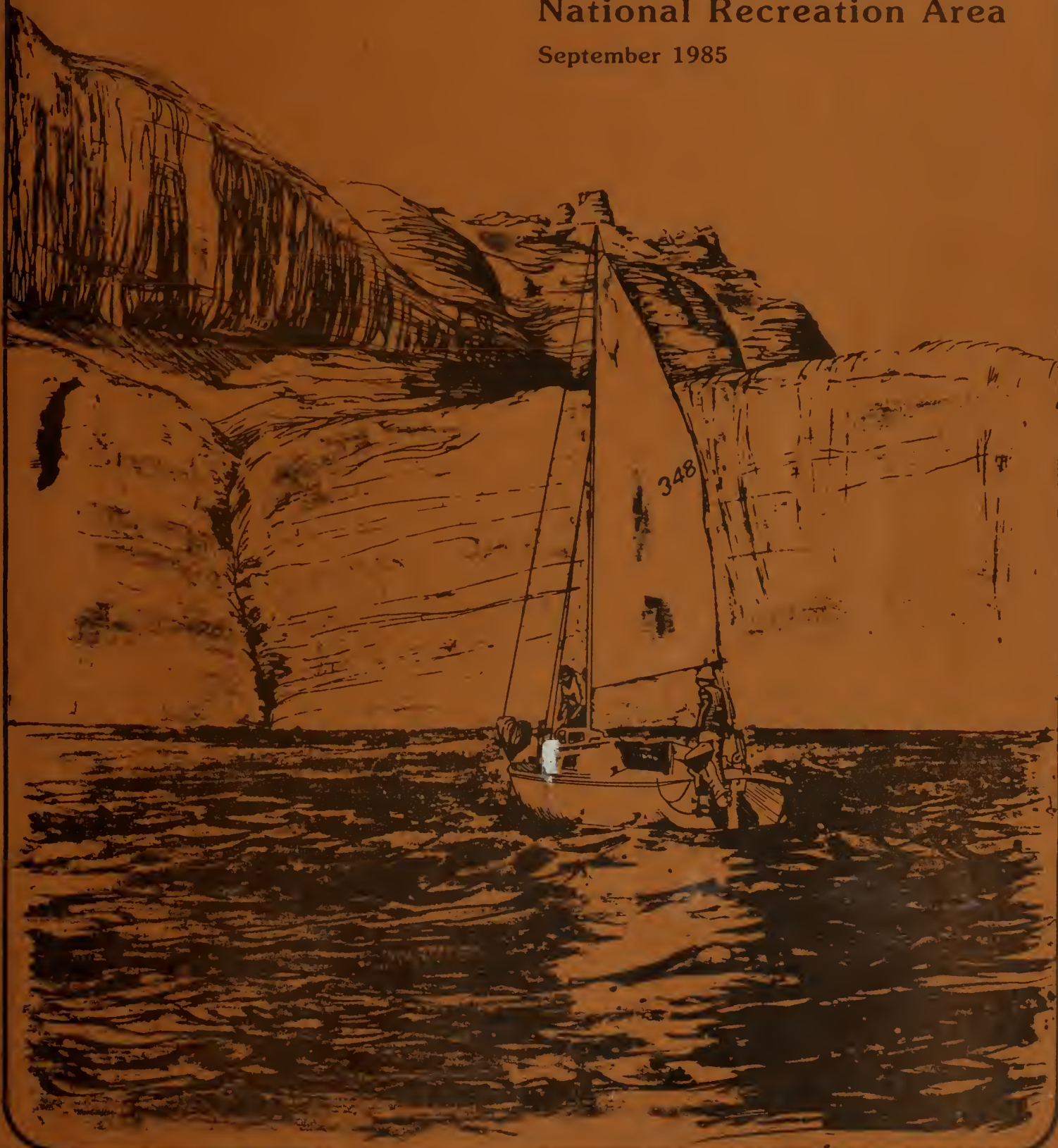


Statement for Management

Glen Canyon National Recreation Area

September 1985



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:

