Secretary shall permit hunting, fishing and trapping...in accordance with the applicable laws and regulations of the United States and the respective States...The Secretary may issue regulations designating zones where and establishing periods when no hunting, fishing, or trapping shall be permitted..."

--These activities are permitted within Lake Mead NRA in accordance with State laws. Closed areas have been established in accordance with guidelines established in Title 36 of the Code of Federal Regulations (36 CFR) governing closures. Closures have been implemented after consultation with other agencies that share jurisdiction within Lake Mead NRA.

Sec. 6. "...area shall...be administered in accordance with regulations... issued by the Secretary... The Superintendent, caretakers, officers, or rangers...are authorized to make arrests..."

--This section of the enabling legislation was repealed by the National Park Service General Authorities Act of October 7, 1976.

--Regulations pertaining to units of the National Park System are contained in Title 36 of the Code of Federal Regulations and regulations specific to the Lake Mead NRA are in 36 CFR, Part 7.48.

Sec. 7. "Nothing in this Act shall deprive any State, or any political subdivision thereof, of its civil and criminal jurisdiction... Nothing in this Act shall modify or otherwise affect the existing jurisdiction of the Hualapai Tribe or alter the status of the individual Hualapai Indians..."

--The National Park Service exercises concurrent jurisdiction in the States of Nevada and Arizona. A Certificate of Consent for concurrent legislative jurisdiction was issued by the Nevada Tax Commission on February 11, 1974. Concurrent jurisdiction over Arizona lands was obtained on October 20, 1982. Tribal lands have not been approved for inclusion in Lake Mead NRA.

Sec. 8. "Revenues and fees...shall be subject to the same statutory provisions as are similar revenues collected in areas of the national park system with the exception,...fees...from mineral developments...shall be disposed of in accordance with

the provisions of the applicable laws."

--Campground fees and grazing fees are the only user fees collected at Lake Mead NRA. The leasing of Federal mineral rights is administered by the Bureau of Land Management in accordance with regulations contained in Title 43 of the Code of Federal Regulations (43 CFR), parts 3500 and 3800.

Sec. 9. "A United States commissioner shall be appointed for that portion of the...area that is situated in Mohave County, Arizona. Such commissioner shall be appointed by the United States district court having jurisdiction thereover, and...serve as directed by such court..."

--A commissioner/U.S. Magistrate for Mohave County, Arizona, has been established.

Sec. 10. "There are hereby authorized to be appropriated not more than \$1,200,000 for the acquisition of land and interests in land pursuant to section 2 of this Act."

--The land acquisition ceiling was increased to \$7.1 million by Public Law 93-477 on October 26, 1974.

Other Legislative and Administrative Requirements

There is a complex body of Federal and State laws, regulations and policies that direct, guide and influence management of Lake Mead National Recreation Area. For the purpose of the Statement for Management, the following are some of the more important legal guidelines germane to the recreation area.

National Park Service lands outside Lake Mead NRA, (Public Law 85-900; 72 Stat. 1726), September 2, 1958. This act provided for disposition of certain Federal property in Boulder City, Nevada. Lands subsequently quitclaimed to the city by the Federal Government excluded certain properties within the city limits. Two such properties, the present site of the headquarters building (2.13 acres) and the warehouse facility (13.18 acres) were retained in Federal ownership to be administered in perpetuity by the National Park Service.

Grand Canyon Enlargement Act of January 3, 1975 (P.L. 93-620). The Grand Canyon Enlargement Act enlarged that park by including within it 327,215 acres east of the Grand Wash Cliffs that previously were part of Lake Mead National Recreation Area, including portions of Whitmore, Andrus and Parashant Canyons, and the Sanup Plateau. While not specific within the act, the Joint Statement of the Conference Committee on the legislation was implicit in directing the Secretary to study the remaining Shivwits Plateau area to determine its suitability for future inclusion within the Grand Canyon National Park. A team

including representatives from the National Park Service, Bureau of Land Management, and Forest Service was involved in the study. A document entitled Adjacent Lands Study (November 1981) recommended maintaining the existing agency management responsibilities for the study area.

Reservoir Salvage Act of 1960 (P.L. 86-523; 16 U.S.C. 469). This law was a further expression of the commitment of Congress to the prevention of damage to significant historic and prehistoric properties. It specifically provided for preservation of data that might otherwise be destroyed or lost as the result of dam construction.

Historical and Archeological Data Preservation Act of 1974 (P.L. 93-291; 88 Stat. 174). This act amended and updated the Reservoir Salvage Act of 1960, broadening the earlier legislation beyond that of the dam construction. The amendment applies to ". . .any alteration of the terrain caused as a result of any Federal construction project or federally licensed activity or program. . ."

The act authorizes an agency to spend up to one percent of project costs for mitigation of the impacts to cultural resource sites and properties (This was revised by a 1980 amendment to the National Historic Preservation Act). Under the 1974 Act, an agency official may request assistance from the Secretary of the Interior in mitigation efforts.

National Historic Preservation Act of October 5, 1966 (P.L. 89-655; 80 Stat. 915). This act established a comprehensive national policy of historic preservation. Section 106 of the act requires agency heads to consider cultural resources when planning an undertaking, and to allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. Recognizing that inadvertent damage to sites must be curtailed, the act directs review at the State and Federal levels.

The National Park Service is responsible for the

- identification of resources;
- evaluation of significance;
- assessment of the impact of any undertaking on the significant value of the property;
- mitigation of adverse effect; and
- management.

In December 1980, the National Historic Preservation Act was amended significantly by Public Law 94-422 (90 Stat. 1319). Among the provisions the new act authorized or required were the following:

- requires the development of professional standards for the preservation of historic properties in Federal ownership or control by the Secretary of the Interior, in consultation with the Secretary of Agriculture, among others;
- requires the heads of all Federal agencies to assume responsibility for the preservation of historic properties that they own or control;
- directs agencies to use available historic properties to the maximum extent possible;
- allows an agency to exceed the limitation of one percent of project cost where appropriate; and
- allows agencies to lease an historic property if its preservation will be insured. Permits use of proceeds for maintenance, repairs and administration of the property.

American Indian Religious Freedom Act of 1978 (P.L. 95-341; 92 Stat. 469). This act establishes that it is the policy of the United States to protect and preserve for Native Americans their inherent right of freedom to believe, express and exercise their traditional religions and rites to include access to traditional sites and the use and possession of sacred objects.

The National Park Service must assure that its general regulations on access to, and use of, park lands and park resources are applied in a balanced manner that does not unduly interfere with a Native American group's use of historically traditional places or sacred sites located within the boundaries of a park unit.

Archeological Resources Protection Act of 1979 (ARPA) (P.L. 96-95; 93 Stat. 712; 16 U.S.C. 470aa, et seq.). The ARPA was enacted to prevent the illegal excavation, damage or possession of archeological resources located on Federal, other public land and Indian land.

The Code of Federal Regulations protects archeological resources within park areas. Such resources in parks are defined in the CFR consistent with definitions set forth in the ARPA. However, the ARPA gives much greater authority and discretion to Federal land managers and the United States Attorney to prosecute criminally, or handle as a civil matter, offenses including the taking, damaging, possessing or selling of archeological resources. One of the major impacts of the ARPA was that it increased penalties for such acts.

Lacey Act of 1900 (P.L. 97-79, as amended by P.L. 97-79 95 Stat. 1073; 18-U.S.C. 42-44, Title 50 CFR). The Lacey Act is a single, comprehensive statute providing effective enforcement of State, Federal, Indian tribal and foreign conservation laws protecting fish, wildlife and rare plants.

The Code of Federal Regulations protects wildlife, fish and all

plants that may be taken or possessed within National Park System areas. However, the Lacey Act gives much greater discretion to park managers and the U.S. Attorney to prosecute criminally, or handle civilly, more serious violations involving the taking of wildlife, fish or rare plants. Discussions between the U.S. Attorney's Office and local U.S. Fish and Wildlife Service (FWS) enforcement agents should occur whenever commercial or other serious degradation of these resources is suspected on park lands.

Bald and Golden Eagle Protection Act (P.L. 86-70, as amended; 73 Stat. 143; 16 U.S.C. 668-668c). This statute prohibits taking, possessing or trading of bald and/or golden eagles.

Eagles are protected along with all other wildlife under the Code of Federal Regulations. However, this act gives considerable discretion to park managers and the U.S. Attorney to exact a more severe penalty for taking or possessing eagles, if circumstances warrant. However, discussion between the U.S. Attorney's Office and area Fish and Wildlife Service enforcement agents should occur whenever possible violations of the act take place in a park area.

Concessions Policy Act of 1965 (P.L. 89-249; 79 Stat. 969; 16 U.S.C. 20 et seq.). The Concessions Policy Act provides authority for and guidance in the establishment of concession policies in areas administered by the National Park Service. The act provides for the following:

- consideration of protection against loss of investment in tangible property;
- a reasonable opportunity to realize a profit;
- establishment of comparable rates to be charged;
- a preferential right to provide new or additional services and in the negotiation of new contracts;
- establishment of a possessory interest in improvements on lands owned by the Federal Government; and
- record keeping.

The National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190, 31 Stat. 852; 16 U.S.C. 4321-4347 et seq.). The National Environmental Policy Act declares that it is the policy of the Federal Government to improve and coordinate Federal plans, functions, programs and resources so that the Nation may preserve important historic, cultural and natural aspects of our heritage.

The National Park Service is required to review each proposed action to determine if it could significantly affect the quality of the human environment and assess in detail the environmental impacts of such actions. These determinations are made in accordance with NPS-12, the National Environmental Policy Act Guidelines.

The Wilderness Act of 1964 (P.L. 88-577; 78 Stat. 890; 16 U.S.C. 1121-1136). The purpose of the Wilderness Act is to legislatively establish an enduring wilderness resource for public use and enjoyment.

In compliance with this act, the NPS has established management policies and directives with respect to wilderness studies and appropriate human activities in such areas before and after the legislative process is completed. Areas suitable for wilderness designation within Lake Mead NRA are identified in the General Management Plan.

Endangered Species Act of 1973 (P.L. 93-205; 87 Stat. 884; 16 U.S.C. 1531-1543). This act provides for the conservation of threatened and endangered species of fish, wildlife and plants through Federal action and by encouraging State programs.

Section 7 of the act requires Federal agencies to consult with the Secretary of the Interior or the Secretary of Commerce on all projects and programs having potential impact on endangered or threatened species. It further requires them to take ". . . such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize such endangered or threatened species or result in the destruction or modification of habitat . . ."

The National Park Service is responsible for maintaining an inventory of endangered or threatened species within a park area either on a permanent or seasonal basis; considering impacts of any project or program upon endangered or threatened species; and maintaining liaison with the U.S. Fish and Wildlife Service concerning applicable regulations and changes in subject listings.

National Park Service General Authorities Act of 1970 (P.L. 94-458; 90 Stat. 1939; 16 U.S.C. 1a et seq.). This legislation provided additional improvement and authorization for the administration of the National Park System.

In this act, Congress clarified its position concerning protection of areas in the National Park System regardless of their classification as parks, monuments, recreation areas, etc.

This act provides the Secretary of the Interior with authority to relinquish part of his legislative jurisdiction, and allows the Secretary to move from exclusive to concurrent jurisdiction without a special act of Congress, which was previously required. The expressed intent of the Department is to move toward concurrent jurisdiction in all NPS areas.

The act authorizes the Secretary to designate, pursuant to standards prescribed in Departmental regulations, certain

officers or employees of the Department to maintain law and order and protect people and property within areas of the National Park System. The authority also provides for designation of officers of other agencies as special policemen under prescribed criteria.

It also authorizes law enforcement personnel to carry firearms, make arrests without a warrant for any offense committed against the United States, execute warrants or other processes, and conduct investigations of offenses against the U.S. committed in a park area in the absence of or with the concurrence of any other Federal law enforcement agency having investigative jurisdiction over the offense committed.

Department of Transportation Act of 1966, (P.L. 89-670, 80 Stat. 931, 49 U.S.C. 1651). This act restricts the use of park lands for Federally supported highways and other projects requiring Department of Transportation (DOT) approval. Section 4(f) mandates that no project that requires the use of land from a public park, recreation area, or wildlife or waterfowl refuges of national, state or local significance will be approved unless there is no feasible or prudent alternative and all possible planning is done to minimize harm to the area.

Clean Air Act of 1970 (PL 88-206; 42 U.S.C. 7401, as amended by P.L. 95-95). The Clean Air Act is very complex and has multiple purposes. One such purpose of Title I of the act is preservation, protection and enhancement of the air quality in national parks, national wilderness areas and other areas of special natural, recreational, scenic or historical value. The 1977 amendment establishes Class I, II and III areas where the increase in sulphur dioxide and particulate matter is to be restricted. The restrictions are more severe in Class I areas and progressively more lenient in Classes II and III.

The act requires all Federal agencies to comply with Federal, State, interstate and local requirements towards control and abatement of air pollution. As such, the National Park Service is responsible for: assuring that park facilities and programs are in compliance with State implementation plans (SIPs); establishing monitoring and/or research programs for determining impairment of air-quality-related values; providing timely response to any permit application submitted for review; and including a section on air-quality-related values and visibility in the Resource Management Plan and the Statement for Management.

Clean Water Act of 1977 (P.L. 92-500; P.L. 95-217; 33 U.S.C. 1251 et seq.). The Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-217) provides for a complex set of pollution-control activities. The objective of the act, "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." All Federal agencies must comply with all applicable requirements for control

and abatement of water pollution; insure direct discharges of effluent conform with the strictest standards for such; obtain permits for discharge of any pollutant; and provide monitoring. Federal agencies also are encouraged to conduct needed research and training to determine causes, effects, extent, prevention, reduction and elimination of pollution. The National Park Service also must participate in area-wide planning and waste management, water-quality planning and management, and establishment of standards and criteria, and it must establish water-quality monitoring systems.

Safe Drinking Water Act of 1974 (P.L. 93-523; 88 Stat. 1660; 42 U.S.C. 300f.). The Safe Drinking Water Act was passed to assure that the public is provided with safe drinking water when supplied by a public water system. The act requires that water quality standards be established and maintained that specify types of contaminants allowed and the maximum levels permitted in water delivered to a user by a public water system, including those in national parks. The National Park Service must maintain systems that can provide water within the quality standards established and must provide testing to insure compliance.

Floodplain Management Executive Order of May 24, 1977 (E.O. 11988). This Executive Order requires agencies "to avoid to the extent possible the long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternate." Federal agencies are directed by the act to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, and restore and preserve natural and beneficial values served by floodplains.

Protection of Wetlands Executive Order of May 24, 1977 (E.O. 11990). Executive Order 11990 prevents, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands, and mandates avoiding direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The order directs each Federal agency in carrying out its responsibilities to provide leadership and take actions to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

In preparing plans for development, public use and/or resource management, the NPS must determine the locations of springs and seeps within the affected area and ensure the quality of these resources is preserved and enhanced to the greatest degree possible.

Off-Road Vehicles on Public Lands Executive Orders of 1972 and 1977 (E.O. 11989 and E.O. 11644). Prompted by widespread and increasing use by an estimated 5 million off-road recreation

vehicles (motorcycles, minibikes, trail bikes, snowmobiles, dune buggies, all-terrain vehicles and others), President Richard Nixon issued E.O. 11644 on February 9, 1972. The purpose of this order was to establish policies and provide procedures that ensure the use of off-road vehicles (ORVs) on Public Land would be controlled and directed so as to protect the resources of those lands, to promote the safety of all users and to minimize conflicts among various uses. Generally, this executive order called on agency heads to develop regulations concerning designation of off-road-vehicle trails in accordance with criteria established by the order.

On May 24, 1977, President Jimmy Carter issued E.O. 11989 amending E.O. 11644 to clarify agency authority to define zones of use by off-road vehicles on Public Land and in furtherance of the National Environmental Policy Act. It addressed administrative use for emergency purposes or national defense purposes and directed immediate closure of ORV routes whenever considerable adverse effects on natural or cultural resources are identified.

Resource Conservation and Recovery Act of 1984 (Public Law 94-580; 42 U.S.C. 6901). This legislation governs disposal of hazardous and/or solid waste and includes management of landfills. It establishes guidelines for collection, transportation, storage, separation, recovery, and disposal of solid waste; creates a major, Federal, hazardous-waste regulatory program; and provides assistance to establish State or regional solid-waste management plans.

Americans With Disabilities Act of 1990 (Public Law 101-336;). The Americans With Disabilities Act (ADA) is a comprehensive law prohibiting discrimination against people with disabilities in employment, public transportation, telecommunications and public accommodations. It extends to persons with disabilities similar comprehensive civil rights protection provided to persons on the basis of race, sex, national origin and religion under the Civil Rights Act of 1964. In regard to physical accessibility, this act extends the intent of the Architectural Barriers Act to cover all public facilities regardless of Federal funding, including facilities such as restaurants, hospitals, movie theaters, medical and law offices and retail stores. Implementation of the Americans with Disabilities Act will be accomplished through a new set of standards called the "ADA Accessibility Guidelines for Building and Facilities."

Code of Federal Regulations. The Code of Federal Regulations directly influences the management of Lake Mead National Recreation Area. Regulations specific to Lake Mead NRA are contained in Title 36, Part 7.48. Other regulations affecting the recreation area are found under Title 43 relating to Sales and Exchange of Lands, Occupancy of Cabin Sites on Public

Conservation and Recreation Areas, and Mineral, Oil, and Gas Leases; the sections under Title 40 relating to Permits, Protection of Environment and Endangered Wildlife; and the sections under Title 33 pertaining to the Coast Guard's responsibilities and jurisdiction on navigable waters of the United States. These regulations require that management confer with these agencies on certain matters where their jurisdiction applies.

National Park Service Management Policies. The management of the National Park System and NPS programs are guided by the Constitution, public laws, proclamations, executive orders, court decisions, rules and regulations, and directives of the Secretary of the Interior and the Assistant Secretary for Fish and Wildlife and Parks. NPS policy must be consistent with these higher authorities and with appropriate delegations of authority. Policy sets the framework and provides direction for management decisions. It may prescribe the process by which decisions are made, how an action is to be accomplished, or the results to be achieved.

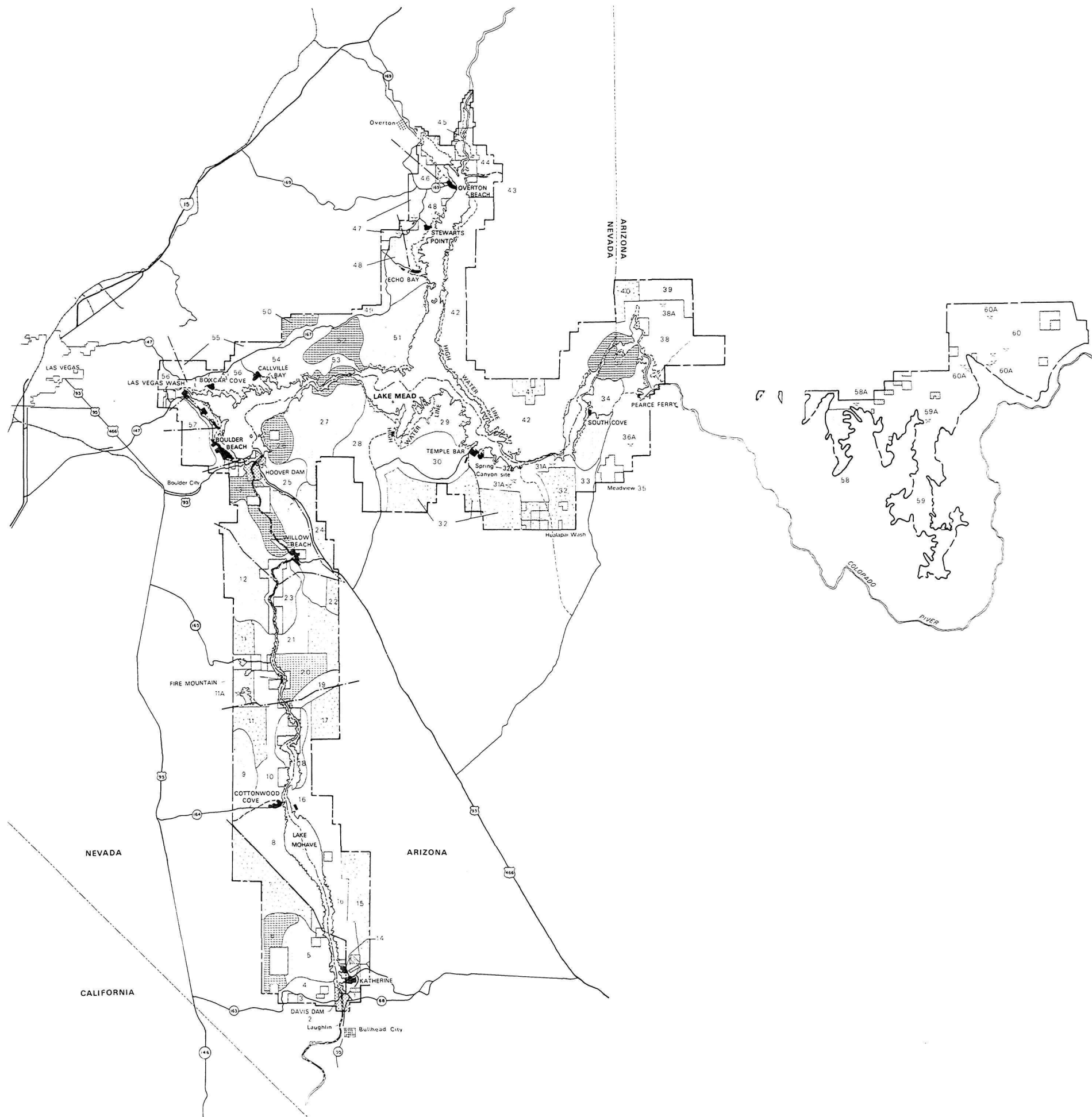
Recommended procedures for implementing Servicewide policy are described in the NPS guideline series. NPS guidelines generally allow for management discretion; however, they are mandatory where language so indicates.

A number of memorandums of agreement and memorandums of understanding also influence the management of Lake Mead NRA. A listing of these agreements is included in Appendix B.

EXISTING MANAGEMENT ZONING

Definition of Management Zones

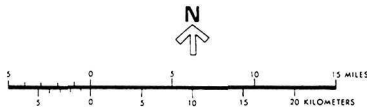
Management zones were identified in the 1986 General Management Plan as shown on the following Proposed Action Management Zoning Map. Table 1 provides definitions, examples of activities and development permitted in each management zone and the management strategy for each zone. Table 2 provides acreage for each zone and the percentage each zone comprises of the overall park. Park lands were classified into four zones: Natural Zone, Historic/Archeological Zone, Development Zone and Special Use Zone. Lands within the Natural and Special Use Zones were divided into subzones. Lands containing non-Federal mineral rights might occur in any of the management zones. When this occurs, the National Park Service would manage the surface of those lands according to the surrounding zoning category, subject to the exercise of the non-Federal right.