John O. Lancaster
Superintendent, Glen Canyon NRA

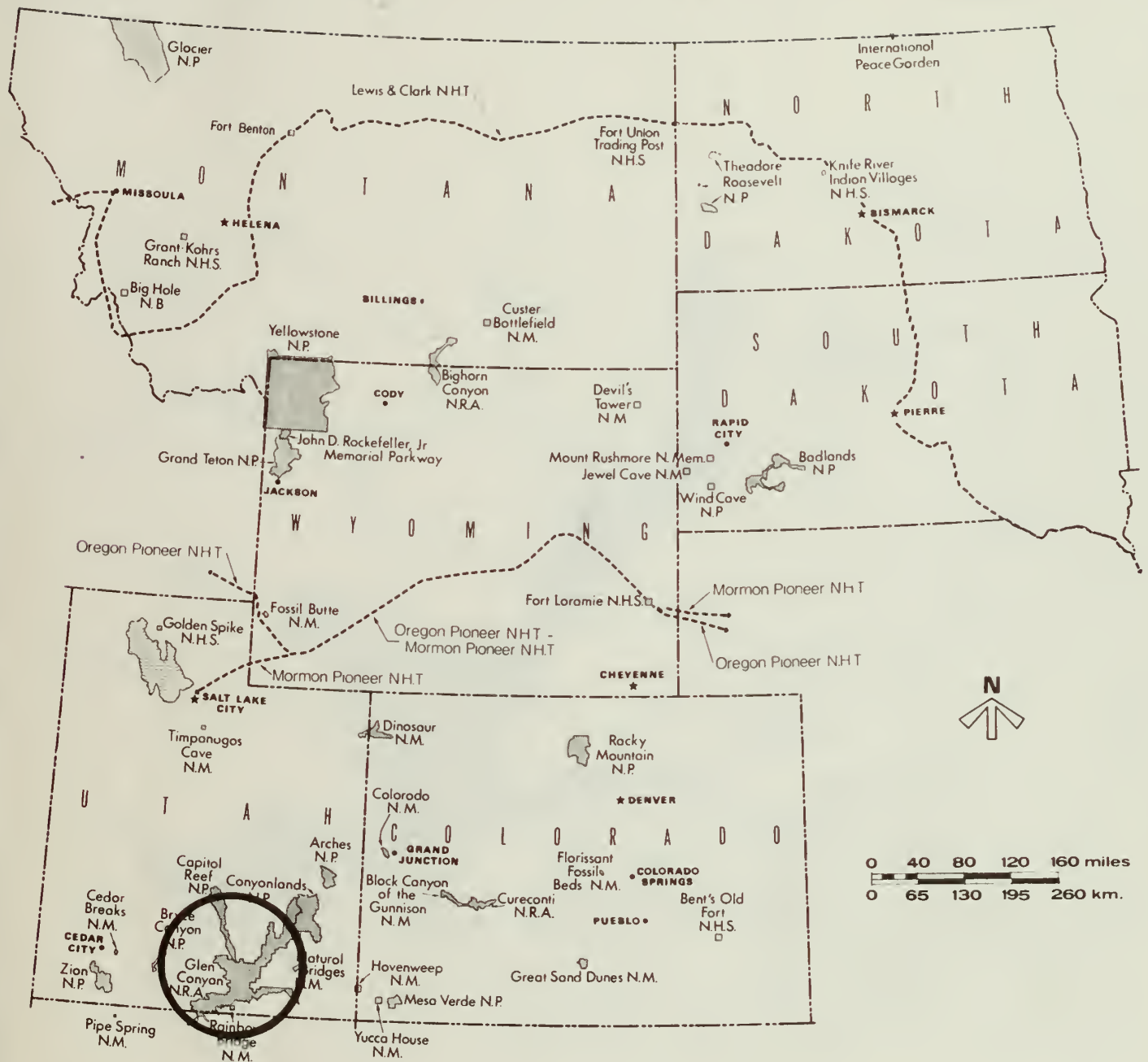
05/08/85
Date

Approved By:

Jack Reukels
Regional Director, Rocky Mountain Region

9/19/85
Date

Acting




Legend

- Locations of Major Cities
- ★ Locations of State Capitals
- State Boundary Lines
- ▭ National Park Service Areas
- National Park Service Historical Trails