ACREAGE	NATURAL ZONE
317,930	ENVIRONMENTAL PROTECTION SUBZONE
51,580	OUTSTANDING NATURAL FEATURE SUBZONE
680,520	NATURAL ENVIRONMENT SUBZONE
51,280	HISTORIC/ARCHEOLOGICAL ZONE
DEVELOPMENT ZONE	
8,780	DEVELOPMENT SUBZONE
	ACCESS SUBZONE (Not shown, but roads shown on the alternative maps and Approved Roads map.)
SPECIAL USE ZONE	
191,500	RESERVOIR SUBZONE
5,030	BUREAU OF RECLAMATION PROJECT LANDS SUBZONE
14,090	NONFEDERAL LANDS SUBZONE
148,970	RESOURCE UTILIZATION SUBZONE *
12,795	UTILITY CORRIDOR SUBZONE

* Mineral leasing is only permitted in the resource utilization subzone

Numbered areas 1-60A are described in the table entitled Management Zoning explanation



**PROPOSED ACTION
MANAGEMENT ZONING**
(PROPOSED LAND USE)
**LAKE MEAD
NATIONAL RECREATION AREA**
ARIZONA - NEVADA
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Table 3: Definition of Management Zones

Management Zone	Definitions	Management Strategy	Development Permitted	Examples of Permitted Activities		
				Recreational	Nonrecreational	Comments
Natural	<p>The <u>environmental protection subzone</u> emphasizes perpetuation of geological or ecological features. Features are protected because they are rare, fragile, unique, or otherwise significant, and they include such things as threatened/endangered species habitat and bighorn sheep range.</p> <p>The <u>outstanding natural feature subzone</u> emphasizes appreciation and perpetuation of geological or ecological features possessing unusual intrinsic or scenic value. Included within this subzone are features such as Bowl of Fire, Iceberg Canyon, Newberry Mountains, and Fortification Hill/Paint Pots.</p> <p>The <u>natural environment subzone</u> emphasizes conservation of natural resources and provision of environmentally compatible recreational activities. This subzone contains lands possessing natural values that are not within one of the other two subzones just discussed and is open to grazing</p>	Maintenance of isolation and natural processes. Consumption of renewable resources subject to protection of recreational and natural resource values.	Management facilities necessary for the preservation and enjoyment of recreational values. Management facilities and practices necessary to sustain grazing limited to minimum management tool.	Hunting, hiking, camping, picnicking, horseback riding, backpacking, riding trailbikes and dune-buggies on approved roads, scenic touring by auto or four-wheel-drive vehicles on approved roads.	Grazing	Examples are not all-inclusive. Grazing may be subsequently prohibited in certain areas identified in the <u>Resources Management Plan</u> . Recreational uses of motorized equipment allowed only on approved roads. Motorized equipment permitted where it constitutes a "minimum management tool." Mineral leasing not allowed.
Historic/ Archeological	<p><u>No subzones</u>. This zone emphasizes preservation, protection, and interpretation of cultural resources and their settings.</p>	Protection and preservation. Restoration where deemed appropriate by professional analysis. Interpretation.	Access to the cultural resources. Trails for confining and containing use. Protective enclosures. Interpretive facilities.	Interpretation of historic and archeological features; hiking and backpacking.	Scholarly study, grazing.	Examples not all-inclusive. Grazing and agriculture may be permitted. Mineral leasing not allowed.
Development	<p><u>No subzones</u>. This zone contains development that serves the needs of park management and visitors. These areas have been substantially altered to accommodate development.</p>	Maintenance of the facilities. Provision of visitor services.	Approved roads and permanent structures necessary to support recreational activities.	Bicycling, picnicking, horseback riding, swimming, fishing, trailer and motorhome camping, arts and crafts activities, outdoor resort activities, interpretive programs.	Grazing	Examples are not all-inclusive. Grazing prohibited in the developed areas within the development zone. Mineral leasing not allowed. Vehicle use restricted to approved roads.
Special Use	<p>The <u>reservoir subzone</u> includes all waters impounded behind Davis and Hoover dams. NPS management is limited to recreational use only; these waters are also managed by the Bureau of Reclamation for flood control, state and international commitments of water, irrigation, and power generation.</p> <p>The <u>nonfederal lands subzone</u> includes nonfederal public lands in the recreation area, which are managed as open space by the owner or used by the owner for development purposes. This subzone also includes those lands encumbered by patented mining claims which may be subject to future mining activity.</p> <p>The <u>resource utilization subzone</u> is intended to show which lands the Park Service considers suitable for possible prospecting or mineral leasing. This is the only subzone where mineral leasing and development is permitted. This subzone will be discussed in greater detail in the mineral management plan, which will be prepared following finalization of the GMP. Some lands that are under existing mineral leases are not shown in this subzone, as it is the intent of the Park Service to manage those lands according to the surrounding management zone once the current lease expires.</p> <p>The <u>Bureau of Reclamation project lands subzone</u> includes Hoover and Davis dams and associated structures. These lands were excluded from the recreation area by the establishing act of October 8, 1964, and they are managed by the Bureau of Reclamation for facilities to generate and transmit electricity, store water and regulate its flow downstream, and maintain and operate those facilities.</p> <p>The <u>utilities subzone</u> includes these corridors used for aerial transmission lines, managed rights-of-way for underground utilities, pumping stations, storage facilities, and similar developments operated primarily or exclusively to provide service to areas outside the park.</p>	Maintenance of natural processes. Enhancement of fish and game populations. Consumption of renewable and nonrenewable resources subject to protection of recreational values. Land uses carried out by other government agencies or private interests. NPS administrative control may be limited, depending on the land use right.	Same as for the natural management zone, except in certain subzones it includes mining facilities, utility lines, Bureau of Reclamation dams and associated structures, primitive trailhead facilities (such as parking and sanitary devices), and improved access points (parking, camping, launch ramps, and sanitary devices).	Same as natural management zone but includes bicycling, waterskiing, fishing, sailboating, houseboat touring, river rafting, and shoreline camping.	Mineral exploration and development (only in the resource utilization subzone), grazing, utility installations and corridors, and management of Bureau of Reclamation dams and utility structures.	Grazing may be prohibited in certain areas identified in the <u>Resources Management Plan</u> . The reservoir subzone includes exposed shoreline and reservoir surfaces below the 1,230-foot elevation for Lake Mead, 650-foot elevation for Lake Mohave, and 300-foot setback from this high waterline retained by the Bureau of Reclamation.

Table 2. Acreage of Management Zones

<u>Natural Zone</u>	<u>Acreage</u>	<u>Percentage</u>
Environmental Protection Subzone	317,930	21
Outstanding Natural Feature Subzone	51,580	3
Natural Environment Subzone	<u>680,520</u>	<u>46</u>
Zone Total	1,050,030	70
<u>Historic/Archeological Zone</u>	51,280	3
<u>Development Zone *</u>	8,780	1
<u>Special Use Zone</u>		
Resource Utilization Subzone	148,970	10
Other Special Use Subzones	51,507	3
Reservoir Subzone	<u>186,160</u>	<u>13</u>
Total	386,637	26
Recreation Area Total	1,496,727	100

RESOURCES

The recreation area lies within two geologically diverse areas. The area most utilized by visitors lies west of the Grand Wash Cliffs within the Basin and Range Province. It is a north-south trending series of isolated mountain ranges and basins featuring alluvial fans, vast bajadas and playa deposits of silts, clays, and weakly-cemented gravels. Extensive igneous intrusions with interspersed granitic- or volcanic-capped mountain blocks are another feature of this area. Elevations vary from 517 feet to 5,639 feet above sea level.

The other segment of the recreation area consists of a portion of the Shivwits Plateau located east of the Grand Wash Cliffs and north of the Sanup Plateau. The Shivwits, at an average elevation of 6,400 feet, is a westerly extension of the more famous Kaibab Plateau, 1,000 feet higher. The two plateaus form the North Rim of the Grand Canyon. Small, widely-scattered and heavily-eroded formations rise above the Shivwits Plateau, culminating within the recreation area at Mount Dellenbaugh, the park's highest point at 7,072 feet.

The following is a brief description of the park's resources. A more complete description of the park's physical, natural and cultural resources is contained in the 1986 Final Environmental Impact Statement, Volume II Affected Environment/Environmental Consequences prepared for Lake Mead's General Management Plan.

CLIMATE

The variety of topographical features and elevation differences within the Lake Mead region create numerous microclimates. The lower elevations along the Colorado River and the broad valleys between mountain ranges have an arid climate typical of the Mojave Desert. Precipitation is low, averaging only 3 to 5 inches per year. Humidity is also low and averages about 28 percent. Winters are mild, with daily temperatures in January ranging between 32 degrees Fahrenheit (F.) and 55 degrees F. on many days. In summer, the average maximum temperature in July is 105 degrees F. with an overall maximum temperature of 122 degrees F. Evaporation rates are extremely high and exceed 80 inches per year at the surface of Lake Mead.

Most of the precipitation occurs during the winter months and during July through September. There is a period late each summer when warm, moist, tropical air dominates weather conditions in this area, creating higher than average humidity and scattered thundershowers that cause flash flooding with rapid runoff and severe erosion. Washes that have been dry for the rest of the year can flow without warning. At Lake Mead, the greatest hazard to life and property occurs where developed areas were built in flash-flood washes before the danger was fully

understood. Virtually every wash in the recreation area can be in the path of a flash flood from time to time. Precipitation during the winter is usually from regional storms of low intensity and longer duration. Snow is rare at lower elevations.

GEOLOGY/SOILS

Lake Mead National Recreation Area contains approximately 2,350 square miles of biologically and geologically diversified land and water environments. The Grand Wash Cliffs mark the boundary between the Colorado Plateau Province of the eastern portion of the recreation area and the Basin and Range Province of the central and western portions of the recreation area.

The Basin and Range Province is characterized by generally north-south trending mountain ranges separated by broad, shallow valleys. Many of these intervening valleys have no exterior drainage and form enclosed basins. The mountains are dissected by deep ravines that open into broad alluvial fans. Commonly, adjoining fans coalesce and form a continuous alluvial apron along the base of the mountains. These slopes extend outward into the valleys where they merge with the valley floor, or extend across the valley and join opposing slopes that form an alluvial divide. The valley floors are usually nearly level and often contain one or more playas, or dry lakes, where silt, clay, and weakly-cemented gravels have been deposited. In the tilted, fault-block mountains, the age of strata ranges from Precambrian Period to the Tertiary Period, while the sediments in the intervening structural basins are all younger than the Mesozoic Era and consist chiefly of late Tertiary and Quaternary Period deposits.

Most of the upland plateau, including the Shivwits Plateau, is a gently rolling but dissected tableland. A number of lava-capped buttes rise above the general landscape, culminating in 7 million-year-old Mount Dellenbaugh. The southern edge of the plateau drops away precipitously toward the Colorado River. The sedimentary rock column includes strata ranging in age from lower Cambrian to Middle Triassic Periods and overlies a basement complex of Precambrian granite and schist. The sedimentary formations are nearly horizontal and generally have a dip of less than five degrees to the east and northeast.

This portion of the Colorado Plateau provides a classic example of landscape development in nearly horizontal sedimentary rocks with different resistance to erosion under semiarid conditions. In general, the landscape is composed of five classes of features: steep to vertical-walled canyons developed in resistant strata; beveled surfaces of the inner canyon of the Colorado River where the massive crystalline rocks of the Precambrian Period and lower Paleozoic Era carbonate strata have a more uniform resistance to erosion; stripped surfaces that are

developed on a particularly resistant stratum overlain by less resistant strata, typified by the Kaibab uplands and the Esplanade; and scarps, either erosional or tectonic, such as the Hurricane and Grand Wash Cliffs; and surfaces of aggradation, most notably represented by lava flows, talus, and colluvial slopes. The three broad soil associations represented in Lake Mead National Recreation Area are lithosols, Red desert soils and Catron soils.

MINERALS

The mineral resources of the Lake Mead region are found in widely scattered areas throughout the recreation area. Although there has been a long history of mineral exploration in the area dating from the early 1860's, mineral production has been minimal. The only recorded production within the last 35 years of leasing is 60 pounds of tungsten concentrate that was removed in the mid-1950's. The mineral resources have been subdivided into metallic, nonmetallic, and energy resources. Until 1990, most interest in mineral resources has been for oil and gas and uranium resources although no production of these energy minerals has occurred in Lake Mead NRA. Today, mineral interests are concentrating on gold and silver operations.

FLOODPLAIN AND WETLANDS

National wetlands inventory maps are not available for Lake Mead NRA. However, wetland environments are rare within the recreation area, and none exist along Lake Mead's shores because of the wide variation in water levels. Wetland areas include Rogers and Bluepoint Springs, the stream riparian environment in Las Vegas Bay, and the mudflats of the Virgin and Muddy Rivers at the north end of the Overton Arm of Lake Mead. There are localized wetland areas near the more than 40 springs dispersed throughout the area. With the Western drought conditions of the last 6 years lowering Lake Mead's water level, new wetland communities are developing on the exposed river delta in the vicinity of Pearce Ferry.

Many of the popular visitor-use areas around the recreation area, both developed and undeveloped, are subject to flash flooding. NPS guidelines classify such flash-flood areas as high-hazard areas and require that specific management actions be taken to reduce the flood hazard. Thus, when studies reveal that existing structures or facilities are subject to flash flooding, as they are in the recreation area, a plan of action must be prepared.

The General Management Plan defines the probable maximum floodplain (PMF) and the 100-year floodplain. A 100-year flood is a flood that has a one percent chance of occurring in any given year. Floods of this magnitude occur frequently enough to pose a serious threat to all facilities and people. The PMF is

the largest flood that can ever be expected to occur in an area. However, these floods are rare, and their statistical probability of occurring is uncertain. They have occurred on occasion. In 1974 at Eldorado Canyon on Lake Mohave, a flood occurred that was 7.6 times larger than the calculated 100-year flood and two-thirds of the PMF as calculated by the U.S. Department of the Interior, Geological Survey, in 1949. Jumbo Wash, located within the Willow Beach Development Area, has recorded flood events in 1982 and 1992 that exceeded the 100-year flood interval.

AIR QUALITY

The air quality of the Lake Mead region is generally good, especially in the Colorado Plateau portion of the recreation area. However, air quality degradation is increasingly evident throughout the lower elevations of the Basin and Range Province. Air pollutants drain into the basin of the Colorado River from all directions and are of particular concern during periods of atmospheric inversion. Lake Mead NRA is classified as a Class II airshed as is much of the public land in Nevada and Arizona.

Background air quality data, in general, are not available for the entire recreation area. However, baseline data was collected as part of the multi-agency SCENES Program in the 1980's. In 1992, four monitoring stations were set up at strategic locations within Lake Mead NRA as part of an air-monitoring project on the Mohave Generating Plant located in Laughlin, Nevada. The project is designed to assess the plant's impact on the Class I airshed of adjacent Grand Canyon National Park. This data will provide much-needed information about Lake Mead's air quality as well.

A 1973 emissions inventory for Clark County, Nevada, carried out by the Air Pollution Control Division of the Clark County Health District, indicated that motor vehicles were the major contributors to air pollution in the county, accounting for 97 percent of the carbon monoxide, 81 percent of the hydrocarbons, and 52 percent of the nitrogen oxide emissions. Power plants discharged 89 percent of the sulfur dioxides and 22 percent of the total particulates. Mobile sources accounted for approximately 245,000 tons of pollutants in the air per year, power plants for 83,000 tons, and industrial processes for 56,000 tons.

VISUAL QUALITY

Visitors at Lake Mead NRA find spectacular scenic vistas from the park roads, lake surface and hiking routes. Because the desert vegetation tends to be low and sparse, the views are unobstructed for miles. Striking backdrops for all recreational activities include deep canyons, dry washes, sheer cliffs, distant mountain ranges, the lakes, colorful soils and rock formations, mosaics of

different vegetation and changing cloud formations. A panorama of such intriguing features depends on clean, dry air and is one of the most important resources in the recreation area.

Preserving the high visual qualities of the area is integral to preserving the high quality of the recreation experience. This is one reason why the National Park Service is concerned about surface, ground disturbance from mineral, oil and gas leasing, illegal ORV use and uncontrolled expansion of developed areas.

WATER RESOURCES

The major rivers supplying water to the recreation area are the Colorado, Virgin and Muddy Rivers. Flows from the major source, the Colorado River, are controlled upstream by the Glen Canyon Dam, which intercepts 80-85 percent of the sediment that formerly entered Lake Mead. Most of the streams in the recreation area are intermittent or ephemeral and are subject to seasonal flash flooding primarily in the late summer and early fall months. Las Vegas Bay flows year-round because it is the outflow for treated municipal and industrial waste water from Las Vegas. These flows average about 160 cubic feet per second (cfs) or 104 million gallons (mg) a day (116,000 acre feet/year). Over 40 desert springs also provide water in varying amounts around the recreation area.

All major developed areas have water and sewage treatment systems. Raw water is obtained from a Basic Management Incorporated (BMI) waterline at Las Vegas Bay; from wells about 200-feet deep at Cottonwood Cove, Willow Beach, and Temple Bar; and directly from Lake Mead or Lake Mohave at the remaining areas. It is then filtered, disinfected and stored for use by NPS and concession facilities.

Wastewater is disposed of by evaporation and infiltration (sub-surface discharge) from sewage lagoons at all areas. Only Overton Beach, Callville Bay and Las Vegas Bay have relatively new wastewater systems. The systems at Katherine Landing, Temple Bar and Willow Beach developed areas need to be expanded, and the Cottonwood Cove facilities require reconstruction. Facilities at Echo Bay and Boulder Beach need rehabilitation and upgrading. Under existing permits, groundwater monitoring wells will be required at all areas, however, only Callville Bay and Las Vegas Bay now have such wells. Monitoring wells are needed at the seven remaining areas, but all wastewater systems are monitored regularly. Although potable water is not provided at undeveloped access points around the lakes, heavily-used areas generally have vault or dehydrating toilets.

Based on available water-quality data and the protected uses of water within Lake Mead NRA, water in both Lakes Mead and Mohave is known to be of excellent quality and in compliance with

established, water-quality standards throughout the year. However, isolated instances do occur where bacteriological contamination threatens the use of water at specific sites for full-body contact recreation. At the mouth of Las Vegas Bay, State standards for ammonia are at times exceeded. The Southern Nevada Water Systems (SNWS) laboratory has recovered the causative organisms for Salmonella (paratyphoid) and cholera in humans from their raw water intake at Saddle Island; however, Giardia has not been recovered in any samples.

The maximum limits for fecal coliform in units per 100 milliliters (ml) allowable for full-body-contact recreation in the Arizona and Nevada Water Quality Standards are 200 as a geometric mean (five sample minimum), 400 in 10 percent of the samples over a 30-day period and 800 in a single sample. (Arizona has a requirement for a single-sample maximum of 800/100 ml, but Nevada does.)

Elevated counts of fecal coliform may occur during heavy-use days when lake levels are low, and at undeveloped coves accessible only by water where use is low to moderate and no sanitary facilities are available.

Bacteriological contamination is rare in open areas (such as Boulder Beach) where wind and wave action provide adequate mixing; however, in harbors or confined areas, incidents of elevated coliform counts occur throughout the summer. For example, fecal coliform levels have reached 1,200/100 ml at Cottonwood Cove, 1,100/100 ml at Temple Bar, 23,000/100 ml at Katherine Landing, and from 4,600/100 ml up to 2,000,000/100 ml in Las Vegas Wash Bay. All marinas have commercial sewage pumping systems for recreational watercraft. The park is currently developing water quality monitoring guidelines for these facilities.

ECOLOGICAL COMMUNITIES

The ecological communities of Lake Mead NRA can be most conveniently divided, like geology, into the Basin and Range Province and Colorado Plateau Province. The best way to describe wildlife in the park is to relate it to habitats represented by vegetational communities. There are five primary vegetation complexes in the two provinces with numerous sub-communities.

Basin and Range Province

Within the Basin and Range Province of Lake Mead NRA, the desert shrub complex is the most prevalent. Within this complex, two distinct communities exist--the creosote bush and blackbrush communities. It generally occurs around both lakes at between 500 and 3,500 feet elevation. Ephemeral wash channels in this area support the desert riparian community. Diurnal lizards and

nocturnal snakes are relatively common in these communities. Densities of bird species are low while small rodents, jackrabbits and bats are common. Carnivores such as the coyote, kit fox, badger, and bobcat also are common. Feral burros and horses and domestic livestock graze these communities.

The woodland vegetation complex is represented only by the pinyon-juniper community in Lake Mead NRA. Within the Basin and Range Province, this community is found only at elevations above 4,500 feet in the Newberry Mountains. Reptiles are not as well represented here as in the lower-elevation communities. Bird and mammal species are well represented, and the area is used as an upland-game hunting area. Larger mammals are frequently sighted in this community.

The aquatic community complex contains four distinct communities--desert spring, lake, stream and stream riparian communities. The desert spring community supports cottonwoods, willows, mesquite, desert willow and tamarisk along with numerous mesic and salt tolerant herbs including sedges, rushes, cattails and salt grass. This community supports resident and migrant bird and mammal populations including bighorn sheep.

The stream riparian community is found along the Las Vegas Bay and the Muddy, Virgin and Colorado Rivers. Narrow mesic canyons in the Newberry Mountains containing intermittent flows also support riparian vegetation similar to the desert spring community. Amphibians including frogs and toads are representative while beavers, desert bighorns, feral burros, domestic cattle, and coyotes are noticeable.

Freshwater streams and lakes also exist. The stream community is found in the waters of the Colorado River (upstream from Lake Mead), the Muddy and Virgin Rivers, and the clear water stretches below Davis Dam. There are additional locations for the stream community in the vicinity of Rogers Springs and in some of the side canyons below Hoover Dam.

The lake community is represented by Lakes Mead and Mohave. Lake Mead supports an active game fishery featuring largemouth bass, striped bass, crappie, trout, green sunfish and bluegill. Lake Mohave, with its cold upstream water temperatures, was known for its excellent trout fishing in the late 1970's. Striped bass became established in the 1980's and today both species are sought after by anglers.

Late each spring on Lake Mohave, the transition zone between colder uplake and warmer downlake waters provides an orange display of algae. There is a corresponding change in game fish associated with this transition. Below this transition zone, one can expect fewer trout and an increasing number of largemouth bass. Birds in this community include western and eared grebes,

gulls, egrets, herons, several species of shorebirds, eagles, white pelicans and osprey.

Colorado Plateau Province

The most abundant community on the Shivwits Plateau, the pinyon-juniper community, extends from Snap Point to Andrus Canyon. The predominant species are Utah juniper and pinyon pine with ponderosa pine and big sagebrush stands common. In addition, plants commonly occurring in this community are Gambel oak, gooseberry, squawbush and snowberry.

The sagebrush community consists mainly of sagebrush and rabbitbrush that dominates a large portion of the Shivwits Plateau.

There also are small stands of oak woodland community along the edges of the plateaus. These stands contain New Mexico locust, pinyon pine, Utah juniper, barberry and chokecherry.

The Colorado Plateau communities include: mule deer, coyote, badger, wood rat, gopher, field mice, cottontail and jackrabbits. Birdlife is diverse while the reptile populations are low. Desert bighorn are known to be transient throughout the region.

THREATENED, ENDANGERED OR CANDIDATE SPECIES

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, there are 17 species of threatened, endangered or candidate plants and wildlife that occur in Lake Mead NRA. Six species of plants known to occur within Lake Mead NRA are considered candidates for listing by the U.S. Fish and Wildlife Service (Federal Register, 1991). These include: bearpaw poppy (Arctomecon californica), sticky buckwheat (Eriogonum viscidulum), Moapa Valley milkvetch (Astragalus geyeri var. triquetrus), bicolored beardtongue (Penstemon bicolor var. roseus), beardtongue Penstemon distans and rose (Rosa stellata). Two of these species (bear paw poppy and sticky buckwheat) are listed as endangered by the State of Nevada. The recreation area is becoming increasingly important as a refuge for these species as urban development in the Las Vegas and Moapa Valleys is reducing population size and diversity. These values were recognized in the preparation of the GMP where the known habitat for these species was included in the Environmental Protection Subzone of the park's Natural Zone.

Nine listed species of wildlife occur within Lake Mead NRA including one mammal, three birds, four fish and one reptile. These include: Townsend's Western Big-Eared Bat (Plecotus townsendii ssp. townsendii), California brown pelican (Pelecanus occidentalis ssp. californicus), peregrine falcon (Falco peregrines) bald eagle, (Haliaeetus leucocephalus), bonytail chub

(Gila elegans), humpback chub (Gila cypha), Colorado Squawfish (Ptychocheilus lucius), razorback sucker (Xyrauchen texanus), and desert tortoise (Mohave population, Gopherus agassizii). There are an additional two species that are listed (the Yuma clapper rail and the Mexican spotted owl) which may occur in Lake Mead NRA.

The desert tortoise was listed as an emergency endangered listing in 1990 and later that year officially listed as threatened in Nevada. Since the GMP was completed in 1986, desert tortoise habitat was not used as a criteria for inclusion in the Environmental Protection Subzone. However, habitat surveys are underway to identify habitat critical for desert tortoise survival, and these areas will be incorporated in the park's resource management plan.

Sightings of bald eagles wintering within the recreation area have increased in the last few years. Although isolated sightings have been made in areas such as Swallow Bay and the Overton Wildlife Management Area, the heaviest concentrations seem to be along the Black Canyon between Cottonwood Cove and Hoover Dam and along the gypsum bed shoreline between Temple Bar and Bonelli Bay. Because this endangered species is only known to winter, but not nest, in Lake Mead NRA, the chance of conflict with heavy, summer visitor use is minimal. Migrant and/or breeding peregrine falcons also appear safe due to their seasonal use of the recreation area and isolation from human disturbances.

The bonytail chub is known in the wild in Lake Mohave, one of the only places for this species in the United States. While razorback suckers are abundant (35,000 population estimate) in Lake Mohave, sampling shows they are all old (35 years plus) fish. There is speculation that predation pressure from striped bass and other game fish is eliminating recruitment. The National Park Service, Bureau of Reclamation, Fish and Wildlife Service, Arizona Game and Fish Department and the Nevada Department of Wildlife have formed a Native Fish Work Group to attempt to propagate razorback suckers and bonytail chub in selected Lake Mohave coves where they could grow to sufficient size to minimize predation.

Although not officially listed, there are an additional 17 plant and wildlife species that are candidates for listing and are either known to occur or may occur in Lake Mead NRA. The gila monster is listed as a species of concern by the States of Nevada and Arizona and currently is under review for an official listing by the U.S. Fish and Wildlife Service, but additional data are needed. The species has a habitat that generally includes the entire Mojave Desert, which comprises a large part of the recreation area. Sightings have been made in many areas, but the majority occur in the Newberry Mountains and along the Northshore Road between the Echo Bay and Overton Beach access roads.

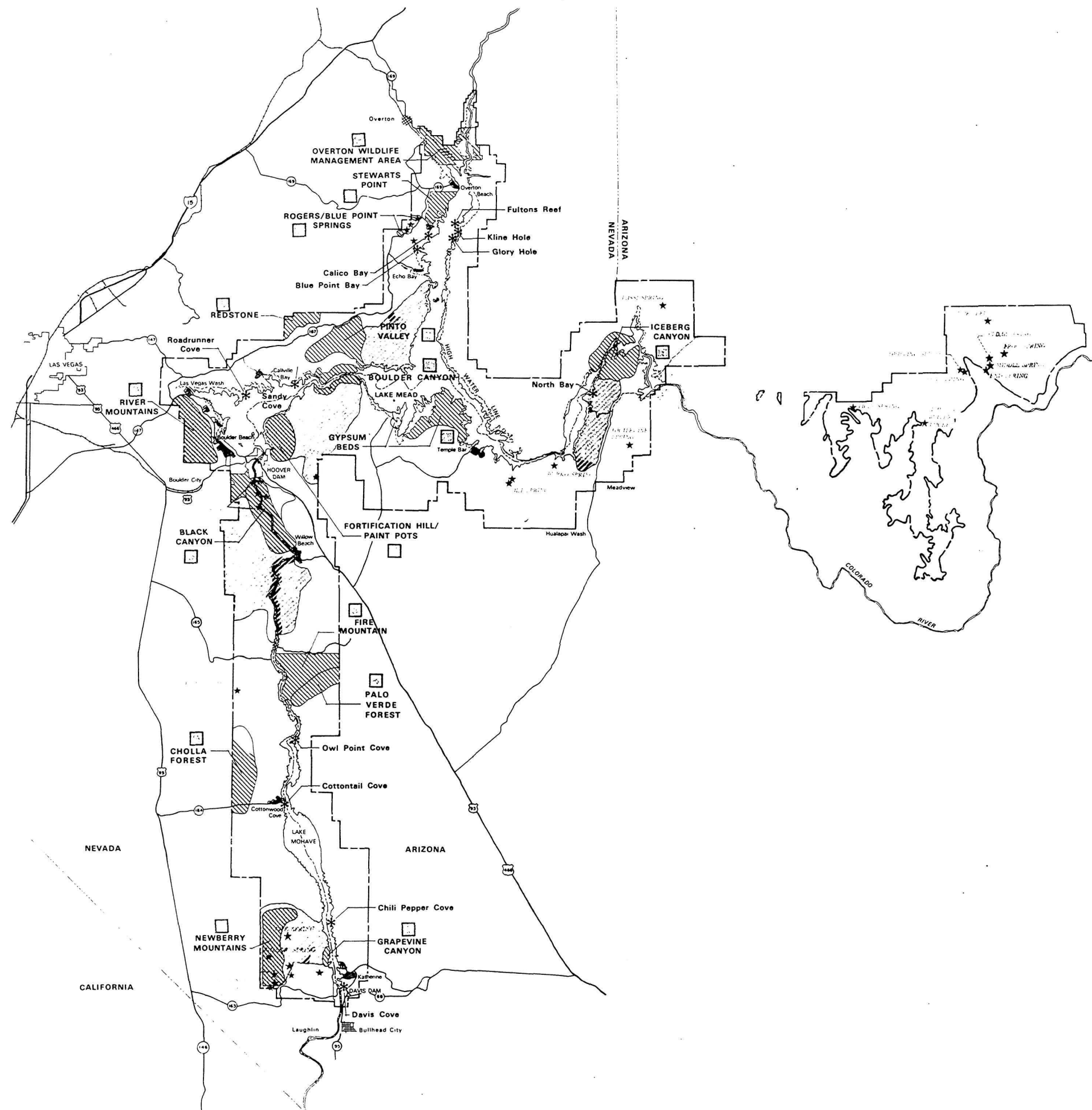
SIGNIFICANT NATURAL FEATURES







Throughout Lake Mead NRA there are many natural features that are important enough to require special attention when considering any planning proposals. These include resources in the Outstanding Natural Features and Protected Natural Area Subzones (see "Existing Management Zoning" page 17); rare, threatened, or endangered species habitat; and areas important for visitor use and appreciation. Uniqueness, critical-habitat protection and aesthetic or recreational value are the criteria for outstanding natural features. Examples of outstanding resources are warm springs, unique geologic formations and plant communities, scenic vistas, desert bighorn lambing grounds and coves that are popular for their sandy beaches or scenic beauty. These features were identified on the Significant Natural Features Map in the General Management Plan and were considered environmental constraints when evaluating development proposals.

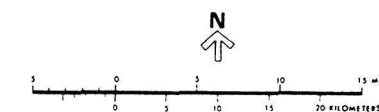
Starting south on Lake Mohave and moving north, these areas as numbered on the Significant Natural Features Map include:

1. Mouth of Grapevine Canyon - northernmost occurrence of smoke trees in Nevada and Lake Mead NRA
2. Newberry Mountains - scenic geologic formations in the Christmas Tree Pass and Spirit Mountain areas
3. Cholla Forest - unique plant association, a fascinating dense stand of teddy bear cholla cactus straddling the boundary north of the Cottonwood Cove access road
4. Palo Verde Forest - northernmost natural occurrence of palo verde trees in the United States and only stand in the recreation area just south of Willow Beach
5. Fire Mountain Area - scenic geologic formations of volcanic origin permeated by very colorful andesite flows
6. Black Canyon of the Colorado River - significant geologic and scenic values, with numerous hot and warm water springs and winter habitat for bald eagles
7. Fortification Hill/Paint Pots - colorful and scenic geologic examples of volcanic activity and erosion
8. River Mountains - desert bighorn roaming grounds and habitat (most productive herd in Nevada)
9. Bowl of Fire/Redstone - impressive and scenic geologic formations of Aztec sandstone

10. Boulder Canyon - spectacular geologic and significant scenic values
11. Pinto Valley - impressive and scenic geologic mix of smooth Aztec sandstone and jagged granite outcrops demonstrating the mountain building geologic process
12. Rogers and Bluepoint Springs - unique and interesting warm water springs
13. Stewarts Point Area - exposed or close-to-the-surface salt deposits and habitat for rare bearpaw poppy
14. Overton Wildlife Management Area - protected aquatic habitat area managed by the State of Nevada under agreement with NPS
15. Gypsum Beds - fascinating crystalline gypsum formations supporting rare plant and wintering bald eagle habitat
16. Iceberg Canyon - scenic geologic formation demonstrating tilting and unique distribution of ocotillo



-  SIGNIFICANT NATURAL FEATURES
-  BIGHORN SHEEP HABITAT
-  OUTSTANDING COVE
-  SPRINGS
-  VIEW
-  NUMBERS KEYED TO TEXT



SIGNIFICANT NATURAL FEATURES **LAKE MEAD** **NATIONAL RECREATION AREA**

ARIZONA - NEVADA
 UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE

CULTURAL RESOURCES

The cultural resources of Lake Mead National Recreation Area represent a broad spectrum of time, peoples and endeavors. The recreation area comprises approximately 135 miles of the western Colorado River, which has played a central role in human affairs for thousands of years and continues to the present.

Lake Mead NRA has been the subject of extensive archeological, anthropological and ethnographical studies. Early 20th century research was primarily conducted by private institutions, while work from the 1930's to the 1960's was primarily government-funded and related to the creation of Lakes Mead and Mohave. More recent work has been carried out in conjunction with management of cultural resources at Lake Mead NRA.

Archeological Resources

Many archeological sites now lie beneath the waters of Lakes Mead and Mohave. However, more than 900 known archeological sites in the recreation area provide evidence of at least 5,000 years of human occupation. The sites show how peoples have adapted to their environment and progressed from the hunter-gatherer peoples beginning 3,000 B.C., to an agricultural society of the Pueblo period (1-1150 A.D.) , and finally to the native peoples who have used and continue to use the land during historical times.

Prior to the construction of Hoover Dam and the creation of the recreation area, some of the areas that were to be inundated by the lakes were surveyed. Researchers concentrated mostly along the rivers and most notably the Virgin River Anasazi complex known as Pueblo Grande de Nevada. The surveys were incomplete and would not meet today's standards.

Only 12,000 acres in the recreation area have been surveyed to Secretary of the Interior standards. Most surveys have been done on a project-by-project basis in order to comply with the requirements of the National Historic Preservation Act. In 1986, more than 10,000 acres were surveyed during the Lake Mead Developed Area Surveys for all areas that either are now developed or have been identified in the General Management Plan as having potential for development. In 1990, 1490 acres in and around the Fire Camp on the Shivwits Plateau also were surveyed.

Four archeological complexes currently are listed on the National Register of Historic Places. They are Grand Wash Archeological District, Overton Beach Archeological District, Lost City archeological sites (Pueblo Grande de Nevada) and the Grapevine Canyon Petroglyphs.

Historical Resources

Cultural resources from the historical past are just as rich and varied. Many of the vestiges of early Mormon settlement and enterprise were along the Virgin and Colorado Rivers; and farms, mills, ferries and towns lie submerged in Lakes Mead and Mohave. Roads and trails that were vital to the transportation of people and goods through this area had to be constructed, and remnants are still intact such as the Grand Gulch Mine-St. Thomas Freight Road. The innovative techniques for utilizing the unpredictable and often perilous Colorado River as a trade corridor are illustrated by the ringbolt, still in place in the canyon wall, that was used to winch steamboats past Ringbolt Rapids as they traveled upstream to Mormon settlements. These sites have been studied and are in the process of being nominated to the National Register of Historic Places.

Cultural resources that represent the more recent past also must be considered, as they are a part of that continuum of use and exploitation that began 5,000 years ago. In 1931, construction began on Hoover Dam. Several structures in the recreation area are directly related to that undertaking. The river gauging station, catwalk, path and cable cars remain from that time as do five tunnels and a railroad grade built to haul construction materials to the dam site. Both have been determined to be eligible for listing on the National Register of Historic Places. The rich cultural heritage of the Lake Mead area continues today as people utilize the varied resources of this oldest national recreation area in the National Park System.

Several historical structures stand as reminders of the exploitation of natural resources in the area. Mining and ranching were early occupations in the area and, because of Lake Mead NRA's enabling legislation, continue to this day. The Horse Valley Ranch (Waring Ranch) and the Homestake Mine are listed on the National Register of Historic Places. A narrow-gauge railroad associated with a mining district has been determined to be eligible for inclusion.

The status of all seven of the above-mentioned historic sites is as follows:

- Homestake Mine (on National Register)
- Grand Gulch Mine-St. Thomas Freight Road (in nomination process)
- Horse Valley Ranch (on National Register)
- Ringbolt Rapids (in nomination process)
- Quartette Mining Company Railroad Grade (eligible)
- Willow Beach Gaging Station (eligible)
- U.S. Government Railroad Grade (eligible)

Lake Mead NRA has 17 structures included on its List of Classified Structures (see listing under "NATIONAL PARK SERVICE FACILITIES"), and all are associated with the National Register sites listed above.

WITHIN PARK LAND USE AND TRENDS

Visitation to Lake Mead NRA has increased from 2.25 million in 1960 to 9.34 million in 1992. Most recreational use is water-oriented. Concessions facilities have grown from small fishing camps to complex, visitor-service operations that include trailer villages, motels, cabin sites, restaurants, marinas and boat tours. This is a direct result of an increasing demand for diversified visitor services. Heavier use of the upper end of Lake Mead (Pearce Ferry, South Cove) can be expected. Houseboats rented from concessioners have become a popular form of visitor recreation. Visitors are spending longer periods of time in the recreation area, creating a heavier impact upon popular campgrounds, backcountry coves and beaches and resulting in congestion and corresponding garbage and sewage accumulation. According to the 1991 Annual Abstract of NPS statistics, Lake Mead NRA leads all units of the National Park System in overnight backcountry stays.

Additional time and money are needed to maintain these areas in an acceptable manner. The demand for backcountry camping is expected to increase and may have an adverse effect upon resources and the park experience of visitors.

Major developed areas and concessions accessible by paved road are located at Katherine Landing, Cottonwood Cove and Willow Beach on Lake Mohave, and Boulder Beach, Las Vegas Bay, Callville Bay, Echo Bay, Overton Beach, and Temple Bar on Lake Mead. There are additional minor launching facilities located at Boulder beach, South Cove and Pearce Ferry area on Lake Mead and at Telephone Cove and six-mile Cove on Lake Mohave. As the population grows in nearby communities, additional day-use can be expected. New launch and day use facilities have been developed at Government Wash and at Princess Cove, and additional facilities are being constructed at South Cove.

There are 1,148 developed campsites (Class A) receiving heavy use during seasonal and holiday periods. However, campgrounds at Callville Bay and Echo Bay still receive only moderate use. Chartered buses carrying visitors from Southern California to the area, and group use of campgrounds has been increasing.

Within the past decade, recreational activities have become more diversified, particularly with the development of personal watercraft. Windsurfing, jet skiing, and SCUBA diving have become popular in addition to the traditional activities of fishing, hunting, water skiing, pleasure boating, and sailing.

Fishing is the prevalent activity in the year's cooler months, while during warmer weather more active recreation takes place.

While both lakes still provide good fishing opportunities and catches, there has been a noticeable reduction in large mouth bass fishing success in Lake Mead. Striped bass fishing success also declined with overall fishing success being lower during the early 1980's. Today, fishing has improved in Lake Mead but not to the extent of the trophy, striped-bass fishery of the late 1970's.

Numerous special events such as power-boat races; endurance, marathon, triathlon and speed-skiing competitions; windsurfing, sailboat and catamaran races; and jet-ski races occur throughout the year.

The off-road-vehicle user is becoming more difficult to confine to the designated backcountry roads provided in the resources management plan. More people are bringing all-terrain vehicles with them as part of their camping equipment, and many of the visitors tow an off-road vehicle behind their recreation vehicles.

The Bureau of Reclamation currently has withdrawals on about 20 percent of the land area. However, proposals to revoke withdrawals on all but about 5 percent of these lands are now awaiting action by the Bureau of Land Management. There are 4,488 acres withdrawn for administration of the Davis and Hoover Dams. A 300-foot-wide management zone has been withdrawn landward from the high-water line of Lakes Mead and Mohave. Except for developments in the vicinity of Davis and Hoover Dams, use of this zone has been negligible. In these areas, the NPS manages the natural and cultural resources and administers special uses.

Hoover Dam, being one of the largest dams in the world, is a definite drawing point to the area. Visitation to Hoover Dam exceeds 700,000 visitors per year. There are daily bus tours to the dam that originate in Las Vegas and include a stop at an overlook of Lake Mead. A proposed bridge near Hoover Dam would eliminate traffic presently crossing Hoover Dam on Highway 93.

The Southern Nevada Water Project, including the Alfred Merritt Smith Water Treatment Facility, is located within the recreation area. A second pipeline has been completed doubling the capacity of the system from 200 to 400 million gallons of water per day. It diverts an average of 392,000 acre feet per year. This project supplies water to the surrounding communities of Boulder City, Henderson, Las Vegas and North Las Vegas. In 1992, the Las Vegas Valley Water District announced its intention to double the capacity of the water treatment facility within the NRA.

The Gold Strike Inn, a casino, motel, restaurant and gas station complex, is located on 36.89 acres of privately-owned land within Lake Mead NRA on U.S. Highway 93. The property originally was a patented mining claim. A 1973 court settlement allowed the National Park Service to purchase all undeveloped pieces in the complex in return for an agreement not to pursue acquisition of the developed portion. The complex is highly visible from the Alan Bible Visitor Center and Hemenway Wash.

The Katherine Mine is a patented mining claim within Lake Mead NRA, located approximately 3 miles northeast of the Katherine Landing development. Although the mine is inactive, a portion of the claim has been subdivided for residential homesites with 56 tracts in private ownership. Most of the lots have houses on them. Access is via the National Park Service access road.

The breakdown for current land use within Lake Mead as well as the planning for acquisition is in the following statistical summary. Additional detailed information may be found in the Land Protection Plan dated December 1987.

Current Ownership	Acres
Federal NPS jurisdiction	1,484,159.37
Federal (Bureau Reclamation jurisdiction)	4,488.47
State and County	2,411.08
Private	10,157.47
Total	1,496,727.80

Number of tracts remaining to be protected	Tracts
State and County (5 AZ, 1 NV, 1 Clark County)	7
Private	161
In less-than-fee ownership (mineral rights)	33

Methods of protection proposed	Acres
Acquisition in fee (priority 1)	2,401.71
Acquisition in fee (priority 2)	240.00
Acquisition in fee (priority 3 - lowest)	2,112.48
Deletion from NRA by boundary revision	1,225.55
Potential deletion pending problem solutions	6,263.32
Resolve validity of mineral rights	59,460.13
Continue Bureau of Reclamation jurisdiction	4,488.47
Statutory acreage ceiling	1,813,354.87

Funding status	
Authorized acquisition ceiling	\$ 7,100,000
Appropriated to date	6,050,000
Obligated to date	5,927,780
Unobligated balance	122,220

Top priorities

Exchange for Arizona state lands near Katherine
Acquire critical parcels at Meadview

Wilderness

The Wilderness Act of 1964 directed the Secretary of Interior to review all roadless areas within units of the National Park System and make recommendations as to the suitability of each area to the President and the Congress.

Based on criteria outlined in the act, the National Park Service initiated a wilderness review of all the lands within Lake Mead NRA. This initial review was completed by the National Park Service in 1974, when 712,100 acres were proposed for wilderness. In the President's transmittal to Congress, the recommendation was made to defer action on the Lake Mead NRA proposal pending a study of western power needs by the Bureau of Reclamation. This review was completed in 1979, and 418,655 acres were determined suitable for wilderness and an additional 262,125 acres were classified as potential wilderness additions (to be designated wilderness when non-qualifying conditions no longer existed).

Revisions to the proposal and the draft environmental statement were being prepared based on public comment when the General Management Plan was initiated. At that time, the National Park Service decided to delay completion of the wilderness plan so it would not preclude options for other authorized uses that might surface during preparation of the General Management Plan.

Nothing is proposed for wilderness designation in the General Management Plan. However, a wilderness suitability map was prepared that identified those lands that meet (558,675 acres) or potentially meet (115,700 acres) the criteria of the Wilderness Act of 1964. NPS Management Policies state, "The Park Service will take no action that would diminish the wilderness suitability of an area recommended for wilderness study or for wilderness designation until the legislative process has been completed."

ADJACENT LAND USE

Although the recreation area is almost totally surrounded by public lands administered by BLM, there are potential developments within close proximity that could have extreme influence on park management in the near future.

Immediately south of Katherine Landing in Arizona, there are residential-commercial-industrial developments, such as Bullhead City, with an estimated resident population of 42,000 and an overnight population of 100,000 to 150,000. This is a fast-growing area of permanent residences, trailer homes, businesses and commercial enterprises.

Across the Colorado River from these communities is Laughlin, Nevada, which has grown from a population of 600 in 1975 to a

community of 7,500 that employs an estimated 18,000 people. This growth will continue at the same pace for the foreseeable future. It is projected that Laughlin will continue to grow, and in the year 2000, will have a population of from 20,000 to 30,000. This puts additional pressure on all facilities at the lower end of Lake Mohave, not only from the residents who will occupy the community, but from all of the secondary use that is generated by the hotels, casinos and recreational park users.

In 1982, the Bureau of Reclamation phased out its housing area at Davis Camp within the southern boundary of the recreation area and has relinquished management of it to the National Park Service. Under special use permit, Mohave County operates this area as a public campground and recreation site.

Southern California Edison operates the Mohave Coal-fired Steam Generating Station, a major industry located some 5 miles south of Katherine Landing on the Nevada side of the river. Rio Alta Vista, a residential subdivision that may eventually include several hundred homes, is located in Nevada upstream from the steam generating plant. Colorado River Properties has purchased land in Nevada from the Colorado River Commission for commercial and residential development immediately south and west of the Southern California Edison property. These developments may bring residential facilities up to the park boundary.

The Community of Mesquite, Nevada, located north and east of the Overton Arm of Lake Mead, has approached the park to construct a paved access road to the east side of the Overton Arm. The community is seeking cooperation from the National Park Service for the development of recreational facilities. The proposal is part of the community's overall plan for attracting additional tourism and growth. This portion of Lake Mead NRA is presently undeveloped, and no facilities are proposed in the General Management Plan. Mesquite is promoting this proposal within the press and to local, State and Federal officials as well as to State and Congressional delegations.

Moapa Valley, which contains the communities of Overton, Logandale, and Glendale, Nevada, has a combined population of 8,000 people and lies on the northern boundary of the park. It is attracting additional permanent residents, and the town of Overton has plans to subdivide an area of agricultural land for development--the first in this valley. The Reid-Gardner Coal-fired Steam Generating Plant, west of these communities, has considerably increased local populations.

Local economies are almost completely dominated by the hospitality industry and tourism-oriented business activities. Las Vegas is supported predominantly by tourists who are attracted through the gaming and entertainment industries. In 1991, 21.7 million visitors came to Las Vegas. In response to

the tourism increases in the past, Las Vegas, Henderson and Boulder City also have grown substantially in the past 10 years to a combined population of 925,000, all being within a 45-minute drive of the recreation area. This population center uses Lake Mead NRA as one of their main recreational outlets. The use of Lake Mead NRA by Las Vegas Valley residents is increasing.