ROCKY MOUNTAIN REGION

National Park Service
United States Department
of the Interior



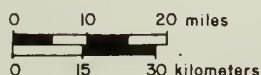
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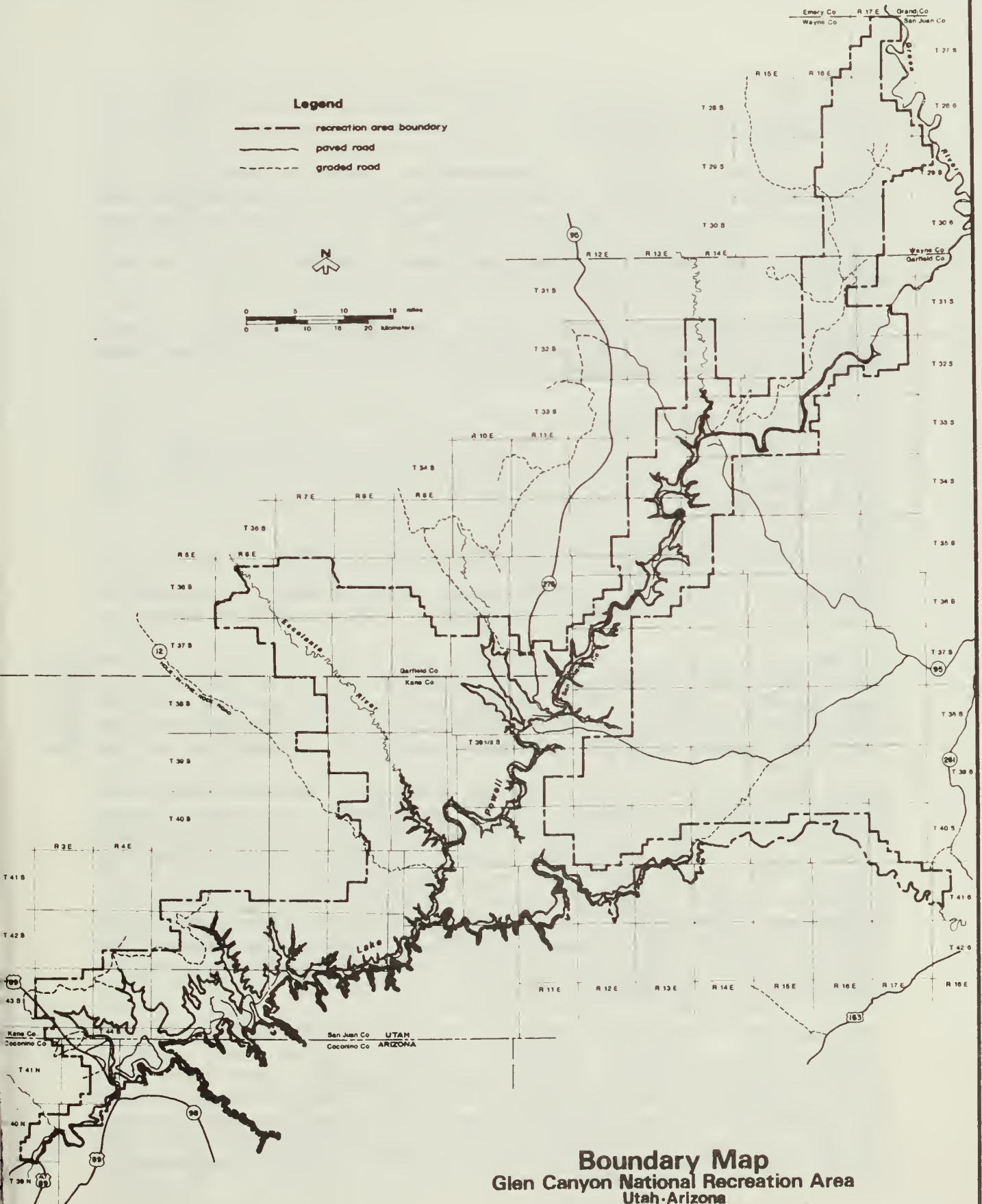
- Glen Canyon N.R.A.
- Navajo Indian Reservation



VICINITY MAP GLEN CANYON NATIONAL RECREATION AREA utah-arizona UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

Legend

- recreation area boundary
- paved road
- graded road



Boundary Map Glen Canyon National Recreation Area Utah-Arizona

United States Department of the Interior-National Park Service

I. LOCATION OF THE AREA

Glen Canyon National Recreation Area (NRA) is in southeastern Utah and northern Arizona. It covers portions of Kane, Garfield, San Juan, and Wayne Counties in Utah and a part of Coconino County in Arizona. Glen Canyon is seated in the First and Third Congressional Districts of Utah and the Third Congressional District of Arizona.

The Navajo Nation Chapters which are adjacent to Glen Canyon National Recreation Area include Oljeto, Navajo Mountain, Kaibeto, LeChee, and Gap-Bodaway..