The proposed Lake Las Vegas project was conceived in 1964 and includes a 2,243-acre development immediately adjacent to the park boundary in the vicinity of Las Vegas Bay. The focal point of the project is a 320-acre recreational lake. The lake is currently being filled behind a 4,800-foot, S-shaped embankment dam, 1,500 feet upstream of Northshore Road. The lake will be maintained at 1,403 feet above mean sea level (MSL). At that level, it will have a capacity of 10,000 acre feet with 320 surface acres of water. The lake will be 2 miles long and a mile wide, with 12.3 miles of shoreline.

The project will ultimately include six hotels, five golf courses and 3,500 to 5,000 residential and condominium units with commercial and civic developments. At full development, it will have an estimated permanent population of 12,500 people and an overnight population of between 40,000 and 60,000.

VISITOR USE ANALYSIS

Lake Mead NRA recorded 9.34 million recreational visits and 339 thousand non-recreational visitors in 1992. Use is measured in terms of visits, delineated as the entry of a visitor into the park. Non-recreational use is figured as commuters, inholders, tradesmen, and employees of any Federal, State or local agency or business within the park as measured by traffic counters. Recreational visitors are counted at 22 to 29 different traffic counter locations in the recreation area, primarily at entrances to developed areas and primitive access points.

Due to the proximity of Lake Mead NRA to rapidly growing southern Nevada urban areas and the 24-hour nature of these gaming communities, visitation to Lake Mead has changed accordingly. The lifestyle component of employees of area businesses combined with the daily high temperatures of summer have created a demand for evening and nighttime recreational opportunities. Visitation to Lake Mead NRA has extended to 24 hours, 7 days a week during a considerable portion of the year, requiring additional measures for visitor and resource protection.

The number of Lake Mead NRA overnight and backcountry visits represents a significant percentage of the total number of these type visits to the National Park System. In 1992, there were 1.69 million overnight stays recorded at Lake Mead of which nearly 470 thousand were overnight backcountry stays. In 1991, these numbers represented 8 percent and 25 percent, respectively,

of the total overnight and backcountry stays recorded in the National Park System. In addition, there were 227,272 overnight stays within concession-operated campgrounds in 1992. In 1991, this level represented 31 percent of the NPS total. These levels of use place considerable demand on park facilities, services and personnel.

Regional Recreation Patterns

Besides Lake Mead NRA, the two-state/county region contains a variety of outdoor recreation opportunities at a variety of Federal and State facilities including Grand Canyon National Park, Toiyabe National Forest, Red Rock National Conservation Area, Valley of Fire, Spring Mountain Ranch and Floyd Lamb State Parks in Nevada and Lake Havasu and Alamo Lake State Parks in Arizona. These areas vary from arid canyonlands to forested mountains, and recreational opportunities range from hiking and boating to snow-skiing. Camping is available on Federal lands and at many private campgrounds. Public domain lands administered by the BLM surround Lake Mead NRA and are widely used for dispersed recreation.

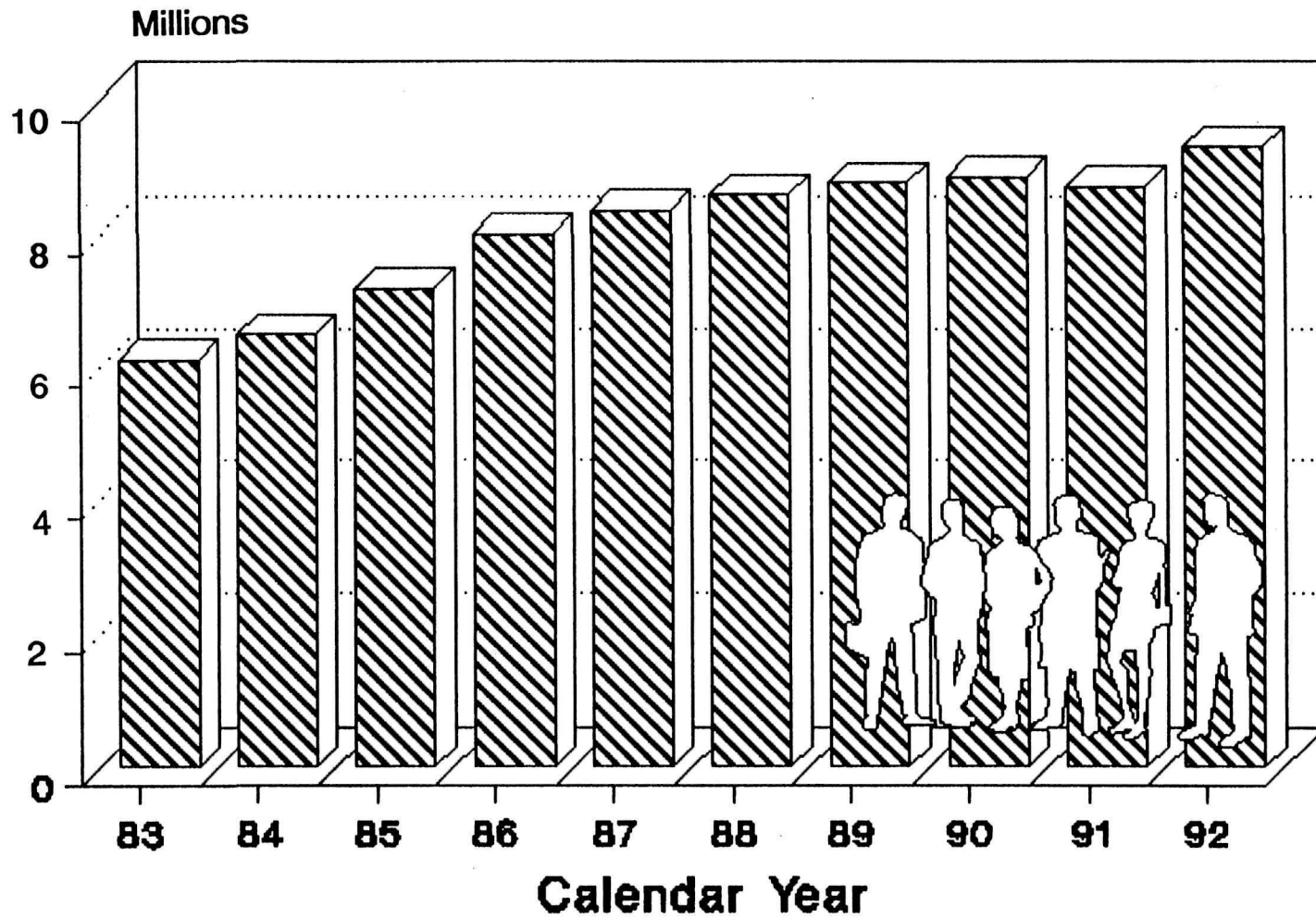
The principal scenic and recreational attractions in the region are the lower portions of the Colorado River in Grand Canyon National Park, Lake Mead National Recreation Area and Hoover Dam, and Red Rock National Conservation Area managed by Bureau of Land Management.

Visitor Origin

As shown in the following pie chart, over sixty percent of the visitors who launched boats at the public launch ramps in 1987 were from Nevada and twenty percent were from southern California. Eighty-one percent of the visitors who rent boats or slips from the concessioners were from Nevada. The high Nevada visitation indicates the day use nature of the area, however each developed area serves different population centers and visitor origin at these areas will vary.

Lake Mead National Recreation Area

Ten Year Summary of Visitation



Visitor Activities

The region's climate facilitates year-round recreation at Lake Mead. Beach use and water sports are greatly limited during the winter, but the best lake fishing occurs at this time. Campground occupancy is higher during the winter months than in the summer. The increase in the number of fishermen combined with visitors escaping northern winter temperatures tends to offset the decrease in the number of other kinds of recreationists.

Hot summertime temperatures tend to discourage backcountry use west of the Grand Wash Cliffs, and most of the summer recreation in this part of the recreation area occurs on or near the lakes. The cooler climate of the Colorado Plateau, east of the cliffs, tends to favor use of the backcountry in this area during the summer, but physical isolation and poor roads have limited such use in the past.

According to the 1977 visitor use survey, park visitors participate in the following activities in the proportions shown below:

97% relax	64% water ski
93% view scenery	33% rock hunt (now illegal)
89% swim	19% attend evening programs
80% camp	11% sail
77% picnic	10% four-wheel
76% motor boat	8% dirt bike
76% hike/walk	8% scuba dive
73% photography	6% backpack
70% fish	3% hunt

A majority of visitors in the 1977 survey indicated a desire to see new areas developed in the recreation area, although there was no consensus on location(s).

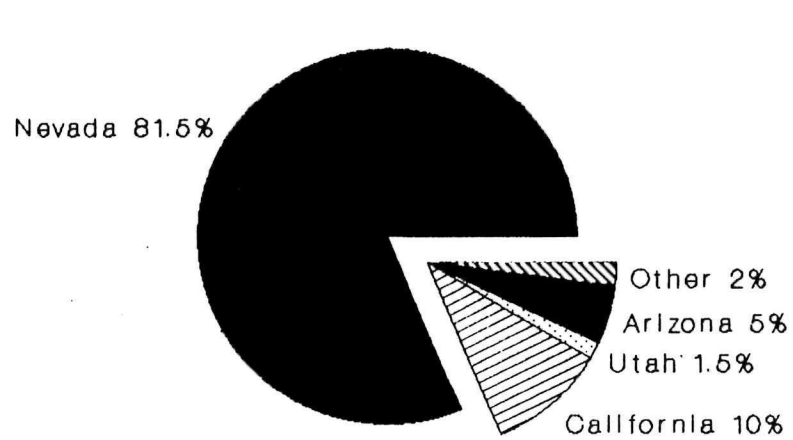
Visitation Patterns

Visitation to Lake Mead has generally been on an upward trend since its establishment as a national recreation area in 1964. This is understandable, as the public has realized the recreation potential of the reservoir, and the development along the lakeshore provided increased recreational services. There has been an approximate 34 percent increase in park visitation over the last 10 years yielding an average annual increase of 3.4 percent (see Ten Year Summary of Visitation figure).

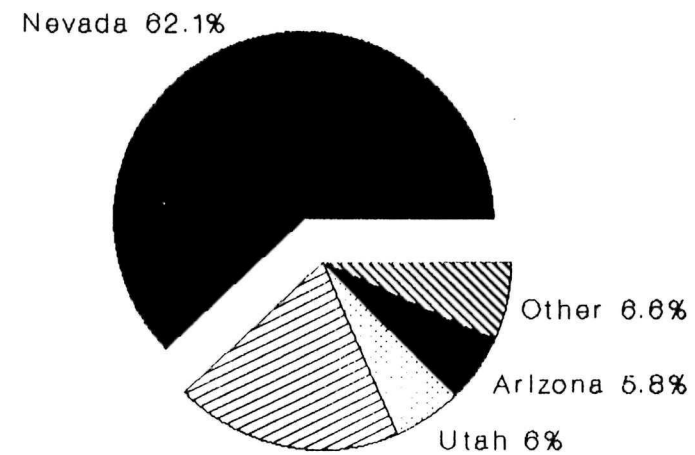
The peak use days of the year usually occur during the three, summer holiday weekends of Memorial Day, Fourth of July and Labor Day, each of which draw over 250,000 visitors over the weekend. The majority of these visitors are in the Boulder Beach and Las Vegas Bay areas on Lake Mead and the Katherine Landing area of

Lake Mohave. Boulder Beach and Las Vegas Bay/Northshore Road tend to attract day users, while Katherine Landing attracts more overnight visitors.

Visitor Origin 1987



Visitors Renting Boats/Slips at Marinas



Visitors Launching Boats/Public Ramps

In 1992, April through September were the peak use months as shown on the "Visitation by Month" figure. About 52 percent of the total year's visitation occurs from April through August, with 79 percent occurring from March through October. Visitation at the developed areas has been relatively uniform over the last 5 years.

The highest monthly visitation occurs in July with the lowest in December. The following table reflects visitor distribution by developed area for these two months.

SUMMARY OF VISITOR USE BY AREA (1992)
Lake Mead National Recreation Area

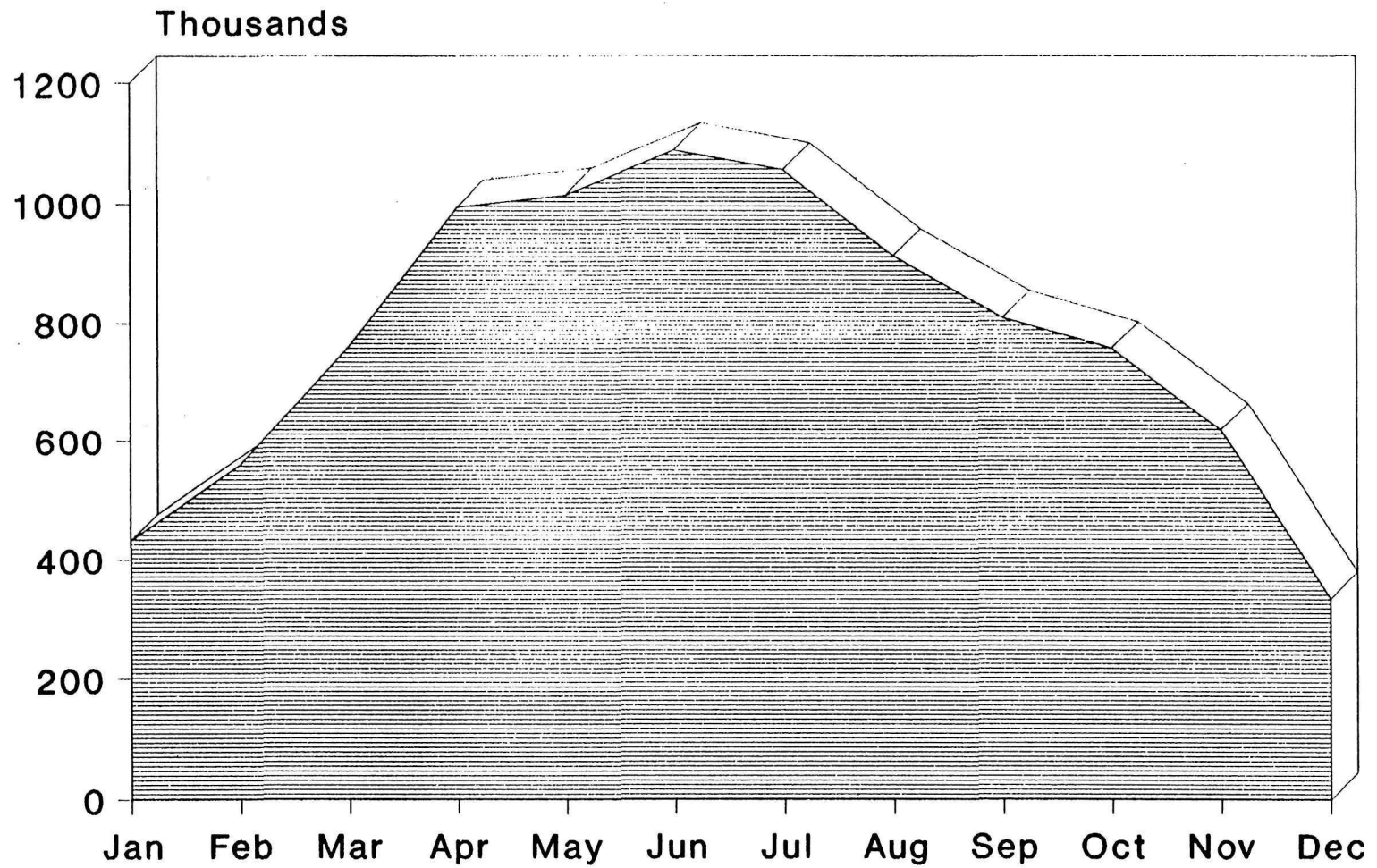
Lake Mead	December	July	Total
Boulder Beach	91,359	339,946	2,830,609
Lakeshore Road	86,090	207,959	2,002,595
Lake Mead Blvd	42,719	109,068	1,063,578
Kingman Wash	775	2,874	26,563
Northshore Road	19,671	28,271	344,452
Valley of Fire Rd.	10,065	18,325	230,133
Temple Bar Rd.	2,828	16,256	119,493
Pearce Fry. Rd.	1,066	14,034	75,441
Misc. Access	16,830	55,407	597,309
Lake Mohave			
Willow Beach Rd.	10,474	26,747	269,447
Cottonwood Rd.	7,260	28,380	211,797
Katherine Rd.	39,376	198,650	1,421,632
Misc. Access	<u>5,477</u>	<u>11,464</u>	<u>150,500</u>
Total	333,385	1,057,381	9,343,549

One of most important and far-reaching changes in visitor use to the recreation area was the development of personal watercraft. These small, personal craft include "thrill craft" such as jet skis and water bikes, as well as sail boards, wave runners, catamarans and other vessels designed to carry one or two people. These vessels are inexpensive compared to boat ownership and are easy to transport and to operate. More traditional users such as power boaters and fishermen often are not supportive of these new users. However, all indications are that this type of water recreation will continue to grow in numbers and popularity.

Future trends in visitation to Lake Mead National Recreation Area can be projected by observing the trends in the past decade, especially as the major urban areas it serves are continually growing. At a growth rate of 3.4 percent per year, Lake Mead NRA will receive approximately 10 million visitors by the year 1995 and 12 million by the year 2000.

Visitation By Month (1992)

Lake Mead National Recreation Area



RANGER ACTIVITIES

In 1992, 11,963 law enforcement incidents were reported and 4,177 violation notices were issued for Lake Mead NRA. These are classified as follows:

<u>Incident/Violation</u>	<u>Case Incident Reports</u>	<u>Violation Notices</u>
Class I Incidents	442	
Class II Incidents	860	472
Road and Driving	1,428	2,696
Boating Incidents	1,225	429
Resource Management and Public Use	1,011	221
Miscellaneous	<u>6,997</u>	<u>359</u>
Total	11,963	4,177

The pressure of increased visitation and regional population growth have created serious management challenges for Lake Mead National Recreation Area in attempting to provide adequate protection and services for visitors and resources. The incidence of all types of antisocial behavior at Lake Mead is increasing each year, including: rapes, assaults, drug abuse, larcenies, burglaries, driving under the influence and public intoxication.

Thirty fatalities were recorded in 1992: 2 in an air crash; 1 in a jet-ski accident; 8 in drownings; 1 in a shooting accident; 2 in motor vehicle accidents; 12 from natural causes, and 4 from suicides. Drug and alcohol abuse are a contributing factor in most accidental deaths that occur in Lake Mead NRA.

Visitors use the area 24-hours a day from spring until fall and on a daily basis year-round. This is particularly noticeable at 3 of the park development areas: Katherine Landing, Boulder Beach and Las Vegas Bay. In these areas, the park is working to establish 24-hour-a-day patrol coverage. The park currently does not currently have adequate resources to fully implement this program.

CONCESSIONS

There are 13 authorized concessioners within Lake Mead NRA including 1 under a concession permit and 12 under long-term concession contracts.

Black Canyon Raft Tour operates a flat-water float trip from Hoover Dam to Willow Beach. Lake Mead Ferry Service provides scenic boat tours of the Boulder Basin and Hoover Dam on Lake Mead.

Seven Crown Resorts owns and operates Echo Bay, Lake Mohave (Katherine Landing), Temple Bar and Lake Mead Resorts, and Forever Resorts operates Cottonwood Cove and Callville Resorts. Las Vegas Boat Harbor (Las Vegas Bay), Lakeshore Trailer Village, Boulder Beach Store, Willow Beach and Overton Beach Resorts all are individually operated by separate companies.

Visitation to the developed areas has increased dramatically over the past 5 years and has had a positive affect upon the sales of the concessioners. This is evidenced by a sales increase of slightly over 50 percent in the period from 1987 to 1991 inclusive. At the Willow Beach developed area, this increase was contributed to by an aggressive promotion campaign on the part of a new concessioner and the addition of 20 rental houseboats. At Lake Mohave Resort (Katherine Landing), the rapid increase appears to be a combination of factors including overflow from the overcrowded conditions at Lake Havasu and Southern California and the rapid population growth in the Bullhead City/Laughlin area.

At Overton Beach Resort, the 1992 addition of a new 45-slip marina and a 42-space overnight recreation vehicle (RV) park have increased sales to the extent that in 1993 this developed area should achieve financial viability.

The Lake Mead western shore developed areas were positively affected by the rapid growth of the Las Vegas/Henderson metropolitan area that is experiencing an influx of some 3,000 persons a month and is one of the fastest growth areas in the United States. Motel occupancies remain "soft" due to the price competition from local casinos with the exception of Echo Bay Resort due to the contribution from the houseboat rental business. Marina slip occupancies remain high at the marinas near metropolitan areas.

Costs of operation at the various concessions on Lake Mead have risen dramatically. The greatest impact has been the fluctuating lake level, which generally is from the high range of 1,220 feet above sea level to a low of 1,190 feet annually. However, the continued drought now has the lake level down in the 1,175 foot area with another drop of some 20 feet projected by 1994. The decreasing lake level has caused major costs to be incurred in repositioning marina anchor and cable and utility systems and/or constructing new systems.

Of concern in providing new and improved services and facilities is the fact that 8 of the park's 13 concession contracts are expired, 6 of which are major visitor service facilities. Some of these concession contracts have been expired for as much as 5 years making it difficult and sometimes impossible for concessioners to get financing for their operations. It appears that this situation may continue for as many as 2 to 3 more

years.

Another concern in concession operations is the effect of the recession in California, which is a major contributor to visitation to Lake Mead National Recreation Area. Although park visitation continues to grow overall, in 1992 concessioners experienced a decrease in sales in all areas except trailer village space and slip rentals.

Besides overseeing the concession contracts and permit, there are a number of commercial use licenses issued for boat repair, boating services, boat brokerage, marine salvage, SCUBA instruction, scenic flights and hunting and/or fishing guide service. The number of licenses fluctuates between 40 and 60 depending on the time of the year.

There are 129 cabin site leases located throughout the park. These sites are inspected by the park concessions staff for compliance with lease agreements.

PARTNERSHIPS

In 1990, the park began a partnership with a private, non-profit organization designed to assist the National Park Service in meeting the demands of the public for the future management of Lake Mead NRA. Community Action for Lakes Mead and Mohave (C.A.L. M.) seeks to form alliances between the National Park Service and interested individuals, businesses and organizations. Contributions range from volunteering time to clean up a cove, to donations of goods, services or money to augment critical resources.

C.A.L.M. shares the National Park Service's commitment to preserve and protect Lake Mead National Recreation Area. Its goal is to instill a sense of pride in the lakes among current and future users through a comprehensive public education program and an environmental education program in conjunction with the Clark County School District.

Some areas in which C.A.L.M. has developed partnerships are:

Adopt-a-Cove Program - Interested businesses, organizations and individuals agree to maintain a litter pick up campaign in a specific cove for one year.

Backcountry Litter Pick-up and Education - User groups agree to police areas and to confine off-road vehicles to designated trails.

Adopt-a-Natural Spring Program - Businesses are providing funding for an ecological inventory of natural springs that occur in the park and for preparation of a rehabilitation plan

for each spring.

Riparian Restoration Program - Donations are solicited to provide funds to grow and plant native vegetation along the shorelines to enhance riparian habitat and protect wildlife diversity.

Lake Mead NRA has also established partnerships with the States of Arizona and Nevada for the construction of recreational facilities derived from gas taxes collected in the respective States. In Arizona, the State Lake Improvement Fund administered by the Arizona Outdoor Recreation Coordinating Commission in conjunction with the Arizona State Parks Board has funded a variety of development projects including, launch ramps, picnic areas and restrooms. In Nevada, the Wallop-Breaux Fund, administered by the Department of Wildlife, has supported the construction of a launch ramp facility consisting of the launch ramp, access road, parking area and restroom. The National Park Service continues to work the respective states to identify priority recreational development projects that serve the boating public.

STATUS OF PLANNING

NAME OF PLAN/STUDY	DATE APPROVED	STATUS
<u>Planning Documents</u>		
GENERAL MANAGEMENT PLAN AND DCPs FOR ALL MAJOR DEVELOPMENTS	12/86	CURRENT
Katherine Landing Zone DCP		NEEDS UPDATING
Cottonwood Cove Zone DCP		NEEDS UPDATING
Willow Beach Zone DCP		UNDER REVISION
Boulder Beach Zone DCP		CURRENT
Echo Bay Zone DCP		CURRENT
Overton Beach Zone DCP		NEEDS UPDATING
Virgin Basin/Temple Bar Zone DCP		CURRENT
Gregg Basin/Grand Wash Zone DCP		CURRENT
VEGETATION MANAGEMENT PLAN	10/92	DRAFT
MINERAL MANAGEMENT PLAN	8/88	CURRENT
NATURAL RESOURCE MANAGEMENT PLAN	8/91	UNDER REVISION
BACKCOUNTRY MANAGEMENT PLAN	7/89	NEEDS UPDATING
QUARTERS MANAGEMENT PLAN	1/86	CURRENT
WATER RESOURCE MANAGEMENT PLAN	8/86	NEEDS UPDATING
CULTURAL RESOURCE MANAGEMENT PLAN	1/85	UNDER REVISION
LAND PROTECTION PLAN	12/89	CURRENT
WILDERNESS PROPOSAL (DRAFT)	1/79	SEE GMP
DEVELOPMENT FEASIBILITY STUDY-FIRE MOUNTAIN	11/76	NEED DCP
<u>Resource studies</u>		
PLANT INVENTORY OF FOUR RIPARIAN SITES	12/92	CURRENT
TRAFFIC ENGINEERING SAFETY IMPROVEMENT STUDY	2/86	CURRENT
LAKE MEAD DEVELOPED AREA ARCHAEOLOGICAL SURVEY (FOR AREAS)	11/86	CURRENT
TECHNIQUES OF REVEGETATION IN LAME	8/85	CURRENT

NAME OF PLAN/STUDY	DATE APPROVED	STATUS
NONSTRUCTURAL FLOOD MITIGATION STUDY LAME	8/85	CURRENT
SURFICIAL GEOLOGY OF PRIORITY AREAS OF LAME	5/84	CURRENT
HISTORIC RESOURCE STUDY-LAME	7/83	UPDATE TO INCLUDE NATIONAL REGISTER SITES
HISTORIC SITES STUDY-LAME	10/82	UPDATE TO INCLUDE NATIONAL REGISTER SITES
CONCESSION MANAGEMENT- VISITOR SURVEY ANALYSIS	12/82	CURRENT
FLORISTICS AND VEGETATION OF THE NEWBERRY MOUNTAINS	5/82	CURRENT
LAKE MEAD DEVELOPED AREA ARCHAEOLOGICAL SURVEY (FOUR AREAS)	6/81	CURRENT
ADJACENT LANDS STUDY	11/81	CURRENT
THREATENED AND ENDANGERED VASCULAR PLANTS OF LAKE MEAD	1/80	NEEDS UPDATING
CARRYING CAPACITY STUDY-LAME	7/80	NEEDS REVISING
HISTORIC RESOURCE STUDY	8/80	UPDATE TO INCLUDE NATIONAL REGISTER SITES
POTENTIAL FLOOD HAZARDS AT WILLOW BEACH	10/80	CURRENT
THE ARCHAEOLOGY OF LAME/A BIBLIOGRAPHY	/80	CURRENT
POTENTIAL FLOOD AND DEBRIS HAZARD AT COTTONWOOD COVE	/79	CURRENT
FLOOD MITIGATION REPORT- WILLOW BEACH	1/79	CURRENT
VASCULAR PLANTS OF LAKE MEAD	2/79	CURRENT

<u>NAME OF PLAN/STUDY</u>	<u>DATE APPROVED</u>	<u>STATUS</u>
HISTORIC RESOURCE STUDY-LAME MINES AND MINING DISTRICTS	4/79	CURRENT
AMPHIBIANS, REPTILES AND MAMMALS OF LAKE MEAD	12/78	CURRENT
EFFECTS OF CONSTRUCTION ON MOVEMENT OF BIGHORN SHEEP-LAME	9/78	CURRENT
BIRDS OF LAKE MEAD	11/78	CURRENT
IMPACT OF FERAL BURROS-LAME	11/78	CURRENT
BIOTA OF LAKE MEAD-A CHECKLIST AND BIBLIOGRAPHY	3/77	CURRENT
MOVEMENT OF DESERT BIGHORN-LAME	4/77	CURRENT
ENVIRONMENTAL SANITATION AND MANAGEMENT PLAN	1/90	DRAFT
CROSS CONNECTION CONTROL PLAN		DRAFT
WATER QUALITY EMERGENCY PLAN		DRAFT

NATIONAL PARK SERVICE FACILITIES

Buildings and Structures - 348

<u>Developed Area</u>	<u>Buildings*</u>	<u>Structures**</u>
Lake Mead		
Boulder Beach	29	66
Las Vegas Bay	19	18
Callville Bay	11	9
Echo Bay	23	8
Overton Beach	7	13
Temple Bar	16	20
Shivwits	6	0
Lake Mohave		
Katherine Landing	23	9
Cottonwood Cove	15	7
Willow Beach	<u>10</u>	<u>8</u>
	189	159

* Buildings include: administrative buildings, residences, comfort stations, maintenance buildings, equipment buildings, firehouses, visitor centers, pumphouses, water treatment stations, information stations, etc.

** Structures includes: vault toilets, courtesy docks, picnic shelters, fish cleaning stations, etc.

Quarters - 64

- Permanent quarters - 36
 - Single family - 32
 - Duplex - 2
 - Fourplex - 1
- Non-permanent quarters - 22
 - Transient sites - 6

6 additional trailer sites are maintained for employees

Historic Structures - 17

Gaging Station	HS-01A	Willow Beach
Gaging Station	HS-01B	Willow Beach
Gaging Station River Crossing Cables	HS-01C	Willow Beach
Gaging Station Residence Foundations	HS-01F	Willow Beach
Main House	HS-08A	Waring Ranch
Storage Building	HS-08B	Waring Ranch
Barn-Garage	HS-08C	Waring Ranch
Privy	HS-08D	Waring Ranch
Corrals	HS-08E	Waring Ranch
Grand Gulch - St. Thomas Road	HS-11	
U.S. Government Railroad Tunnel 1	RR-01	
U.S. Government Railroad Tunnel 2	RR-02	
U.S. Government Railroad Tunnel 3	RR-03	

U.S. Government Railroad Tunnel 4	RR-04
U.S. Government Railroad Tunnel 5	RR-05
U.S. Government Railroad Grade	RR-06
Quartette Mining Company Railroad Grade	RR-08

Radio Systems

Two systems which include the National Park Service system and the monitoring of Marine Band Channel 16, 22 and Nevada Fish and Game.

The National Park Service facilities include:

- 3 radio repeaters
- 149 mobile radios
- 176 portable radios
- 1 console (Park Dispatch)
- 32 base stations
- 21 remote control radios off of base stations
- 1 flash flood warning system
- 12 rain gauges with repeaters
- 1 rain gauge computer
- 3 telephone systems
- 2 travelers information stations

Campgrounds

9 developed campgrounds with 1173 sites
 1 group use campground with 5 group areas (160 person capacity)

		<u>Handicapped</u>
Hemenway Harbor	184 sites	2
Boulder Beach	154 sites	2
Cottonwood Cove (2)	149 sites	1
Echo Bay (2)	166 sites	2
Las Vegas Bay	89 sites	4
Katherine (2)	173 sites	0
Overton	25 sites	0
Temple Bar	153 sites	2
Callville Bay	<u>80 sites</u>	0
Total	1173 sites	

Sanitary Dump Stations

Trailer Sanitary Station Locations:

- Boulder Beach
- Hemenway Harbor
- Las Vegas Bay
- Callville Bay
- Echo Bay
- Temple Bar
- Cottonwood Cove
- Katherine
- Meadview

Concessioner Boat Sanitary Stations

Lake Mead Marina
Las Vegas Bay
Callville Bay
Echo Bay
Overton
Temple Bar
Willow Beach
Cottonwood Cove
Katherine

Roads

The NPS maintains 237 miles of surfaced roads. An additional 800 miles of backcountry roads are maintained on an as needed basis.

Launch Ramps

Listed below are the paved launch ramps and the number of lanes (12 feet wide) provided:

Lake Mead

Hemenway Harbor	4 (48 feet) plus ready lane
Lake Mead Marina	4 side launch (100 feet) ready lane
Las Vegas Bay	4 side launch (100 feet) ready lane
Government Wash	9 (105 feet) plus ready lane
Callville Bay	13 (155 feet)
Echo Bay	9 (110 feet)
Overton Beach	8 (90 feet)
Temple Bar	4 side launch (100 feet)
South Cove	10 (120 feet)

Lake Mohave

Willow Beach	10 (115 feet) plus ready lane
Cottonwood Cove	15 (185 feet) plus ready lane
Katherine Landing	7 (85 feet) plus ready lane
Princess Cove	8 (100 feet)

Airstrips

NPS maintains two paved airstrips and one gravel airstrip

Echo Bay	Surfaced	3600' x 50'
Temple Bar	Surfaced	3900' x 50'
Pearce Ferry	Graveled	2900' x 100'

Parking Lots

Location	Paved and marked single vehicle only	Paved and marked double vehicle parking	Estimated unmarked gravel double	Estimated unmarked gravel single spaced
Hemenway Harbor				
Ski Beach				775
Sailboat Beach				525
Launch Ramp		45		100
Boulder Beach	132	10		1600
Lake Mead Marina	40	95		1700
Visitor Center	64	25		
Las Vegas Bay	110	70	75	1150
Headquarters	45			
Government Wash		156		
Callville Bay	96	175		1375
Echo Bay	135			665
Rogers Springs				16
Blue Point Springs	13			
Overton Beach	40	60		325
Willow Beach	119	45		65
Katherine Landing	327	380	55	200
Cottonwood Cove	89	171		440
Princess Cove			117	89
South Cove			25	100
Pearce Ferry				500
Temple Bar	51	60		410
Total	1,210	1,292	272	10,035

Picnic Sites

Location	Tables	Shelters
Boulder Beach	28 north side	4
	28 south side	
Las Vegas Bay	16	4
Rogers Springs	3	3
Blue Point Springs	2	
Katherine Landing	18	1
Cottonwood Cove	8	1
Willow Beach	15	1
Redstone	2	
Callville Bay	8	2
Total	128	16

Amphitheaters

Location	Seating Capacity
Temple Bar	150
Katherine Landing	200
Boulder Beach	350
Total	700

Water Systems

<u>Location</u>	<u>Storage Capacity</u>	<u>Source</u>
Boulder Beach	2,650,000	Lake Mead
Las Vegas Bay	100,000	B.M.I.
Government Wash	10,000	Lake Mead
Callville Bay	400,000	Lake Mead
Echo Bay	601,000	Lake Mead
Overton Beach	200,000	Lake Mead
Shivwits Fire Camp (FY93)	10,000	Trucked
Temple Bar	600,000	Two Wells
Willow Beach	200,000	Two Wells
Cottonwood Cove	300,000	Two Wells
Katherine Landing	500,000	Lake Mohave
Total	5,571,000	

Wastewater Systems

<u>Location</u>	<u>Lagoon Size</u>
Boulder Beach	1.27 acres lined and aerated 1.13 acres lined 3.87 acres unlined
Las Vegas Bay	1.50 acres lined 2.15 acres unlined 1 monitoring well
Government Wash	septic system (8,000 gallons)
Callville Bay	.90 acres lined and aerated .80 acres lined .60 acres unlined 1 monitoring well
Echo Bay	1.55 acres lined and aerated .50 acres unlined 1.20 acres unlined 3.10 acres unlined and unused
Overton Beach	.34 acres lined and aerated .31 acres lined .68 acres unlined
Temple Bar	.30 acres lined and aerated .50 acres lined 1.31 acres unlined
Shivwits	septic system (5,000 gallon)
Meadview	septic system (1,800 gallon)
Cottonwood Cove	2.50 acres lined and aerated 3.50 acres lined 2.50 acres unlined
Willow Beach	.70 acres lined and aerated .50 acres lined
Katherine Landing	.76 acres lined and aerated .70 acres lined 2.36 acres unlined

Electrical and Telephone System Distributors

Location	Distributors
Boulder Beach	Nevada Power - Centel Telephone
Las Vegas Bay	Nevada Power - Centel Telephone
Callville Bay	Nevada Power - Centel Telephone
Echo Bay	Overton Power District - Moapa Valley Telephone
Overton Beach	Overton Power District - Moapa Valley Telephone
Temple Bar	Citizens Utilities - Power and Telephone
Willow Beach	Citizens Utilities - Power and Telephone
Cottonwood Cove	Nevada Power - Centel telephone
Katherine Ldg.	Citizens Utilities - Power and Telephone

Cabin Sites

Temple Bar	34
Stewart Point	57
Katherine	<u>38</u>
	129

Swim Beaches

There are no swim beaches with life guard coverage, however, the following areas are buoyed for swimming where boating traffic is prohibited and monitored semi-monthly for bacteriological quality:

- Boulder Beach
- Echo Bay
- Overton Beach
- Temple Bar
- Cottonwood Cove

Fish Cleaning Stations

- Katherine Landing
- Cottonwood Cove
- Willow Beach
- Temple Bar
- Hemenway Harbor
- Las Vegas Bay (2)
- Callville Bay
- Echo Bay
- Overton Beach

Fire Houses

- Katherine Landing
- Cottonwood Cove
- Temple Bar
- Boulder Beach
- Callville Bay
- Willow Beach
- Echo Bay

CONCESSION FACILITIES

Lake Mead

Boulder Beach

- Lakeshore Trailer Village - 293 sites
 - Long term sites - 213
 - Short term sites - 80
 - Public Shower/Laundry facilities
 - Dry boat storage - 145 sites
 - Employee housing
 - Permanent units 2
 - Staffing level range - 4 to 6

Lake Mead Resort

- Marina 728 slips
- Dry boat storage - 150 spaces
- Boat fuel
- Boat repair shop
- Boat rentals - 41
 - ski boat - 25
 - patio boat - 10
 - fishing boat - 6
- Marina Store
- Restaurant - 150 seats plus banquet room
- Motel - 42 rooms (pillow count - 100)
 - Swimming pool
- Corporate office
- Staffing level range - 52 to 101

Boulder Beach Store

- General merchandise store
- Snack bar - 15 seats
- Public showers
- Staffing level range - 4 to 7

Lake Mead Ferry Service, Inc.

- Primary vessel is the Desert Princess, a 100' triple-deck sternwheel paddle boat, which has two air conditioned decks, an observation deck, and offers food and beverage service.
- Hoover Dam cruises
 - Scheduled dinner-dance and Sunday breakfast cruises
- Staffing level range - 21 to 58

Callville Bay Resort

- Trailer Village - 97 sites
 - Long-term sites - 90
 - Short-term sites - 7
- Comfort Station
- Public shower/laundry facilities
- General merchandise store
- Marina - 607 slips
 - Open slips - 330

- Covered slips - 277
- Boat rentals - 58
 - Ski boats - 25
 - Houseboats - 29
 - Fishing - 4
- Dry boat storage - 108 spaces
- Boat fuel
- Boat repair
- Automobile fuel
- Employee housing
 - Mobile/manufactured homes - 11
 - Mobile/manufactured dorm units - 1
 - RV/mobile home sites - 3
- Staffing level range - 54 to 74

Echo Bay Resort

- Marina - 339 slips/moorings
 - Open slips - 170
 - Covered slips - 153
 - Buoy field moorings - 16
 - Dry boat storage - 60 spaces
 - Boat fuel
 - Boat Rentals - 104
 - Ski boats - 28
 - Houseboats - 72
 - Patio boats - 4
 - Fishing boats - 10
- Automobile fuel
- Restaurant - 112 seats
- Cocktail Lounge - 48 seats
- Motel - 52 units (pillow count - 112)
- Trailer Village - 127 sites
 - Long-term - 69 sites
 - Short-term - 58 sites
- Comfort Station
 - Public shower and laundry facilities
- General merchandise store
- Employee housing
 - Mobile/manufactured homes - 40
 - Mobile/manufactured dorm units - 2
 - Permanent units - 1
 - RV/mobile home sites - 11
- Staffing level range - 56 to 119

Las Vegas Bay - Las Vegas Boat Harbor, Inc.

- Marina - 745 slips
 - Open slips - 610
 - Covered slips - 35
 - Dry boat storage - 300 spaces
 - Boat Rental - 39
 - Ski boats - 17
 - Patio boats - 15

- Fishing - 7
- Boat repair
- Boat fuel
- Restaurant and lounge - 86 seats
- General merchandise store
- Staffing level range - 44 to 52

Overton Beach Resort

- Marina - 85 slips/moorings
 - Open slips - 45
 - Moorings - 40
 - Dry boat storage - 40 spaces
 - Boat fuel
- Automobile fuel
- General merchandise store
 - Snack Bar - 10 seats
- Trailer Village - 43 sites
 - Long-term sites - 30
 - Short-term sites - 13
 - Public shower/laundry facilities
- Employee housing
 - Mobile/manufactured homes - 2
 - RV/mobile home sites - 42
- Staffing level range - 6 to 13

Temple Bar Resort

- Marina - 124 slips
 - Open slips - 112
 - Moorings - 12
 - Dry boat storage - 200 spaces
 - Boat repair
 - Boat fuel
 - Rental boats - 12
 - Ski boats - 5
 - Patio boats - 3
 - Fishing boats - 4
 - Automobile fuel
- Motel - 18 rooms (pillow count - 76)
- Fishing cabins - 4 (central shower/bath)
- Restaurant - 68 seats
- Lounge - 29 seats
- General merchandise store
- Trailer Village - 116 sites
 - Long-term - 103 sites
 - Short-term - 13 sites
 - Public shower/laundry facility
- Employee housing
 - Mobile/manufactured homes - 21
 - Mobile/manufactured dorm units - 3
 - RV/mobile home units - 2
- Staffing level range - 32 to 52

Lake Mohave

Cottonwood Cove Resort

- Marina - 230 slips
 - Open slips - 214
 - Covered slips - 16
 - Dry boat storage - 300 spaces
 - Boat rentals - 35
 - Ski boat - 20
 - Fishing boat - 4
 - Houseboats - 11
- Gas Station - automobile
- General merchandise store
- Restaurant - 46 seats
- Lodge - 24 rooms (pillow count - 44)
- Trailer Village - 296 sites
 - Long-term sites - 226
 - Short-term sites - 70
 - Public shower facilities
- Employee housing
 - Mobile/manufactured homes - 17
 - Permanent units - 3
 - RV/mobile home sites - 12
- Staffing level range - 40 to 54

Katherine Landing--Lake Mohave Resort

- Marina - 824 slips
 - Open slips - 824
 - Dry boat storage - 250 spaces
 - Boat fuel
 - Boat rentals - 101
 - Ski boat - 21
 - Patio boat - 20
 - Fishing boat - 15
 - Houseboat - 45
 - Boat repair shop
- Gas station - automobile
- General merchandise store
- Restaurant - 94 seats
- Snack bar - 30
- Lounge - 60
- Motel - 51 rooms (pillow count 180)
- Trailer Village - 134 sites
 - Long-term sites - 93
 - Short-term sites - 41
 - Public shower/laundry facilities
- Employee housing
 - Mobile/manufactured homes - 23
 - Stick built permanent units - 6
 - RV/mobile home sites - 2
- Staffing level range - 66 to 137

Willow Beach Resort

- Marina - 195 slips
 - Open slips - 175
 - Moorings - 20
 - Dry boat storage - 50
 - Boat fuel
 - Boat rentals - 62
 - Ski boats - 6
 - House boats - 20
 - Patio boats - 6
 - Fishing boats - 30
- Boat repair
- Gas Station - automobile
- General merchandise store
- Restaurant and bar - 100 seats
- Lodge - 24 rooms (pillow count - 46)
- Trailer village - 75 sites
 - Long-term - 60 sites
 - Short-term - 15 sites
- Public shower/laundry facility
- Employee housing
 - Mobile/manufactured homes - 6
 - Permanent units - 3
- Staffing level range - 22 to 45

MAJOR ISSUES

There are a number of issues confronting park management today and new issues continually surface. Following is a discussion of some of the most critical issues facing Lake Mead NRA today.

RECREATION USE

Visitation growth is creating crowding during peak visitor periods.

As rapid growth in population occurs in the local communities, the scarcity of recreation space places pressure on Lake Mead NRA. Overall park use has increased to 9.34 million in 1992 and is projected to increase to 12 million in the year 2000. The recreation area is now within a 5-hour drive to over 23 million people, and the population increase in the "sunbelt" states is continuing. Recreation opportunities vary within the 1.5 million acre area and there are a wide variety of recreational activities ranging from backcountry hiking to hydroplane racing. Lake Mead is also a 24-hour park as many visitors are attracted to the area during the cooler night-time hours. In addition, Lake Mead receives a large number of international visitors and there are only limited programs and services for this important and growing group of visitors. Recreational and facility planning is needed to manage this increasing demand on the park's natural and recreational resources.

Lack of visitor use information.

There has been only limited analysis of visitor use at Lake Mead NRA. In 1979, a visitor use study was completed that evaluated visitation patterns, visitor origin and visitor activities. The increase in overall visitation and expansion of communities over the last 10 years near the park may significantly influence these characteristics. In addition, there is a need for more specific visitor use information including visitor needs, perceptions and attitudes. An in-depth analysis of visitor use is proposed for FY93 and FY94 that will guide the park in the management of recreation and related visitor facilities.

Increasing conflict in water oriented recreation.

Along with the increase in visitor numbers, Lake Mead also is experiencing a dramatic growth in the use of personalized watercraft such as jet skis, surf skis, wet bikes, wave runners and other craft. These are often operated in a fast, noisy, thrill-oriented manner and increasingly are in conflict with some of the more traditional activities such as swimming, fishing, motor boating and water skiing. Lake Mead also is seeing a large increase in sailboard, small sailboat and houseboat use. This diversity and potential for conflict must be addressed through studies or plans on a lakewide basis.

Backcountry use management conflict.

There also are potential recreational and resource conflicts in the terrestrial backcountry of the park. Due to the rugged topography of the area, there are only limited opportunities for backcountry

shoreline access to Lake Mead. Where roads do exist, there is potential for resource damage due to off-road use. These areas have been strictly managed and in some cases, backcountry roads have been closed to protect significant natural resources. Some of these closures have raised public concern. There are additional backcountry areas of the park that have outstanding resources and recreational opportunity, but lack sufficient visitor use and resource information for adequate management. An intense planning effort is needed to guide the park in the future management of the vast backcountry areas.

VISITOR SAFETY AND PROTECTION IN HIGH VISITATION AREAS

Rapid regional and adjacent gaming communities growth has resulted in 24-hour, 7-day-a-week visitation and an increased diversity in the 9.34 million visitors to Lake Mead NRA. Class I and Class II crime (felony crimes) are increasing with over 1,443 cases recorded in 1991.

Park rangers responded to over 14,000 incidents and made 462 arrests. Around-the-clock coverage is needed to provide visitor protection and emergency response to these visitors particularly in the Boulder and Northshore Districts of Lake Mead and the Katherine District on Lake Mohave.