Its total area comprises some 1,255,400 acres, or 18,600 acres more than the legislatively mandated total of 1,236,880 acres. These acreages are, at best, estimates and will remain so until a boundary survey can establish the exact totals.

Acreages by States and counties are as follows:

Arizona.....48,270 acres or 4 percent of the NRA
Utah.....1,207,130 acres or 96 percent of the NRA

Coconino County (Arizona)..48,270 acres or 4 percent of the NRA
Garfield County (Utah)....325,785 acres or 26 percent of the NRA
Kane County (Utah).....463,610 acres or 37 percent of the NRA
Wayne County (Utah).....99,465 acres or 8 percent of the NRA
San Juan County (Utah)....318,270 acres or 25 percent of the NRA

Glen Canyon is in th heart of some of the nation's most rugged canyon country. This national recreation area features a huge manmade lake in an otherwise arid environment. Following the course of the Colorado River for almost 200 miles, the area abuts Canyonlands National Park, Capitol Reef National Park, Rainbow Bridge National Monument, and Grand Canyon National Park with Lake Mead National Recreation Area downstream. This immediate area constitutes a significant part of the outstanding national parklands in the general region.

On the south, the recreation area is bounded by the Navajo Indian Reservation; public lands, which are mostly administered by the Bureau of Land Management, surround most of the remainder. Because of the rugged terrain, road access is limited. Highways U.S. 89A and 89 and Arizona 98 provide access to the Page, Wahweap, and Lees Ferry areas at the south end of the recreation area; Utah State Highway 95

provides access to the northern end of the area, with paved spur roads leading to Hite, Halls Crossing, and Bullfrog. A ferryboat operation began operation between Halls Crossing and Bullfrog in July of 1985 creating a loop access that should prove popular. Road access to other parts of the recreation area is by primitive dirt roads and trails that are popular with four-wheel-drive enthusiasts.

There are no major population centers near the recreation area. However, it is estimated that well over a million people live within 250 miles of the lake and that 15 million live within 500 miles. In spite of this relative remoteness, the Glen Canyon area has proven to be extremely attractive to recreationalists. Visitation in 1985 exceeded two million persons.

II. PURPOSE AND SIGNIFICANCE

Glen Canyon National Recreation Area was established to "...Provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto in the States of Arizona and Utah and to preserve the scenic, scientific, and historic features contributing to public enjoyment of the area. . ." (Public Law 92-593, October 27, 1972).

Lake Powell forms the core of this outstanding recreation resource. Created by Glen Canyon Dam--a major storage unit of the Upper Colorado River Storage Project authorized by Congress in 1956--this impoundment stretches along 186 miles of the Colorado River and 71 miles of the San Juan River. Altogether, this reservoir holds 27,000,000 acre feet of water, has a surface area of 255 square miles, and has a shoreline of more than 1,800 miles. It is the second largest artificial lake in North America.

Combining the crystal-clear waters of Lake Powell with the spectacular canyon country adds to the tremendous outdoor recreation potential of the area. Tucked away in a vast region containing some of the finest and most famous canyons in the world--Cataract Canyon, Bryce Canyon, Zion Canyon, Marble Canyon, and others--the sheer-rock shoreline of Lake Powell dominates the central portion of the entire region.

The main stem of the Colorado River forms the backbone of the recreation area, but through the ages numerous other rapid running streams have contributed to the topography by carving the labyrinth of canyons that exists today. The San Juan, Dirty Devil, Green, Escalante, and Colorado Rivers continue to flow carving the landscape and providing excitement and solitude to river runners.

The recreation area is part of a vast, rugged region with physiographic features both numerous and diverse. Geologically, it consists primarily of Navajo sandstone perhaps 150 million years old. Made of wind- and water-deposited sediments, which were once sand dunes, they eventually consolidated and, through the processes of uplifting and erosion, have been carved into thousands of different shapes and forms. There are countless cliffs, spires, pinnacles, knobs, arches, and natural bridges throughout the area.

The bench and upland areas support a wide variety of Colorado Plateau plant communities ranging from typical desert shrub to cottonwood, willow, and tamarisk groves near streams and Utah juniper and pinyon woodland at high elevations. In wet years, the wild flower display is spectacular and adds to the visitor's enjoyment of the area.