Boulder and Northshore Districts lie within minutes of greater Las Vegas metropolitan area and adjacent to a proposed new \$4 billion resort and residential area under development. These are the areas most used for local/repeat day or night visits. Gang and narcotic activities are prevalent. They also encompass a large backcountry area with a need to protect fragile desert resources and threatened and endangered species, particularly, from off-road driving.

The Katherine District is adjacent to an urban area with 24-hour gaming and is the nearest marina development within Lake Mead NRA to Southern California recreationists. Nearly 1.5 million visitors use this area annually. Community development is now immediately adjacent to the park boundary, and a number of encroachment violations have been recorded.

ESTABLISH PARK ENTRANCE FEE AND REVENUE MANAGEMENT PROGRAM

During the past several years there has been growing interest and emphasis on increasing revenues to the Federal Government through visitor use fees. Lake Mead NRA prepared a feasibility study for entrance fees in response. Presently, only camping fees are collected. The NPS has evaluated the opportunity for collecting fees within Lake Mead NRA and is proposing an entrance fee program.

The proposal would include construction of ten entrance/fee collection stations at all major access points to developed areas. In the remote districts of the park, implementation of the proposal also would require construction of employee housing. Entrance stations would need to be designed for the harsh desert climate and to accommodate a

variety of visitor use levels.

In addition to fee enhancement, entrance stations could provide needed identity for Lake Mead NRA as a separate and significant autonomous area from the surrounding communities and public lands. Although entrance signs are present along major access roads, visitors enter the recreation area with little understanding of the purpose of the area as a unit of the National Park System. A park entrance program would signify to the visitor that they are entering a special area. Entrance stations would provide an opportunity to contact park visitors and distribute a variety of information on resources, safety, activities and programs.

BURRO MANAGEMENT

Previous studies show that feral burros conflict and are in direct competition for habitat with four of the six major desert bighorn sheep herds within the recreation area. Damage to native vegetation, pollution of desert springs, heavy trailing, soil erosion, and destruction of fragile microphytic soil crusts is occurring. Native vegetation is being eliminated in some areas as a result of intense grazing and, in some areas, burros are in direct conflict with the endangered desert tortoise.

Current management of the exotic burro population, estimated to be 1,600 animals at a minimum, is by interagency agreement with three Bureau of Land Management Districts. Localized capture and removal operations are unable to keep pace with a 20 percent/year population growth. Consequently, population densities and areas extensively damaged by burro use are continuing to increase.

Lake Mead NRA has initiated the preparation of a Burro Management Plan that will identify specific management prescriptions for four burro herds. The plan will address the specific burro herds, habitat requirements, monitoring techniques and management alternatives. The National Park Service will consult with the Bureau of Land Management in the preparation of the plan as a portion of the herds also utilize public lands outside the recreation area. The draft plan and environmental impact statement are scheduled for completion in 1993.

PROPOSED COLORADO RIVER BRIDGE CROSSING

The Bureau of Reclamation is developing a proposal to construct a bridge across the Colorado River in the vicinity of Hoover Dam to reduce traffic and congestion at Hoover Dam. The proposal has created a demand by a local group for a crossing not at the dam but at Willow Beach on Lake Mohave. This alternative 22.5-mile-long road would bisect the park through a potential wilderness area, endangered desert tortoise habitat and prime lambing areas for bighorn sheep, as well as opening up a remote portion of the park to cumulative impacts from visitor use.

The Willow Beach crossing was one of nine preliminary alternatives considered, but it was later rejected by the project management team composed of representatives of the States of Arizona and Nevada, Bureau of Reclamation and National Park Service. New alternatives continue to be proposed that incorporate the agency-proposed crossing but bypass Boulder City. The most recent proposal incorporated the crossing just down stream from Hoover Dam but identified an intersection and a new road in the vicinity of the Alan Bible Visitor Center that would route traffic south of Boulder City. The park is continuing to work with all interests in the preparation of an environmental impact statement for the bridge crossing.

DRUG INTERDICTION

Drug smuggling at remote locations.

Based on events occurring in surrounding communities, it is believed there is a growing, on-going use of the remote portions of Lake Mead NRA for air smuggling of drugs, drug production laboratories and hazardous bi-product waste dumps. Substance abuse in general and use of drugs by park visitors also is increasing in proportion to increasing visitation. The close proximity of the park to the growing urban communities of Las Vegas and Laughlin, Nevada, may be resulting in higher levels of drug related activity than most units of the National Park System.

There is a need for the National Park Service to work cooperatively with county and Federal agencies in the Federal Drug Interdiction Program. These agencies include Las Vegas Metropolitan Police Department, Mohave County Sheriff's Office, the Federal Bureau of Investigation and the Drug Enforcement Agency. Because of the experience developed at Lake Mead NRA in drug interdiction, park staff frequently provides assistance to and is consulted by, law enforcement specialists in other units of the National Park System.

Increase in drug-related crime.

With the addition of a new criminal investigator dedicated to counter narcotics and the use of one current position in undercover narcotics investigations, a program has been initiated in the "War on Drugs" by the park. There are components of the program that are not yet included in this effort. To meet the minimum staffing level necessary to more effectively implement this program, two additional positions are required. In addition, funding is necessary to support undercover law enforcement operations.

FLASH FLOOD HAZARDS AND MITIGATION

Because of their location on the broad alluvial fans adjacent to the lakes, most of the developed areas in Lake Mead NRA are susceptible to flash flooding from the intermittent, but often severe thunderstorms that occur in the desert. In 1974, the Eldorado Canyon developed area was destroyed and nine people were killed when a flash flood struck. At Overton Beach, the park campground was lost in a flash flood during

August of 1990. Willow Beach has been closed to camping except in the concessioner-operated, recreation-vehicle park due to flood hazard. In August 1992, a flash flood in Jumbo Wash destroyed the Willow Beach water transmission main and chlorination building and in February 1993, a flood damaged the trailer village development in Willow Beach Wash.

The National Park Service has completed an intensive study of flood hazards associated with the park developed areas. The analysis identified flood hazard as most severe at Willow Beach, followed by Cottonwood Cove, Katherine Landing and Temple Bar. The hazard at Las Vegas Bay, Overton Beach and Boulder Beach is much less severe because most visitor-use facilities are out of the floodplain. Callville Bay and Echo Bay are the only areas where all facilities are out of the flood plain. However, these areas could still be impacted due to the violent and unpredictable nature of desert flooding.

Flood-hazard mitigation work was proposed for the Willow Beach Development Area in the park's General Management Plan. Since that time, the flood mitigation has been redesigned and a supplemental EIS for Willow Beach is scheduled for release in 1993. However, only limited mitigation action has been taken by the NPS to date, and serious life and safety concerns remain.

Flood-hazard research and mitigation are needed at the other priority development areas where hazards are known to exist.

LAKE LEVEL FLUCTUATIONS

Continued drought in the southwest and western regions of the United States and particularly within the Colorado River Basin has caused lake elevation levels at Lake Mead to decline. Although some fluctuation is normal, levels have declined to the elevation of 20 years ago. In December 1992, the Bureau of Reclamation projected a lake elevation of 1165 feet in July of 1993. That would have been 34 feet below the "normal" 1200 feet elevation and nearly 61 feet below its all-time high of 1225.8 feet. However, winter rains approached record levels and today water levels are twenty feet above the projected levels. Fluctuating water levels remain a concern as the National Park Service and its concessioners are not adequately prepared to maintain facilities when extreme low water conditions occur.

Visitor facilities such as launch ramps, courtesy docks, boat sewage pumpouts, marina services, utilities, etc. would becoming unusable in low water conditions. The situation in 1992 was reaching emergency proportions, yet no funding program was identified to deal with emergency repairs to keep facilities functional. While extreme water levels do not appear to be a problem in 1993, the park needs to identify alternatives for operations in low water conditions.

WATER RESOURCES

Competition for water supplies

Because of the enormous growth in Clark County and especially the Las Vegas Valley, it is estimated that the valley will run out of water before the year 2000 under current trends. The Las Vegas Valley Water District is looking for sources of additional water for the future as total demand will exceed available capacity.

The Water District has filed 146 water rights applications with the State of Nevada to remove 800,000-acre-feet of water from ground-water aquifers. This is about 4.5 times the estimated annual recharge rate of these aquifers, some of which feed springs in Lake Mead NRA. The park is seriously concerned that over-drafting these aquifer systems would dry up or greatly reduce spring flows in the park resulting in loss of riparian vegetation, wildlife and recreational opportunities.

Additionally, a feasibility study is underway to remove nearly 60 percent of the water from the Virgin River for the same purpose. The park depends on the water and nutrient load from the tributary for riparian habitat and the recreational fishery in the Overton Arm of the lake. The area includes that portion of the lake designated as a wildlife management area, managed in cooperation with the State of Nevada.

New proposals continue to surface for additional waters to be taken from the already fully-allocated Colorado River System to sustain Southern California communities. There are also proposals for new power generation facilities associated with the reservoir. These proposals include facilities to be located within the recreation area as well as on adjacent lands. Examples of these proposals are: the Spring Canyon Pumpback Storage Project, Hoover Dam Modification and the Virgin River Diversion. All proposals could have serious impact on the resources and recreational facilities of Lake Mead NRA.

Need for baseline water quality

Lake and river waters are prime park resources currently experiencing intense use and, in some areas, receiving threats from adjacent urban development. Baseline water quality survey data are needed to design an effective monitoring program and to establish a standard for comparison. Water quality monitoring is needed to document the quality of recreational waters in and around marinas, designated swim beaches and popular backcountry use areas. The States of Nevada and Arizona have established water quality standards under the authority granted in the Clean Water Act for recreational waters, and implementation of a monitoring program is necessary to ensure compliance.

Harbor water quality

There is a concern for the quality of waters in the harbors where concession-operated marinas are located, and in heavily used backcountry bays and coves. In these areas, high bacterial counts

have been recorded that indicate possible illegal sewage discharges from recreational watercraft. In addition, there are potential water quality issues associated with the discharge of greywater from houseboats on Lakes Mead and Mohave and the associated impacts to water quality due to spills of fuel and sewage from marina facilities. Disposal of hazardous wastes (batteries, paint, cleaning solvents, etc.) at marina sites may affect water quality. Monitoring programs and additional management may be necessary to provide adequate protection for these waters.

Pesticide loading in waters at Las Vegas Bay

There has been renewed interest in the quality of discharged water through Las Vegas Bay. A recent newspaper article (dated July 30, 1992) reported these waters contained toxic levels of organo-phosphate pesticides (malathion and diazinon). While there are questions concerning the specifics and validity of these samples, there remains a potential for pesticide and other contamination to occur due to nonpoint sources (polluted runoff) discharges and "midnight dumping." The NPS is working in coordination with other Federal, State and local agencies to develop a monitoring program for these chemicals and other compounds to determine their levels in lake waters and possibly their sources.

REPLACEMENT OF SUBSTANDARD, DATED AND INADEQUATE FACILITIES

Facility replacement needs

Most facilities, especially water and sewer facilities, within Lake Mead NRA are 30-40 years old and were built to accommodate an annual visitation of 4.7 million and concession facilities that were half of today's size. Facilities have surpassed their life expectancy of 20 to 25 years, and some, such as campgrounds, were designed for a different user.

Park water/sewer systems regulatory compliance

Additional and increasingly stringent regulatory compliance requirements for drinking water and wastewater facilities is resulting in the majority of park systems not meeting regulatory standards. As such, States have issued and will issue notices of violation for Federally-owned and operated facilities. Added to this is the fact that these systems are no longer of sufficient volume for the expanded concession facilities and increasing number of users. Lake Mead NRA sewage collection and pumping systems are unique in that most of the waste flows are generated at the low point in the system, requiring pumping uphill to treatment/disposal. Since pumping stations operate in series, a single malfunctioning unit affects the operation of the entire system. Increased use of backcountry areas also has dispersed use along the lakeshore and created environmental sanitation problems.

Inadequate park administrative facilities

Park administrative facilities also are not adequate to meet the staffing needs. Many of the structural facilities such as district offices and workshops are deteriorating and do not offer adequate

space to meet staff needs. Park interpretive exhibits are in need of rehabilitation as current exhibits are dated and do not meet the needs of our contemporary visitors.

Lack of adequate park housing

NPS housing is deteriorating and additional housing units are required to provide the level of service necessary to meet increasing visitor use. The park has prepared a housing management plan which identifies housing maintenance needs, new housing needs and replacement of mobile homes. To implement increased visitor and resource protection patrols and/or entrance station programs, additional housing will be critical.

Lack of facilities to serve increasing visitation

There is a need to provide additional visitor facilities in response to increasing visitation. A visitor center at Katherine Landing is needed to respond to the dramatic increases in visitation and adjacent community development in Laughlin, Nevada, and Bullhead City, Arizona. Additional visitor contact facilities are needed at each of the developed areas.

Rehabilitate facilities needed to meet requirements of the American Disabilities Act

In addition to the new facilities needed, most existing visitor and administrative facilities need to be reviewed and modified in compliance with the requirements of the American Disabilities Act. The park is assessing the opportunity of providing handicapped fishing facilities at each of our developed areas.

LOCATION OF COMMERCIAL FACILITIES ON PARK LANDS

There are increasing requests for rights-of-way across park lands to support development of adjacent communities including water pipelines, communication towers, roads and trails and electrical transmission lines. Urban development also is impacting the local and regional air quality as fossil-fuel, power-generation facilities are required to support the continued growth of the developing communities. There is a need for continued involvement with the neighboring communities and adjacent land owners to ensure that park resources and policies are considered in planning and zoning for utility corridors

CULTURAL RESOURCES

Need for baseline inventory

Lake Mead NRA has more than 900 identified archeological and historic sites including 7 National Register sites, and a museum collection of over 7,000 items. However, a complete inventory of the park has not been completed, and many archeological sites have not been recorded and documented as required by NPS guidelines. Additionally, there is inadequate, climate-control space available for storage of museum objects in the park.

National Register Site monitoring and maintenance

National Register sites are not being monitored or maintained. During 1990-1991, rehabilitation work was completed on two sites, however historic sites are deteriorating through neglect. Documentation of existing conditions and treatment reports have not been completed. Significant sites have not been nominated to the National Register and known sites have not been recorded and documented. All of the major developed areas have been surveyed for archeological resources, but these constitute less than 10 percent of the total acreage in Lake Mead NRA. Significant visitor use areas such as the Newberry Mountains have not been surveyed even though the area is known to contain significant archeological sites. Numerous "rock art" sites are also known, however, few have been completely inventoried and none are being monitored in any scientific manner. The few that are being observed are not part of a coordinated monitoring program.

PLANNING

Revision to Development Concept Plans

A General Management Plan for Lake Mead NRA was completed in 1986. However, additional plans or amendments to plans are needed throughout the recreation area. Development planning associated with flood hazard mitigation is the focus of planning at the Willow Beach Developed Area. A lake management plan is scheduled to be initiated in 1993, and a parkwide revenue management program and associated entrance stations will be evaluated.

Additional facility and recreation planning is required. These planning projects include: health and sanitation improvements, visitor service facilities and support facilities. Other critical studies are needed to address the many challenges being faced by park management.

Planning outside park boundaries

There are additional planning issues as lands are developed for a variety of uses immediately adjacent to the park boundary. Included in these issues are residential and commercial developments at Katherine Landing, Las Vegas Bay, Overton and Mesquite. There are a number of proposed transportation projects that will require cooperative planning efforts including Highway 163 reconstruction and the proposed bridge crossing at Black Canyon.

The majority of the lands adjacent to Lake Mead NRA in Arizona and Nevada are public lands under the administration of the Bureau of Land Management. Many of the park zoning and development issues directly affect adjacent lands. There is a need for cooperative and continuous land-use planning and management between the two primary land management agencies in the area.

INTERPRETATION

During the past several years, interpretation at Lake Mead NRA has

been passive and limited to staffing the main park visitor center located along U.S. Highway 93 and conducting limited, ranger-led activities during the winter months. This level of visitor service is not adequate to meet the minimum needs of the 9.34 million visitors that use Lake Mead NRA on an annual basis.

Present interpretation and visitor education facilities are very limited. Exhibits in the main park visitor center and three contact stations are outdated and in poor repair, and non-existent at the other six developed areas. Planning has been initiated for the replacement of the exhibits at the Alan Bible Visitor Center and for the exhibits for the Bureau of Reclamation visitor center at Hoover Dam presently under construction.

Interpretation in the form of interpretive signs and waysides is extremely limited. At present there are less than ten interpretive signs in the park. The first wayside exhibits are presently in the planning stage. There are two formal and two primitive amphitheaters with outdated lighting and projection capabilities and two self-guided nature trails, one of which will cease to exist when the Lakeshore/U.S. 93 access is relocated.

There are no other interpretive facilities in the park such as shade ramadas and meeting areas/circles. The lack of such facilities is hampering the park's ability to provide interpretive activities that are most effective for its visitors.

NATURAL RESOURCES

Need for baseline information

There is a major deficit of information for many fundamental physical and natural resources of Lake Mead NRA. Baseline surveys and monitoring are needed, at a minimum, for soils, waters, vegetation (condition, trend and sensitive species) and wildlife. In the more remote portions of the area, it is likely that new information on rare plants and animals, including the identification of new species, would be found. Baseline resource inventories provide general information upon which monitoring strategies and planning needs can be identified. Baseline inventories and applied research are needed throughout the area, and efforts will continue to build a resource management program focused on key management issues. The park is currently developing a Geographical Information System for the storage and management of a diversified resource database.

Bio-regional approach to management

Lake Mead NRA, in cooperation with Federal, State and local agencies, is becoming a major participant in the resolution of regional conservation issues. The park is playing a key role in the development and implementation of the Clark County Desert Tortoise Habitat Conservation Plan; in developing an interagency approach to investigating the distribution and taxonomy of the Las Vegas Valley

Leopard Frog (Rana onca), previously believed to be extinct; in the augmentation of the native fish populations on Lake Mohave; in the management of feral burro populations; and in the development of interagency agreements for the management of rare plant populations. There are additional resources that would benefit from interagency and private sector interaction and cooperation.

Disturbed site rehabilitation

Within Lake Mead NRA, there are large areas of soil and vegetation disturbance resulting from past land uses that include burro and livestock grazing, mining, illegal off-road vehicle use and failed development plans. The park has made considerable progress in eliminating incompatible land use where it occurred, and there are now areas where revegetation/restoration is appropriate. Native plant propagation capability is being developed in the park, and disturbed-land restoration is included in highway construction and demonstration spring-restoration projects. Riparian areas have been degraded through historic land use and invasion of exotic tamarisk. These areas need to be inventoried and priorities set for restoration.

Fisheries management

The fisheries program in Lake Mead and Lake Mohave has traditionally been managed by State wildlife agencies. The role of the NPS has generally been limited to reviewing fishery management proposals for impact on park administration and operations. In the past few years, there has been disagreement over fisheries issues. The park is pursuing a more proactive role in the management of the fishery, proposing actions where they are appropriate within NPS management policies. The NPS is represented on an interagency fishery management team for recreational and native fish. This interagency approach is being formalized through an interagency agreement.

Grazing management

In 1992, the park renewed an earlier Memorandum of Understanding (MOU) with the Las Vegas District of the Bureau of Land Management and Bureau of Reclamation for the management of domestic livestock grazing within Lake Mead NRA. This MOU was revised to more closely reflect the guidelines established in the National Umbrella MOU between the National Park Service and Bureau of Land Management for grazing management and administration. The revised MOU more closely reflects the discretionary nature of grazing within Lake Mead NRA and better defines the role of the National Park Service as the decision maker for grazing determinations and prescriptions. The park intends to follow up with a similar revision of the MOUs with the Bureau of Land Management's Kingman Resource Area and the Arizona Strip District Offices to better define management roles in grazing administration.

DETERIORATING AIR QUALITY

Lake Mead NRA is a Class II air quality area. Over the last several years the park has begun to experience a number of days with poor visibility due to regional haze. The source of the haze has not been

determined. The Environmental Protection Agency is currently researching regional visibility degradation attributable to the coal-burning Mohave Generating Plant located at the southern boundary of the park. The primary study area is Grand Canyon National Park, but it will also provide significant data for Lake Mead. There are additional local industrial sources that will affect visibility. These include mining and development of an industrial complex at Apex, Nevada, a proposed tire-burning plant in Moapa Valley and the Reid-Gardener coal-burning power plant located north of the recreation area.

INTERAGENCY COOPERATION

For a number of years the park lacked adequate staff for an active resource management program. Some resource issues that are clearly the responsibility of the National Park Service were left to other agencies for management. These included cattle grazing and feral burros under the management of the Bureau of Land Management, and fisheries and wildlife being managed almost exclusively by the two State wildlife agencies. While these agencies have legitimate roles in the management of these programs, the National Park Service, as the Federal land manager, also has management responsibility. The park is now exerting this authority and negotiating their management role with the various agencies.

The Bureau of Reclamation operational plans for reservoir management can have great impact on park resources. The National Park Service as a whole, and Lake Mead locally, are trying to obtain more influence in operational plans including the annual operating plans and dam release schedules in order to have resource values incorporated into program decisions. Legislation may be recommended to recognize recreational, wildlife and resource values on par with other water use considerations.

In the development of the park's General Management Plan, areas were identified in the "Outstanding Natural Feature Subzone". These areas include examples of geological features, scenic viewsheds and habitat for special plant or animal populations. Many of these features or populations extend outside the boundary of Lake Mead NRA onto public lands administered by the Bureau of Land Management. The Bureau of Land Management is currently circulating for public review a draft Resource Management Plan for the Stateline Resource Area. This plan fails to recognize the majority of the outstanding natural features previously identified by Lake Mead NRA. A cooperative approach to the management of these areas is needed between the land management agencies.

Lake Mead NRA is striving to strengthen cooperative efforts, including more civic activities with community organizations. A park support organization, Community Action for Lakes Mead and Mohave (C.A.L.M.), will supply funding and volunteers for park projects and build closer ties with the surrounding communities. This organization has worked

successfully with the park in the past in the development of an "Adopt a Cove Program" that is building a greater understanding and appreciation for park resources and programs. The park also is working to become more involved with our gateway communities and tourism interests.

ADJACENT LAND USE

Lake Las Vegas

The proposed Lake Las Vegas project was conceived in 1964 and includes a 2,243-acre development on private lands immediately adjacent to the park boundary in the vicinity of Las Vegas Bay. The focal point of the project is a 320-acre lake that is currently being filled behind a 4,800-foot, S-shaped embankment dam, 1,500 feet upstream of the park's Northshore Road. The lake will be maintained at 1,403 feet above mean sea level. At that level, it will have a capacity of 10,000 acre feet, 320 surface acres, a 2-mile length, a 1-mile width and 12.3 miles of shoreline.

The project will ultimately include six hotels, five golf courses, 3,500 to 5,000 residential and condominium units and additional commercial and civic developments. At full development, it will have an estimated permanent population of 12,500 residents and an overnight population between 40,000 and 60,000. This development with its location immediately adjacent to the park could have serious direct and indirect impacts on the administration of Lake Mead National Recreation Area as this population seeks recreational opportunities both adjacent to and within the park.

Community Encroachment (Laughlin and Bullhead City)

In the immediate vicinity of Katherine Landing, there are residential, commercial and industrial developments associated with Bullhead City, Arizona, with an estimated resident population of 42,000 and an overnight population of 100,000 to 150,000. Across the Colorado River, the gaming community of Laughlin, Nevada has a residential population of 7,300 and is projected to grow to 15,000 by the year 2000. This rapid community growth places additional pressure on all facilities at the lower portion of Lake Mohave that are not designed and constructed to accommodate this level of use.