A wealth of animal species resides in the barren-appearing desert landscape including large and small mammals, birds, reptiles, and amphibians. Though varied, the wildlife--like the vegetation--is not unique or outstanding and is secondary in importance to the lake and geological resources of the area.

Striped bass, largemouth bass, black crappie, walleye, and other game fish have been planted in Lake Powell and constitute a major recreational resource. Channel catfish are also plentiful and three species of endangered fish are in the area: the humpback chub, humpback sucker, and the Colorado River squawfish.

The rich, cultural history of the region also contributes to the significance of the area. Numerous archeological sites contain cliff dwellings, food caches, petroglyphs, and other remnants of more than 2,000 years of Indian utilization of the area. The most dominant of these remains represent the Basketmaker and Pueblo cultures between A.D. 900 and 1200. The inventory of these resources is presently incomplete. Therefore, their full significance remains to be determined.

The history of Europeans in the area began with the passage through the area of the Dominguez-Escalante Party in 1776. The areas of Lees Ferry and Hole-in-the-Rock are historical reminders of the area's beginning in 1858. John Wesley Powell explored and charted portions of the area during his expeditions in 1869 and 1871.

Also, mining has left a physical record impressed on the landscape ranging from the "Gold Rush" period of the 1880's through the early 1900's to the great uranium boom of the

late 1940's and 1950's. Interest still exists today and the area's coal, oil and tar sand, and uranium deposits are now attracting nationwide attention.

III. INFLUENCES: INVENTORY AND ANALYSIS

A. LEGISLATIVE AND ADMINISTRATIVE REQUIREMENTS

Basic to Glen Canyon National Recreation Area is its establishing legislation--Public Law 92-593 which contains the following major legislative constraints on management.

LEGISLATIVE CONSTRAINTS ON MANAGEMENT

I. "The Secretary shall administer, protect, and develop the recreation area. . .for the conservation and management of natural resources. . ."

- This is being done consistent with the authorities granted in the National Park Service's 1916 enabling legislation.

II.A. "The lands within the recreation area, subject to valid existing rights, are withdrawn from location, entry, and patent under the United States mining laws."

- There are no known valid patented or unpatented mining claims within the recreation area.

II.B. ". . .The Secretary shall permit the removal of the nonleasable. . . (and) leasable minerals. . . if such. . . would not have significant adverse effects. . . on the administration of the national recreation area. . ."

- There have been no new mineral leases issued since the area was established.

III. ". . .Nothing in this Act shall affect or interfere with the authority of the Secretary. . . to operate Glen Canyon dam and reservoir. . . for river regulation, irrigation, flood control, and generation of hydroelectric power."

- Interactions between the Bureau of Reclamation and the National Park Service are formalized in a cooperative agreement.

IV. ". . .The Secretary may designate zones where, and establish periods when, no hunting, fishing, or trapping shall be permitted for reasons of public safety, administration, or public use and enjoyment."

- These closed areas have been established under the guidelines established in 36 CFR governing closures, and were implemented only after consulting with other agencies who had a shared jurisdiction.

V. "The Secretary shall grant easements and rights-of-way on a nondiscriminatory basis upon, over, under, across, or along any component of the recreation area unless he finds that the route of such easements and rights-of-way would have significant adverse effects on the administration of the recreation area."

- The Glen Canyon General Management Plan (dated 1979) established utility corridors for known needs, and any additional rights-of-way will be authorized consistent with National Park Service regulations found in Part 14 of 36 CFR.

VI. "The administration of mineral and grazing leases within the recreation area shall be by the Bureau of Land Management. The same policies followed by the Bureau of Land Management in issuing and administering mineral and grazing leases on other lands under its jurisdiction shall be followed in regard to the lands within the boundaries of the recreation area, subject to the. . . (finding) that such. . . would not have significant adverse effects. . . on the administration of the national recreation area (and) the conservation and management of natural resources. . . ."

- A national Memorandum of Understanding between the National Park Service and the Bureau of Land Management delineating agency responsibilities for grazing has been implemented. An amplification of that document is being negotiated with the Bureau of Land Management Officer for Utah and Arizona governing specifics and implementation of the national understanding. A minerals Memorandum of Understanding is under development in Washington and will likely be finalized in 1985.

VII. "The Secretary, together with the Highway Department of the State of Utah, shall conduct a study of proposed road alignments within and adjacent to the recreation area. Such study shall locate the specific route of a scenic, low-speed road, hereby authorized, from Glen Canyon City to Bullfrog Basin. . . and shall designate what additional roads are appropriate and necessary for full utilization of the area for the purposes of this Act and to connect with all roads of ingress to, and egress from, the recreation area."

- A Road Study was completed in 1974 by the Utah Department of Transportation and the National Park Service and is available for public review.

VIII. "Within two years from the date of enactment of this Act, the Secretary shall report to the President. . .his recommendations as to the suitability or nonsuitability of any area within the recreation area for preservation as wilderness. . .in accordance with (the) Wilderness Act."

- A wilderness suitability study was completed during the development of the Glen Canyon General Management Plan. Its recommendations have not been reported out by the President to the Congress. The wilderness recommendation is essentially the same as the Natural Zone delineated in the general management plan.

IX. "Any lands owned by the States of Utah or Arizona. . .may be acquired only by donation or exchange."

- No land exchanges have taken place to date. The National Park Service has consistently supported the State of Utah's "Project Bold" which would completely eliminate any State of Utah inholdings within Glen Canyon.

X. "The Secretary. . .may revise the boundaries. . .from time to time. . .but total acreage may not exceed (1,236,880) acres."

- A boundary survey is needed to establish the exact total acreage of the recreation area.

Further insight into the background of the enabling legislation and congressional intent is contained in the Legislative History for the recreation area. Copies of House of Representatives Report Number 91-1446 and Senate Report 92-156 are available for review in the Superintendent's Office in the Headquarters Office, Page, Arizona.

(See Appendix for text of Public Law 92-593.)

Legislative and Administrative Requirements - Other

There is a complex body of Federal and State law, regulations and policy that direct, guide, and influence management of Glen Canyon National Recreation Area. For the purposes of the Statement for Management, the following are some of the more important legal guidelines germane to the recreation area.

Navajo Indians - Land Exchange (Public Law 85-868; 72 Stat. 1686)

This act provided for the exchange of lands between the United States and the Navajo Tribe for lands needed for reservoir construction. It established Parcel "A" and Parcel "B" lands and prescribed the use of the latter for recreational facilities without the permission of the Navajo Tribal Council.

Public Land Order 5687, November 14, 1979

Restored certain lands to the Navajo Tribe that had been withdrawn or exchanged under Public Law 85-868. Restored part of Parcel "A" lands (Page Townsite) at Antelope Point back to the Navajo Tribe in exchange for additional water rights.

Colorado River Storage Project Act of 1956 (Public Law 84-485)

Authorized the construction of a number of dams on the Upper Colorado River including Glen Canyon Dam. Required the Secretary of the Interior to take adequate provisions to protect Rainbow Bridge National Monument from impairment. Section B of this Act authorized and directed the Secretary of the Interior "to investigate, plan, construct, operate and maintain (1) public recreational facilities on lands withdrawn or acquired for the development of said project. . .to conserve the scenery, the natural, historic, and architectural objects, and the wildlife on said lands, and to provide for public use and enjoyment of the same and of the water areas created by these projects. . .and (2) facilities to mitigate losses of, and improve conditions for, the propagation of fish and wildlife."

Colorado River Basin Project Act of 1968 (Public Law 90-537)

Established the operational program for the upper and lower basin portions of the Colorado River. Established 3,700 feet as the full pool for Lake Powell.

Supreme Court Decision: The United States of America vs The State of Utah (May 18, 1931)

Established the navigability status of the Colorado, Green, and San Juan Rivers and apportioned out the ownership of the beds of the respective rivers based on their navigability. Thus, portions of the ancestral bed of the Colorado and Green Rivers are owned by the State of Utah since the rivers were declared navigable and as such were deeded to the State on its admission to the Union.

Executive Orders 11988 and 11990

These Executive Orders control development and planning on 100- and 500-year floodplains for critical actions, high hazard areas, and on designated wetlands.

Combined Hydrocarbon Leasing Act of 1981 (Public Law 97-78; 95 Stat. 1070)

Amends the Mineral Lands Leasing Act to eliminate the distinction between oil and tar sands thereby allowing the issuance of a "Combined Hydrocarbon Lease (CHL)."

- Defines the term "oil" to include all nongaseous hydrocarbons other than coal, oil shale, and gasoline.

- CHLs will be issued pursuant to Section 17 of the Mineral Leasing Act of 1920 within "Special Tar Sands Areas" that were designated by Secretarial Orders issued November 20, 1980, and January 21, 1981.