To date, there has been direct encroachment into the park from these developments. A landfill constructed to serve Laughlin abuts park lands and a Bullhead City residential development along the park boundary intruded onto park lands. Boundary surveys, fencing, cooperative planning and additional coordination is needed to prevent local communities from encroaching into the park. Additional management actions will be necessary to address the indirect impacts of community development. There is a need for continued involvement with the neighboring communities to ensure that compatible planning and zoning occurs along the park boundary.

PARK OPERATIONAL SHORTFALL

In 1992, the park assessed its operational program in the formulation of the budget request for fiscal year 1994. The result of that assessment is that there is an \$8.78 million shortfall in park operational accounts needed to provide the minimum level of service to park visitors.

The highest priority is the need to provide 24-hour law enforcement and emergency services in the Boulder Beach, Northshore and Katherine Landing Districts. Violent crimes are increasing. Without additional funding, criminal challenges will overshadow long-range investment in preservation and visitor enjoyment. The number two priority is to provide minimum interpretive services. It is estimated that existing interpretive programs only contact three percent of the park visitors.

The park also is proposing to establish a cultural resource management program, provide required maintenance to park facilities, restore the park boat fleet, establish a more efficient communications system, provide a minimum concessions management program and provide office space for visitor contacts and additional visitor service personnel. This is basically to bring the park up to a minimal operational standard to meet the health and safety standards of the National Park Service and the expectations and demands of over 9 million visitors per year.

RENEWAL OF CONCESSION CONTRACTS

National Park Service concession contracting procedures are currently under review within the Department of Interior and the U.S. Congress. Contract renewal is on hold until the procedures are approved either through a directive from the Department of Interior or through legislation. The park's increase in visitation combined with the inability of the concessioner to make long-term investments into improving visitor service facilities, severely impacts upon the needs of the visitor.

The inability of the Service to provide new concession contracts for our concession operations is affecting the quality of visitor services. Eight of the park's 13 concession contracts have expired, six of which are major visitor service facilities. These concession contracts have been expired for as much as 5 years; it appears that this situation may continue for as much as 2 to 3 more years.

Approximately \$12 million in concessioner-provided visitor improvements are on "hold" as the concessioners are unable to acquire long-term mortgage financing due to the year-to-year concession contract extensions. These improvements include constructing new concessioner employee housing units, two new restaurants, motel and marina expansions, the total remodeling of many existing visitor service facilities, new boat repair facilities; paving of dirt parking areas, improving fire safety code compliance, providing the capability

for investment into environmental compliance programs, implementing architectural themes in developed areas, undergrounding of visually intrusive overhead electrical lines, instituting park plans for new visitor services and many additional projects.

MANAGEMENT OF VACATION CABIN SITES

Following the construction of Boulder (Hoover) Dam and Davis Dam, visitation was encouraged to the Lake Mead and Lake Mohave areas. This philosophical approach included the leasing of Federal reserved lands for the construction of private vacation cabins. In Section 4(b) of the enabling legislation, it is stated that the Secretary may provide for the following activities...(4) "Vacation cabin site use, in accordance with existing policies of the Department of Interior relating to such use, or as such policies may be revised hereafter by the Secretary." Between 1953 and 1965, 137 vacation cabin sites were leased for a 25 year term.

In the 1970's, the National Park Service attempted to allow the individual cabin site leases to expire. The issue was not one of a shortage of National Park System lands available for development, but rather the mandate from the Congress to the Secretary of the Interior to manage these lands as a cumulative expression of a single national heritage, collectively representing superb environmental qualities to be preserved in perpetuity for the benefit and inspiration of all the people of the United States. This met with strong resistance from the cabin site lessees and the NPS agreed: (1) to extend the leases in 5-year intervals, (2) leases carry a nontransferable clause and (3) appraisals will be conducted by independent appraisers.

Today, 129 cabin sites exist at three locations within the park, 34 at Temple Bar, 57 at Stewart Point and 38 at Katherine Landing. As the initial leases on these properties have expired, the leases were renewed for a term of 5 years and this process has continued up to the present. The renewed leases contain a provision that the rate may be adjusted by the Government at the beginning of each 5-year period. The rental rates for these leases are based on independent appraisals and rate increases have been controversial. Current lease rates vary from \$540 to \$765 per year.

The cabin site areas are strictly managed and inspected by the National Park Service to ensure compliance with lease terms and to ensure resources in the area are adequately protected. In addition, the States of Arizona and Nevada are initiating inspections of the water systems in these developments as they currently do not meet state regulatory standards.

MANAGEMENT OBJECTIVES

Management Strategy

The management strategy for Lake Mead NRA was presented in the General Management Plan. It states, "The primary management objective of Lake Mead NRA is to provide a quality visitor experience in a manner that will ensure visitor safety and will protect the significant resources of the area. Other objectives are to provide sound resource management and visitor use programs, which will be implemented in close cooperation with interested publics and governmental agencies. A continuation of the area's recreational environment, natural environment, and its significant cultural resources will be ensured."

"These objectives will be achieved by first providing the visitor with adequate and timely information to understand the beauty, fragility, and inherent hazards of the desert and water recreation. Second, development planning will be done to allow visitors to achieve their goals more quickly and easily so that they can enjoy their time in the NRA. Development will also be planned to reduce resource impact caused by increased visitation. Finally, areas of special natural or cultural resource value will be protected wherever possible from intensive visitor use."

In 1989, the park prepared its Five Year Strategic Plan which outlined the park's basic mission and defined the major goal areas to achieve that mission. This plan was updated in September 1992. The Superintendent's vision of the park is to become a well known, well regarded and well supported unit of the National Park System - an exciting place in which to play, work and learn. Five years from now, Lake Mead will be on the way to becoming a place where visitors are enjoying a wide diversity of both water and land base recreational activities that are supported by an improved park infrastructure and budget to accommodate the broader program thrusts. The park will initiate a large education outreach program based on a multifaceted information research and resource management program, which also helps visitors appreciate and respect the natural and cultural environment where they are enjoying recreational activities. It is envisioned to become a safer environment for the visiting public and seeing many individuals and organizations working in partnership with the park to meet mutual needs and interests. And, to establish an organization that also strongly supports staff in their efforts to serve the public.

The park mission is to:

"Conserve and protect the Lake Mead NRA resources for present and future generations; provide a diversity of high quality, appropriate recreational opportunities, programs, and experiences for visitors; serve the community through public information and education programs; and operate an efficient, effective, and well-run organization that supports staff in their efforts to

serve the public."

Goals and Objectives

The following missions, goals and desired future conditions have been established for Lake Mead National recreation Area. These goals will be the force which will drive the organization's operations, ensuring that it is fulfilling existing needs and providing for future growth and development.

Mission Statement No. 1

Conserve and protect Lake Mead National Recreation Area's resource base for present and future generations. (Resource Stewardship)

Goal No. 1

Effectively manage discretionary park uses and sanctioned park activities to prevent surficial damage (Vail agenda recommendations 1, 2, and 3).

Desired Future Condition (1997)

The park will have implemented a Burro Management Plan and a Grazing Management Plan for the effective control of impacts by feral animals or grazing. Sensitive areas where grazing is not appropriate and priority areas for burro removals will have been established and implemented. The park will have in place effective monitoring and enforcement capabilities on a 24-hour basis, relating to illegal off-road vehicle operations, archeological resources protection, wildlife protection, and fisheries protection as well as internal review procedures and monitoring to ensure that park sponsored or permitted construction activities limit surface disturbance to the extent practical. The park will continue to manage the approved Minerals Management Plan to limit impacts of mining activities.

Goal No. 2

Develop a comprehensive baseline inventory of park resources; include inventory of adjacent influences or regional context of park resources (Vail agenda recommendations 1, 2, 3, and 12).

Desired Future Condition (1997)

The park will have an integrated GIS system incorporating baseline resource areas and conditions. The park will have recent aerial photography to appropriate scale for the entire park, as well as completed order three soils inventories for the entire park. All springs will be inventoried and mapped, as well as sensitive plant and animals species and paleontological resources. Inventories of disturbed areas and restoration needs and potentials will be

completed. State Heritage Programs and other regional data bases will be checked to place park resources in regional context of significance.

All developed areas and backcountry areas identified for specific plans or areas subject to impact because of proximity to easy access or regular visitor-use will be surveyed for archeological or historical resources. Additional areas of high probability will be surveyed so that at least 10 percent of the park has been surveyed for archeological resources.

The documentation for all significant sites and/or structures will have been submitted to the appropriate State Historic Preservation Officer for a determination of eligibility and those eligible placed on the National Register of Historic Places.

Goal No. 3

Develop a comprehensive monitoring program for park resources sufficient to detect trends and changes in the resource base and sufficient to track need for and effectiveness of park management actions for resource protection or enhancement. (Vail agenda recommendations 1, 2, 5, 11, and 13).

Desired Future Condition (1997)

A comprehensive vegetation monitoring network will be in place for long term trend monitoring, including rare and sensitive species, utilization by burro and cattle, and plots for detecting changes within all park vegetation associations and areas. The park will have identified key wildlife species for monitoring as indicators of long term change, and initiated monitoring of those species. Monitoring programs will be in place for water quality, air quality, and soil disturbance. The park will be involved in regional planning as a means of monitoring proposed regional actions potentially impacting the park. A monitoring program for evaluating success of park mitigation and restoration efforts will be established.

A comprehensive monitoring program will be in place for monitoring condition of known cultural sites, particularly those most susceptible to impact by visitors and/or natural weathering. Sensitive sites will be identified, a photo-monitoring program established for each, and regular monitoring accomplished. National Register sites will be inspected on a regular basis. Housekeeping plans for regular monitoring of cultural materials in exhibits at contact stations will be in place, and the collections retained in the park will be monitored.

Goal No. 4

Develop a program of experimental and applied restoration treatments

for park resources which have been or become damaged due to human activities. (Vail agenda recommendations 2, 3, 4, 8, 9, and 11).

Desired Future Condition (1997)

The park will establish criteria to prioritize and guide restoration efforts, including tamarisk removal and spring and shoreline restoration, and restoration of surficial damage from feral animals, mining or vehicles. Active programs and crews will be in place performing experimental treatments of terrestrial and riparian restoration, and applying results for general restoration. The park should be positioned to be among the leaders in arid lands restoration.

All National Register sites will have completed treatment reports and/or HABS/HAER reports. The sites will be maintained to the standard recommended in the report. All NHR sites will be inspected on a regular basis and stabilized or repaired, as needed.

Goal No. 5

Create a data management system for efficient archival, retrieval and manipulation of resource data; provide pathways for the data management system to identify gaps in the baseline resource knowledge. (Vail agenda recommendations 3, 8, and 9).

Desired Future Condition (1997)

The park will have a comprehensive GIS system. Park technical files and reports will be organized with a computerized bibliography in place. Computerized slide and photo files will be in place, as well as archival procedures set for photos, including aerial photos. Data bases will be established for monitoring data, and subject matter, park spring, and project files and archival systems will be in place.

Goal No. 6

Develop minimally acceptable standards for personnel and fiscal resources to manage a professionally competent resource program. Manage an efficient operation of applied personnel and fiscal resources. Develop internal resource programs to base NPS operational standards. (Vail agenda recommendations 3, 9, 12, 38, 39, and 45).

Desired Future Condition (1997)

Resource Management Division will have in place minimally acceptable staffing levels as reflected in an updated position management plan and in the NPS RMAP program and RMP needs assessments. Internal controls will be in place for efficient fiscal and property operations, realizing that a good proportion of the work will be accomplished through contracts or non-traditional(non-NPS personnel) sources. The park will have in place professional standard programs

for such generic NPS activities as collections management, IPM program, research and collection permits, and compliance review. The park will maintain comprehensive Resource Management Plan, strategic plans and needs assessments upon which to base, seek funding and track progress of resource management actions. Resource Management Division will be utilizing a variety of alternative funding sources.

A Cultural Resources program will be in place with staffing levels to meet minimum requirements for adequately protecting the park's cultural resources.

Goal No. 7

Develop cooperative framework for effective resource management programs with all resource agencies and entities with management roles within the Recreation Area; ensure that all cooperative programs are based upon proper interpretation of NPS management responsibilities (Vail recommendations 8 and 11).

Desired Future Condition (1997)

The park will have active cooperative agreements in place as appropriate with the full range of other agencies with roles and interests within the Recreation Area. These agreements and active programs will seek efficient partnerships for furthering common goals; however, they will reflect NPS management authorities to ensure all relationships are in the proper role.

Goal No. 8

Monitor and mitigate transboundary threats to the recreation area resources (Vail agenda recommendations 5, 6, 7, 10, and 16).

Desired Future Condition (1997)

The park will be active in regional land use and activity planning to play a proactive role in issues which may affect the park. The park will have in place resource monitoring programs which will provide information for regional decisions. All such activities will be actively monitored and mitigation for damage to park resources will be sought.

Goal No. 9

Ensure that the park plays a leadership role in environmental awareness and transboundary environmental issues (Vail agenda recommendations 6 and 10).

Desired Future Condition (1997)

The park will have implemented a waste reduction program, recycling, and hazardous materials management programs. The park will seek ways

and alternative technologies to reduce the environmental impacts of our administrative operations. The park will look for opportunities to lead in regional environmental issues before the public.

Mission Statement No. 2

Provide a diversity of high-quality, appropriate recreational opportunities, programs, and experiences for visitors. (Park Use and Enjoyment)

Goal No. 1

Provide for a safe and enjoyable environment for all users during all hours of the day, week, and times of year (Vail agenda recommendations 20, 21, and 22) .

Desired Future Condition (1997)

Lake Mead's Visitor Protection function will be operating at an acceptable standard for 24-hour emergency service coverage. This will include not only enhanced patrol coverage but increased dispatch service, navigational aides service, and water boating patrols.

Since Lake Mead has one of the largest law enforcement type operations in the entire service, the park will have the highest quality professional rangers on staff and will provide leadership for the entire service in this area.

The park will take back areas currently dominated by gangs and other undesirable activities for general public enjoyment. The recreation area will be a fun and safe place for all family members to enjoy.

A comprehensive Park Watch program will be in place to enhance the reporting of incidents throughout the recreation area to include campgrounds, marinas, backcountry usage, and use in high visitation areas. The 911 telephone system and a 1-800 number will be monitored and recorded full-time by dispatch.

Funding will be in place to provide for replacement of structural fire equipment on all engines.

A safe swimming environment will be in place at key swimming beaches through the reinstatement of the lifeguard program.

Visitor safety while walking, swimming, and boating will be enhanced through establishing a glass-free program for the park.

Goal No. 2

Provide leadership in the area of water activities, water safety, training, and boating operations (Vail agenda recommendations 14, 20,

and 21).

Desired future condition (1997)

Have two boating specialist positions to work for the assistant chief branch of water activities one on each lake at the GS 7/9 level. These positions will provide day-to-day water operations on the lakes.

Lake Mead will be recognized as a leader within the National Park Service in water-related activities. The park will be actively involved in writing regulations, developing training packages, assisting other areas and agencies in developing water related programs. Lake Mead will be the principal training base for specialized law enforcement for boating officers in the National Park Service.

A nationwide recognized departmental boating training center under the direction of the National Park Service will be in place at Lake Mead.

The park's boat fleet will meet a high standard with adequate boats and patrols provided.

Goal No. 3

Aggressively pursue all appropriate means to bring the park's existing facility infrastructure up to acceptable standards (Vail agenda recommendations 17 and 46).

Desired Future Condition (1997)

The environmental standards established for drinking water, groundwater, surface water and waste water utility systems have evolved under regulations developed by the Environmental Protection Agency and the States of Arizona and Nevada. The National Park Service at Lake Mead will provide leadership in providing quality services incorporating current technology on a schedule to satisfy regulatory requirements for all facilities.

The management of these systems will have changed from simply maintaining existing systems to designing, constructing and operating more highly technical systems. Specialized system operators will be in place to operate the revamped systems.

Goal No. 4

Establish new visitor facilities where there is demonstrated need for such facilities identified through the planning process (Vail agenda recommendations 14, 18, and 47).

Future Desired Condition (1997)

Lake Mead NRA will provide the appropriate visitor facilities

responding to visitor needs. Facilities will be designed to meet strict architectural standards for each developed area and be of such quality that they are an asset to the visitor. Sizing and locations of new facilities will be determined through public scoping and site planning.

Goal No 5

Upgrade and improve public facilities to industry and accessibility standards (Vail agenda recommendations 14 and 46).

Desired Future Condition (1997)

The public boat launching facilities at Lake Mead will reflect the industry standard which provides adequate width and slope for efficient water access. Each launch facility will have adequate space for boat preparation. Launch ramps and parking will have been designed to accommodate specific vehicles and levels of use determined through physical, biological and social carrying capacity analysis.

Campgrounds throughout the recreation area are designed to provide adequate space for today's vehicles and provide sufficient separation between campsites incorporating a water efficient approach to landscaping. Restrooms are designed to minimize maintenance and water use. Campgrounds are fully accessible and designed as vacation destinations.

All public facilities are constructed and maintained to high engineering, architectural and construction standards. Facilities within the park will be consistent with the purpose of the area and provide services consistent with visitor needs.

Goal No. 6

Provide a program wherein all concessioners services and facilities exceed the quality expectations of park visitors (Vail agenda recommendations 14, and 15).

Desired Future Condition

All concessioner facilities provided are necessary and appropriate within the recreation area and are compatible with an architectural theme and maintained to the highest industry standards.

Goal No. 7

Manage a backcountry road maintenance program that will provide reasonable access to the lakeshore environment while protecting the sensitive natural and cultural resources of the area (Vail agenda recommendations 18 and 21).

Desired Future Condition (1997)

Primitive park roads providing access to the shoreline are maintained to a defined road standard that is generally understood by the visitor. Backcountry roads are maintained to provide a variety of recreational opportunities including primitive and rural recreational experiences.

Goal No. 8

Provide appropriate signing in the park to meet the changing needs of the visiting public including the international visitor (Vail agenda recommendation 23).

Desired Future Condition (1997)

A park-wide sign program is in place that provides appropriate information and direction to park visitors, minimizes the number of signs, and enhances the image of Lake Mead National Recreation Area. The sign program will accommodate the international as well as domestic visitor.

Goal No. 9

Provide a modern in-park communications system capable of responding to multiple communication needs and events (Vail agenda recommendation 14).

Desired Future Condition (1997)

A modern, multi-frequency, in-park communications and flood warning system with an independent frequency dedicated to visitor safety will be in place.

Goal No. 10

Provide for an innovative program of land and water oriented recreation planning to provide diverse recreational opportunities in order to enhance the recreation experience for visitors and preserve park resources (Vail agenda recommendations 18, 19, 20, 21, 23, and 24).

Desired Future Condition (1997)

Lake Mead will have an expanded social science capability and integrate it into the park's lake management planning activities and operational programs. In addition to the visitor-use data, the park will have developed economic information that will highlight the significance of the park to the regional economy.

Lake Mead NRA will have an active planning program that will address the major development issues facing the park. Through cooperative planning and the establishment of partnerships with park neighbors, adjacent land use conflict will be minimized and natural and cultural

resources will be preserved.

The park will provide a broad range of appropriate backcountry experiences, based upon visitor need assessments and resource inventories.

Mission Statement No. 3

**Serve the community through public information and education.
(Environmental Leadership)**

Goal No. 1

Provide the opportunity for each visitor to Lake Mead to receive basic interpretation and information about the unit's significance, it's features and how to enjoy the unit safely (Vail agenda recommendations 25, 27, and 33).

Desired Future Condition (1997)

Visitors to Lake Mead will have the opportunity to receive basic orientation to the recreation area and how to safely enjoy its resources with the least amount of impact at any of the ten visitor centers/contact stations. Stations at the heavily visited Boulder Beach, Katherine, Las Vegas Bay and Callville will be staffed daily, year round. The other stations will be staffed on a part time basis to coincide with the heavy use days/seasons.

The interpretive program will be balanced between personal services and non-personal services. Visitors will be offered a broad spectrum of public programs at seven locations during the winter months, October through April. These programs will reflect the diversity of resources, activities and publics, and programming will include consideration of activities that are not traditionally offered in NPS settings. Regularly scheduled roving will be done at 12 launch ramps/beaches and on the lakes every weekend between April and October.

Recognizing that it is not possible nor realistic that every visitor have personal contact with a park interpreter, basic messages covering basic orientation and information, resource protection, visitor safety and the interpretive park story will be available in a variety of media. Exhibits at each of the ten contact stations will be redesigned to interpret the various park themes and provide basic orientation. A coordinated wayside exhibit/interpretive plan will be in place, with a prioritized list of interpretive sign needs. The first 23 waysides will be completed and 5 interpretive signs completed. Basic information, safety messages, resource updates, trail guides and interpretive messages will be available as handouts that meet NPS standards for handouts and will be identified, developed and distributed in a coordinated manner.

Goal No. 2

Lake Mead National Recreation Area will serve as an outdoor classroom in which students, visitors, local residents can learn about the ecological, natural and cultural values which are preserved at Lake Mead and how those relate to their lives (Vail agenda recommendations 26 and 31).

Desired Future Condition (1997)

Lake Mead's situation in the middle of the Mojave Desert and adjacent to a major metropolitan population of 800,000 provides outstanding opportunities for using the cultural, natural and recreational resources in a variety of educational experiences.

The total education experience should include a variety of experiences. A curriculum integrated on-site day program will be available 5 days a week during 6 months of the year at three locations. Curriculum will be developed for grades K through 12. Curriculum will include complete registration materials, pre- and post-visit activities for the classroom, basic resource information for the teacher that includes vocabulary and bibliography and slide program.

Relationships will be in place with Boulder City Schools and at least one school in each of the other gateway communities as well as two to four Las Vegas Schools, in which park staff are regular participants in school programs that relate to park values. Park staff will be recognized by students and serve as role models and mentors. A broad spectrum of specialized subjects will be offered to the local schools in the form of off-site programs and range from safety to natural and cultural topics.

The basic evaluation, concept and planning for a residential educational facility will be complete. A potential site and organization and desired facility type will have been decided upon. Pilot programs utilizing already existing facilities or campgrounds will be in place and being used by at least three classes each fall and spring. Facility plans will be complete and potential funding sources identified.

Goal No. 3

Provide an aggressive program of educational and information outreach serving existing and potential visitors as well as citizens who do not visit Lake Mead, and broadly communicate the breadth and value of Lake Mead NRA and the National Park Service (Vail agenda recommendations 26, 29, and 34).

Desired Future Condition (1997)

Information about basic orientation and opportunities, recreation

safety, resource protection, environmental ethics and park values will be readily available to all of the diverse user groups. Lake Mead National Recreation Area policies and opportunities will be familiar to a wide diversity of peoples who will better understand the resources and support park programs and activities. Lake Mead will be recognized by the local community as an important component of the National Park System.

Basic park information will be available in a variety of languages. Nontraditional users will feel welcome as a result of efforts to identify and reach these peoples. The National Recreation Area will be seen as a valuable member of the community and one who is willing to participate in community activities to solve community problems. The values protected at Lake Mead NRA will be widely understood and supported by the local communities.

Goal No. 4

Demonstrate environmental leadership by "leading by example" (Vail agenda recommendations 30).

Desired Future Condition (1997)

Lake Mead facilities and operations will reflect the most current techniques in the field of conservation, waste minimization and environmental living. All operations will include the most energy efficient methods of transportation and energy consumption. Recycling will be in place for all employees, concessions, and visitors and will include all materials which can be recycled. The park will subscribe to the philosophy of reduce, reuse, recycle. All purchasing will be done with that philosophy in mind. All park operations will meet environmental laws and regulations. Park landscaping will reflect the natural climate and emphasize the use of native, or at least drought tolerant species. Park staff will be knowledgeable about park programs and support by example the leadership role.