Directs the Secretary to issue final regulations within 6 months governing the conversion of oil and gas leases and valid mining claims to CHLs. Also, it directs the Secretary to develop a competitive tar sands leasing program within an undefined timeframe.

Restricts lease conversions and the leasing of Federal lands for the purposes of extracting oil, gas, and tar sands to 10 special tar sand areas in Utah.

Explicitly prevents the application of the Act's provisions to areas within the National Park System where mineral leasing is prohibited by law. Also, limits tar-sand leasing/extraction in the Glen Canyon National Recreation Area if it would conflict with the area's mineral management plan and if the Secretary fails to make a finding of "no significant adverse impacts on the administration of the area or on other contiguous units of the National Park System."

Archeological Resources Protection Act (ARPA) (16 U.S.C. 470aa, et seq. Public Law 96-95)

The Archeological Resources Protection Act was enacted in 1979 to prevent the illegal excavation and possession of archeological resources located on Federal, other public land, and Indian land.

(a) National Park Service Responsibilities

The Code of Federal Regulations (CFR) protects archeological resources within park areas. Such resources in parks are defined in the revised CFR consistent with definitions set forth in the ARPA. However, this Act gives much greater authority and discretion to park managers and the United States Attorney to prosecute criminally, or handle as a civil matter, offenses including the taking or possession of archeological resources. Discussions between the U.S. Attorney's Office and educational and other authorities concerning the value of such resources should occur whenever serious degradation of archeological resources is suspected on parklands.

National Historic Preservation Act of October 5, 1966
(Public Law 89-655)

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.

(a) National Park Service Responsibilities

- The identification of resources
- Evaluation of significance
- Assessment of the impact of any undertaking on the significant values of the property
- Mitigation of adverse effect
- Management.

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

- Requires the development of professional standards for the preservation of historic properties in Federal ownership or control by 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 which they own or control.
- Directs Agencies to use available historic properties to the maximum extent possible.
- Allows Agencies to lease a historic property if its preservation will be insured. Permits use of proceeds for maintenance, repairs, and administration of the property.

Lacey Act (18 U.S.C. 42-44, Title 50 CFR, Public Law 97-79, most recent amendment)

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.

(a) National Park Service Responsibilities

The Code of Federal Regulations protects wildlife, fish, and all plants that may be taken or possessed in National Park areas. However, this Act gives much greater discretion to park managers and the United States 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 Fish and Wildlife Service enforcement agents should occur whenever commercial or other serious degradation of these resources is suspected on parklands.

Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, Public Law 86-70, as amended)

This statute prohibits taking, possession, or trade of bald and golden eagles.

(a) National Park Service Responsibilities

The Code of Federal Regulations protects eagles along with all other wildlife. However, this Act gives considerable discretion to park management 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 the area Fish and Wildlife enforcement agents should occur whenever possible violations of this Act take place in a park area.

Concessions Policy Act of 1965 (16 U.S.C. Section 20, Public Law)

This Act is designed to provide guidance relating to the establishment of concession policies in the areas administered by the National Park Service. The Act provides for such issues as the following.

- Protection against loss of investment in tangible property
- Reasonable opportunity to realize a profit
- Comparable rates to be charged
- Preferential right to provide new or additional accommodations and in the negotiation of new contracts

- Possessory interest in improvements on land owned by the Federal Government
- Record keeping.

The National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190, 31 Stat. 852; 42 U.S.C. 4321-4347)

This Act declares that it is the policy of the Federal Government to improve and coordinate Federal Plans, functions, programs, and resources to the end that the nation may preserve important historic, cultural, and natural aspects of our heritage.

(a) National Park Service Responsibility

- Assure that documents are prepared assessing in detail the environmental impacts of every proposed action that may significantly affect the quality of the human environment according to the definition and requirements in NPS-12, NEPA Procedures.
- Determine whether the action is a categorical exclusion requiring no action or one with potential requiring either a memorandum to the files or an environmental assessment.
- Following preparation of an environmental assessment (if required) and appropriate public involvement according to National Park Service Procedures, initiate an Environmental Review recommending selection of an environmentally preferable alternative, make a finding as to whether the selected alternative will have a significant impact requiring preparation of an Environmental Statement, and submit the Environmental Review to the Regional Director for review and approval.
- If an environmental statement is required, the Superintendent and/or staff consults with or serves on the team preparing the statement.
- Followup on environmental documents to assure that the selected action is dealing properly with impacts and that mitigating measures are carried out.
- Provides comments, on request, concerning environmental documents by other agencies from the standpoint of expertise or jurisdiction.