All new facilities constructed will demonstrate that they were designed for this climate and make best use of the "natural" insulating adaptations of this environment. Appropriate alternative sources of energy will be incorporated into all new facilities, and previously constructed facilities will be in a cyclic program to retrofit them. All new landscaping will include irrigation systems that reflect the current state of the art in water conserving systems. An ongoing program to retrofit all other irrigation systems will be in place. The use of reclaimed water in irrigation systems will have been researched and a plan to convert present irrigation systems will be in place.

Goal No. 5

Actively engage public and private partners in resource protection, research, education, and visitor enjoyment that are consistent with

the objectives of protecting park values and conveying their meaning to the public (Vail agenda recommendations 28, 42, and 44).

Desired Future Condition (1997)

Lake Mead National Recreation Area will have a number of partners representing a wide variety of interest groups, individuals and business who are actively and continuously involved in working with the National Park Service to meet its goals. Partnerships will range from individuals volunteering in various positions, to groups volunteering to maintain coves, trails, roadsides, to other federal, state or local agencies, to major corporations undertaking to fund major education programs, films or construction of visitor, education or research facilities.

The park will be knowledgeable of research activities, partnerships and consortiums within the Mojave Desert, Colorado River and Colorado Plateau. As well as having a strong working relationship with the University of Nevada system, as reflected in the agreement for the Cooperative Park Studies Unit, the park will have working relationships with a full cadre of professionals working within our geographic regions. The park will be a well known outdoor laboratory, and be an active partner in long term Colorado River planning and science.

The Volunteer-In-Parks program will be staffed and coordinated by a full time NPS employee. An active and well planned recruitment program will provide a pool of highly qualified and skilled volunteers to assist the NPS in carrying out its mission in all disciplines.

Goal No. 6

Develop minimally acceptable standards for personnel to manage a professionally competent interpretive program (Vail agenda recommendations 32, 38, 39, and 45).

Desired Future Conditions (1997)

The Division of Interpretation will be functioning at minimally acceptable standards as reflected in an updated position management plan. Internal controls will be in place for efficient operations and programming that supports a completed and up-to-date Statement for Interpretation. A professional career path will be in place and creatively and innovation will be expected.

Mission Statement No. 4

Operate an efficient, well-run organization that supports staff members in their effort to serve the public.

Goal No. 1

Create and maintain a highly professional organization and workforce (Vail agenda recommendations 39 and 45).

Desired Future Condition (1997)

Lake Mead employees will meet the highest educational, professional and/or technical standards and have ample opportunity for training, continuing education, and developmental opportunities. They will be leaders in their fields and given opportunities to participate in regional and national park operation initiatives and peer professional organizations.

The grade structure will reflect the standards required and be commensurate with those available in comparable professional agencies and organizations. A monitoring and evaluation process will be in place to assure that the staffing patterns are providing the skills and aptitudes needed to manage Lake Mead in today's environment and in the future. The work environment will support innovation, experimentation and risk-taking and recognize the importance of teamwork and accountability.

Strong lines of two-way communication will be systematically maintained throughout the park between field and headquarters and between divisions in all locations.

Goal No. 2

Strengthen recruitment, hiring, and retention of a culturally diverse workforce (Vail agenda recommendation 37).

Desired Future Condition (1997)

A Lake Mead workforce representing the profile of the surrounding area culture will create and implement programs and operations that meet the needs of the Region's diverse population. Lake Mead decisions will be strengthened by the range of values brought to bear by diverse workforce. Lake Mead will be utilizing both contemporary and creative means to reach out to school children and visitors in under-represented groups to familiarize them with the National Park Service and its career opportunities. The park will be taking full advantage of special hiring authorities such as student co-op programs and will systematically program selected positions for competitive placement of student co-op graduates and other special program initiative placements. Lake Mead will have in place an aggressive Career Conservation Development Corps as a means to enhance conservation and education outreach to local minority urban youths and as a recruitment tool.

Goal No. 3

Provide for a comprehensive program for employee training and development (Vail agenda recommendations 38 and 43).

Desired Future Condition (1997)

Employee Development Plans will be an effective and productive employee development tool at Lake Mead and mechanisms will be in place to assess individual achievement toward career goals. A comprehensive program of broad-based, mission-driven employee training will be available, and ample opportunities provided for specific skills-type training.

A formal apprenticeship program (Maintenance), upward mobility program (General Schedule) and multiple pay or grade program will be in place as well as a formal job sharing/swapping program with opportunities for rotational assignments. All employees will receive training upon reporting to the initial job site as well as a thorough orientation to their specific tasks and responsibilities.

Goal No. 4

Strengthen the identification and loyalty of all employees with the mission of the National Park Service (Vail agenda recommendations 36, 43, and 13).

Desired Future Conditions (1997)

Each employee will understand the mission of the National Park Service and Lake Mead NRA and his/her role in carrying it out. A top-quality orientation program for all Lake Mead employees, volunteers, and key concessioner that covers the Service's mission, traditions, objectives, history, and organization and its relationship to Lake Mead will be in operation. A similar but more basic orientation on the Service and Lake Mead will be in operation and mandatory for all concession employees.

Goal No. 5

Strengthen the financial management capacity of the organization to ensure funds are spent in the most cost-effective manner (Vail agenda recommendations 41, 47, 48, and 49).

Desired Future Conditions (1997)

Park operations will be conducted efficiently with full organizational accountability. A wide variety of funding strategies will be utilized to assure that the least cost and most effective approach is applied. All managerial personnel and those directly involved in budget administration, development, and concession management will have received financial management training and held accountable for analyzing and applying innovative financing strategies to stretch their budgets. The park will have fees/charges that are fair and market competitive in concessions contracts, utility rates, special-use permits, filming permits, and others.

Goal No. 6

Make use of technology to improve efficiency of operations (Vail agenda recommendation 48).

Desired Future Conditions (1997)

Lake Mead will be a leader in applying modern technology to improve the efficiency of its operations from communications systems to flood-warning systems, and computers to Geographic Information System and other areas. Lake Mead employees will have access to current information on advances in technology, practices, and methods that will enable them to maintain their proficiency as professionals and to perform their duties effectively.

Goal No. 7

Correct staffing and funding deficiencies to meet minimum operating standards (Vail agenda recommendation 46).

Desired Future Conditions (1997)

Staffing and funding will be sufficient to meet defined minimum operating standards. The investment in the park's facilities and infrastructure will be protected by adequate routine and cyclic maintenance.

Goal No. 8

Develop alternative funding sources (Vail agenda recommendation 47 and 48).

Desired Future Conditions (1997)

The park will have inventoried, evaluated, and aggressively utilized, where appropriate, all available alternative funding sources for both operational and facility development that might supplement Congressional appropriations. An entrance-fee program will be operational with revenues, further enhancing Lake Mead's operations.

Goal No. 9

Institutionalize a positive customer service ethic and excel in how employees deal with visitors and fellow employees (Vail agenda recommendations 43, 30, and 13).

Desired Future Conditions (1997)

A positive customer service ethic will be keystone to Lake Mead's operation. Employees and volunteers will excel in how they deal with visitors and fellow employees. Park programs and services will be continually adjusted to further enhance our service to the visiting

public. Training programs on providing quality customer service will be in place and mandatory to all employees. A cooperative program with the concessioner to promote quality customer service will be in place.

Goal No. 10

Provide a safe work environment for employees. (Vail agenda recommendations 20 and 21).

Desired Future Conditions (1997)

Safety will become so instilled in employees that it becomes second nature. Lake Mead will have in place the best employee safety program for an area of its size in the National Park Service.

All employee work places are in compliance with OSHA regulations and other applicable standards, codes, etc. Employees are provided with all required personal protective equipment/clothing as appropriate.

Supervisors will have achieved a successful safety program through: 1) arranging for employees to attend scheduled training offerings; 2) overseeing the selection and use of personal protection gear; 3) monitoring work practices in the office and in the field for compliance with NPS, Departmental, and OSHA requirements; 4) performance standards including employee accountability for meeting their listed safety responsibilities; 5) evaluation by supervisors to determine compliance with standards (accountability via observed safe work practices linked with good monitoring/evaluation techniques by the supervisor with consequences via performances appraisal system for failing to meet established standards).

Goal No. 11

Provide quality housing and tenant service to those employees residing within the park (Vail agenda recommendation 40).

Desired Future Conditions (1997)

Lake Mead housing will be considered the best the service can offer and equal to and in most cases superior to common industry standards, normally found in well established cities and towns.

Park housing management will be a participatory process, providing for complete tenant/management involvement. Tenants to participate in management process as co-managers, providing for shared day-to-day maintenance and repair.

APPENDIX

Enabling Legislation

Public Law 88-639
88th Congress, S. 653
October 8, 1964



An Act

78 STAT. 1631

To provide an adequate basis for administration of the Lake Mead National Recreation Area, Arizona and Nevada, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in recognition of the national significance of the Lake Mead National Recreation Area, in the States of Arizona and Nevada, and in order to establish a more adequate basis for effective administration of such area for the public benefit, the Secretary of the Interior hereafter may exercise the functions and carry out the activities prescribed by this Act.

SEC. 2. Lake Mead National Recreation Area shall comprise that particular land and water area which is shown on a certain map, identified as "boundary map, RA-LM-7060-B, revised July 17, 1963", which is on file and which shall be available for public inspection in the office of the National Park Service of the Department of the Interior. An exact copy of such map shall be filed with the Federal Register within thirty days following the approval of this Act, and an exact copy thereof shall be available also for public inspection in the headquarters office of the superintendent of the said Lake Mead National Recreation Area.

The Secretary of the Interior is authorized to revise the boundaries of such national recreation area, subject to the requirement that the total acreage of that area, as revised, shall be no greater than the present acreage thereof. In the event of such boundary revision, maps of the recreation area, as revised, shall be prepared by the Department of the Interior, and shall be filed in the same manner, and shall be available for public inspection also in accordance with the aforesaid procedures and requirements relating to the filing and availability of maps. The Secretary may accept donations of land and interests in land within the exterior boundaries of such area, or such property may be procured by the Secretary in such manner as he shall consider to be in the public interest.

In exercising his authority to acquire property by exchange, the Secretary may accept title to any non-Federal property located within the boundaries of the recreation area and convey to the grantor of such property any federally owned property under the jurisdiction of the Secretary, notwithstanding any other provision of law. The properties so exchanged shall be approximately equal in fair market value: *Provided*, That the Secretary may accept cash from or pay cash to the grantor in such an exchange in order to equalize the values of the properties exchanged.

Establishment or revision of the boundaries of the said national recreation area, as herein prescribed, shall not affect adversely any valid rights in the area, nor shall it affect the validity of withdrawals heretofore made for reclamation or power purposes. All lands in the recreation area which have been withdrawn or acquired by the United States for reclamation purposes shall remain subject to the primary use thereof for reclamation and power purposes so long as they are withdrawn or needed for such purposes. There shall be excluded from the said national recreation area by the Secretary of the Interior any property for management or protection by the Bureau of Reclamation, which would be subject otherwise to inclusion in the said recreation area, and which the Secretary of the Interior considers in the national interest should be excluded therefrom.

SEC. 3. The authorities granted by this Act shall be subject to the following exceptions and qualifications when exercised with respect

Lake Mead
National Recreation
Area.
Administration.

boundaries.

Filing with
Federal Register.

Boundary revision.

Donations of
land.

Property acquisition.

Property exclusion.

Hualapai Indian
lands.

to any tribal or allotted lands of the Hualapai Indians that may be included within the exterior boundaries of the Lake Mead National Recreation Area:

(a) The inclusion of Indian lands within the exterior boundaries of the area shall not be effective until approved by the Hualapai Tribal Council.

(b) Mineral developments or use of the Indian lands shall be permitted only in accordance with the laws that relate to Indian lands.

(c) Leases and permits for general recreational use, business sites, home sites, vacation cabin sites, and grazing shall be executed in accordance with the laws relating to leases of Indian lands, provided that all development and improvement leases so granted shall conform to the development program and standards prescribed for the Lake Mead National Recreation Area.

(d) Nothing in this Act shall deprive the members of the Hualapai Tribe of hunting and fishing privileges presently exercised by them, nor diminish those rights and privileges of that part of the reservation which is included in the Lake Mead Recreation Area.

Recreational
purposes.

SEC. 4. (a) Lake Mead National Recreation Area shall be administered by the Secretary of the Interior for general purposes of public recreation, benefit, and use, and in a manner that will preserve, develop, and enhance, so far as practicable, the recreation potential, and in a manner that will preserve the scenic, historic, scientific, and other important features of the area, consistently with applicable reservations and limitations relating to such area and with other authorized uses of the lands and properties within such area.

Activities.

(b) In carrying out the functions prescribed by this Act, in addition to other related activities that may be permitted hereunder, the Secretary may provide for the following activities, subject to such limitations, conditions, or regulations as he may prescribe, and to such extent as will not be inconsistent with either the recreational use or the primary use of that portion of the area heretofore withdrawn for reclamation purposes:

- (1) General recreation use, such as bathing, boating, camping, and picnicking;
- (2) Grazing;
- (3) Mineral leasing;
- (4) Vacation cabin site use, in accordance with existing policies of the Department of the Interior relating to such use, or as such policies may be revised hereafter by the Secretary.

Hunting, fish-
ing, trapping.

SEC. 5. The Secretary of the Interior shall permit hunting, fishing, and trapping on the lands and waters under his jurisdiction within the recreation area in accordance with the applicable laws and regulations of the United States and the respective States: *Provided*, That the Secretary, after consultation with the respective State fish and game commissions, may issue regulations designating zones where and establishing periods when no hunting, fishing, or trapping shall be permitted for reasons of public safety, administration, or public use and enjoyment.

Regulations.

SEC. 6. Such national recreation area shall continue to be administered in accordance with regulations heretofore issued by the Secretary of the Interior relating to such areas, and the Secretary may revise such regulations or issue new regulations to carry out the purposes of this Act. In his administration and regulation of the area, the Secretary shall exercise authority, subject to the provisions and limitations of this Act, comparable to his general administrative authority relating to areas of the national park system.

October 8, 1964

Pub. Law 88-639

78 STAT. 1041.

The superintendent, caretakers, officers, or rangers of such recreation area are authorized to make arrests for violation of any of the regulations applicable to the area or prescribed pursuant to this Act, and they may bring the offender before the nearest commissioner, judge, or court of the United States having jurisdiction in the premises.

Arrests.

Any person who violates a rule or regulation issued pursuant to this Act shall be guilty of a misdemeanor, and may be punished by a fine of not more than \$500, or by imprisonment not exceeding six months, or by both such fine and imprisonment.

Violations.

SEC. 7. Nothing in this Act shall deprive any State, or any political subdivision thereof, of its civil and criminal jurisdiction over the lands within the said national recreation area, or of its rights to tax persons, corporations, franchises, or property on the lands included in such area. Nothing in this Act shall modify or otherwise affect the existing jurisdiction of the Hualapai Tribe or alter the status of individual Hualapai Indians within that part of the Hualapai Indian Reservation included in said Lake Mead National Recreation Area.

Jurisdiction.

SEC. 8. Revenues and fees obtained by the United States from operation of the national recreation area shall be subject to the same statutory provisions concerning the disposition thereof as are similar revenues collected in areas of the national park system with the exception, that those particular revenues and fees including those from mineral developments, which the Secretary of the Interior finds are reasonably attributable to Indian lands shall be paid to the Indian owner of the land, and with the further exception that other fees and revenues obtained from mineral development and from activities under other public land laws within the recreation area shall be disposed of in accordance with the provisions of the applicable laws.

Revenues and fees.

SEC. 9. A United States commissioner shall be appointed for that portion of the Lake Mead National Recreation Area that is situated in Mohave County, Arizona. Such commissioner shall be appointed by the United States district court having jurisdiction thereover, and the commissioner shall serve as directed by such court, as well as pursuant to, and within the limits of, the authority of said court.

Mohave County, Ariz.
Appointment of commissioner.

The functions of such commissioner shall include the trial and sentencing of persons committing petty offenses, as defined in title 18, section 1, United States Code: *Provided*, That any person charged with a petty offense may elect to be tried in the district court of the United States, and the commissioner shall apprise the defendant of his right to make such election, but shall not proceed to try the case unless the defendant, after being so apprised, signs a written consent to be tried before the commissioner. The exercise of additional functions by the commissioner shall be consistent with and be carried out in accordance with the authority, laws, and regulations, of general application to United States commissioners. The provisions of title 18, section 3402, of the United States Code, and the rules of procedure and practice prescribed by the Supreme Court pursuant thereto, shall apply to all cases handled by such commissioner. The probation laws shall be

62 Stat. 831.
Probation laws.

Pub. Law 88-639

October 8, 1964

78 STAT. 3841.

applicable to persons tried by the commissioner and he shall have power to grant probation. The commissioner shall receive the fees, and none other, provided by law for like or similar services.

Appropriation.

SEC. 10. There are hereby authorized to be appropriated not more than \$1,200,000 for the acquisition of land and interests in land pursuant to section 2 of this Act.

Approved October 8, 1964.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 1039 accompanying H. R. 4010 (Comm. on Interior & Insular Affairs).

SENATE REPORT No. 380 (Comm. on Interior & Insular Affairs).

CONGRESSIONAL RECORD:

Vol. 109 (1963): Aug. 2, considered and passed Senate.

Vol. 110 (1964): Aug. 3, considered and passed House, amended, in lieu of H. R. 4010.

Sept. 28, Senate concurred in House amendment.

Concession Contracts

The contract numbers and contract expiration dates are listed below by area

<u>CONCESSIONER</u>	<u>CONTRACT NUMBER/EXPIRATION</u>
Black Canyon, Inc.	CP-LAME0104-88 12/01/93 Interim Letter of Authorization
Boulder Beach Company, Inc.	CC-LAME012-83 12/31/93 Interim Letter of Authorization
Callville Bay Resort	CC-LAME005-66 12/31/93 Interim Letter of Authorization
Cottonwood Cove Resort	CC-LAME001-73 1/14/94 Interim Letter of Authorization
Echo Bay Resort	CC-LAME010-71 12/31/93 Interim Letter of Authorization
Lake Mead Ferry Service, Inc.	CC-LAME004-88 9/30/03
Lake Mead Resort	CC-LAME003-74 12/31/97
Lake Mohave Resort	CC-LAME007-84 12/31/01
Lakeshore Trailer Village	CC-LAME002-82 12/31/93 Interim Letter of Authorization
Las Vegas Boat Harbor, Inc.	CC-LAME006-74 10/31/93 Interim Letter of Authorization
Overton Beach Resort	CC-LAME008-88 12/31/96
Temple Bar Resort	CC-LAME009-88 12/31/02
Willow Beach Resort	CC-LAME011-63 12/31/93 Interim Letter of Authorization

Inventory of Cooperative Agreements

<u>Agreement Subject</u>	<u>Parties to Agreement with NPS</u>	<u>Expiration Date</u>
Construction, use and maint. of floating boat dock facility	Nevada Dept. of Wildlife	July 18, 1993
Operate and Maintain State Fish Hatchery	Nevada Dept. of Wildlife Bureau of Reclamation	July 18, 1993
Boating Safety	Nevada Dept. of Wildlife	under review
Management of Overton Wildlife Refuge	Nevada Dept. of Wildlife Bureau of Reclamation	July 18 ,1993
Use of Boat in VIP Boating Safety Program	Nevada Dept. of Wildlife	April 10, 1993
Wildfire Management and Coop. Use of Fire Related Resources	Bureau of Land Management Arizona Strip District	May 22, 1994
Cooperative Management of Burros	Bureau of Land Management Las Vegas District	September 30, 1992
Coordination of Joint Programs in Grazing Management	Bureau of Reclamation BLM-Las Vegas District BLM-Arizona Strip District BLM-Arizona State Office	July 9, 1997
Navigational Aids on Lake Mead	U.S. Coast Guard, 11th District	September 8, 1996
Clarify Joint Operations in Boating, Safety, Patrol and Inspections	U.S. Coast Guard, 11th District	July 24, 1996
Mutual Air for Fire and Ambulance Service	Bullhead City Fire Department	February 14, 1996

<u>Agreement Subject</u>	<u>Parties to Agreement with NPS</u>	<u>Expiration Date</u>
Cooperative Fisheries Management Agreement	Arizona Game and Fish Dept. Nevada Dept. of Wildlife Bureau of Reclamation Fish and Wildlife Service	under review
Research on Peregrine Falcon Black Canyon Bridge Project	Bureau of Reclamation Arizona Game and Fish Dept.	April 30, 1993
Fire Protection for the Willow Beach Development Area	U.S. Fish and Wildlife Service	July 26, 1994
Wildfire Management & Suppression	BLM-Las Vegas District	June 26, 1994
Law Enforcement Investigative Services	U.S. Park Police	under review
Burro Management	BLM-Arizona State Office	September 31, 1992
69kv Transmission Line Right-of-Way	Dept. of Energy Western Area Power Administration	Indefinite
Location of Cable on NPS Lands for Operating Pump Station	Bureau of Reclamation	May 14, 2015
Cooperation in Law Enforcement	Mohave County Sheriff's Office Mohave County Board of Supervisors	December 31, 1995
Uniform Procedures for Plans, Construction and Inspection	Clark County Dept. of Building	August 23, 1993
Long Range Programs for Protect. of Wildlife, Lands, Water and Historic Resources	Arizona Game and Fish Commission	June 7, 1994
Providing Office Space	Arizona Dept. of Public Safety	July 31, 1995

<u>Agreement Subject</u>	<u>Parties to Agreement with NPS</u>	<u>Expiration Date</u>
Emergency Medical Services	Bullhead City Community Hospital	January 15, 1996
Flash Flood Alarm System Jumbo Wash (Willow Beach)	National Weather Service	Indefinite
Emergency Medical Services	Boulder City Hospital	April 4, 1993
Completion of Soil Survey	Soil Conservation Service	December 31, 1993
Mutual Aid in the Form of Equipment and Personnel	Boulder City, Nevada	April 30, 1994
Joint Use of Floating Boat Dock	Bureau of Reclamation Las Vegas Valley Water Dist.	May 9, 1994
Water Sample Analysis and Road Maintenance at Southern Nevada Water Treatment Plant	Las Vegas Valley Water Dist.	September 7, 1994
Willow Beach Telephone Service	Citizens Utilities Rural Company	August 31, 2000
Access Road and Launch Ramp at Government Wash	Nevada Dept. of Wildlife	April 10, 1996
Cooperation in Law Enforcement and Mutual Aid	Boulder City, Nevada	August 30, 1995
Joint Mgmt. of Wildlife, SAR and Law Enforcement	Nevada Dept. of Wildlife	April 11, 1995
Providing Manpower in Resource Management Projects	Nevada Division of Forestry	March 31, 1996
Conduct Soil Survey	Soil Conservation Service	April 18, 1996
<u>Agreement Subject</u>	<u>Parties to Agreement with NPS</u>	<u>Expiration Date</u>

Cooperation in Law Enforcement and Mutual Aid	Bullhead City, Arizona	May 20, 1993
Provide Protection Within the Administrative Zones of Davis and Hoover Dams	Bureau of Reclamation	May 28, 1997
Establishing a Dock Watch Program	Lake Mead Yacht Club	June 16, 1993
Natural Fire Management	Grand Canyon National Park BLM-Arizona Strip District	June 30, 1997
Boating Safety Program	Clark County Board of Supervisors	June 30, 1993
Disposal of Misdemeanor Failure to Appear Court Cases	U.S. Marshalls Service	April 21, 1996
Community Alternative Sentencing Program	HELP of Southern Nevada	Indefinite
Access to Clark County Information System	Las Vegas Metro. Police Dept.	Indefinite
Emergency Operations of Hoover Dam for Law Enforcement Purposes	Bureau of Reclamation Western Area Power Administration	Indefinite
Recreational Boating Safety Programs at Lake Mead NRA	U.S. Coast Guard	Indefinite

Printed on recycled paper