The Wilderness Act of 1964 (Public Law 88-577, 78 Stat. 890; 16 U.S.C. 1131-1136)

The purpose of the Wilderness Act is to legislatively establish an enduring and unimpaired wilderness resource for public use and enjoyment.

(a) National Park Service Responsibility

Comply with National park Service management policies and directives with respect to wilderness studies and appropriate human activities before and after the legislative process is completed.

Endangered Species Act of 1973 (Public Law 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. . ."

(a) National Park Service Responsibility

- Maintain inventory of endangered or threatened species within the park area either permanently or seasonally.
- Consider impact of any project or program upon endangered or threatened species.
- Maintain liaison with U.S. Fish and Wildlife Service concerning applicable regulations and changes in subject listings.

National Park Service Authorities Act (Public Law 94-458; 16 U.S.C. Section 1a et seq.)

This legislation provided additional improvement and authorization for the administration of the National Park System.

It provides the Secretary of the Interior with authority to relinquish part of legislative jurisdiction, and allows the Secretary to move from exclusive to concurrent jurisdiction without a special act of Congress that was previously required. Expressed intent of the Department of the Interior is to move toward concurrent jurisdiction in all National Park Service areas.

Law Enforcement

1. Authorizes the Secretary of the Interior to designate, pursuant to standards prescribed in regulations by the Secretary, certain officers or employees of the Department of the Interior who shall maintain law and order and protect persons and property within areas of the National Park Service. Authorization is also provided for designation of officers of other agencies as special policemen under prescribed criteria.

2. Provides designated law enforcement people with the following authorities.

- a. Carry firearms
- b. Make arrests without warrant for any offense committed against the United States
- c. Execute warrants or other process
- d. Conduct investigations of offenses against the United States committed in that system in the absence of investigation thereof by any other Federal law enforcement Agency having investigative jurisdiction over the offense committed or with the concurrence of such other agency.

Clean Air Act (42 U.S.C. 1857-1857f; as amended on August 7, 1977, by Public Law 95-95)

The Clean Air Act is one of great complexity with a multitude of purposes. One of the purposes of Title I of this Act is the preservation, protection, and enhancement of 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 of sulphur dioxide and particulate matter is to be restricted. The restrictions are most severe in Class I areas and progressively more lenient in Classes II and III.

The Act further requires all Federal Agencies to comply with Federal, State, interstate, and local requirements towards control and abatement of air pollution.

(a) National Park Service Responsibilities

Keep abreast of State implementation plans (SIPs) to assure that the park facilities and programs are in compliance.

Establish monitoring and/or research programs for determining impairment to air quality related values.

Provide timely response to any permit application submitted for review.

Establish air quality related values - visibility section as part of resource management plan and included in the statement for management.

Reservoir Salvage Act of 1960 (Public Law 86-523; 16 U.S.C. 469)

This law was a further expression of a commitment by the Congress to prevent damage to significant historic and prehistoric properties. It specifically provided for the preservation of historical and archeological data which might otherwise be destroyed or lost as the result of dam construction.

Historical and Archeological Data Preservation Act of 1974 (Public Law 93-291)

The Historical and Archeological Data Act of 1974 amended and updated the Reservoir Salvage Act of 1960. The 1974 Act broadens the earlier legislation beyond the dam construction which was the emphasis of the Reservoir Salvage Act. 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 1 percent of project costs for mitigation of the impacts to cultural resource sites and properties (the 1980 Amendments to the National Historic Preservation Act permit an Agency to exceed the 1-percent limit where appropriate). Under the 1974 Act, an agency official may request assistance from the Secretary of the Interior in mitigation efforts.

American Indian Religious Freedom Act of 1978 (Public Law 95-341; 92 Stat. 469)

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 parklands 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.

B. RESOURCES

1. Water Resources

The lake and river waters of Glen Canyon National Recreation Area are premier park resources receiving very high levels of public use and enjoyment. Boating, fishing, swimming, water skiing, river running, and waterside camping are the principal water-based activities sought by visitors to the recreation area. With more than 255 square miles of lake surface, the Colorado River, innumerable springs and seeps in back-country canyons, five major tributaries, completion of the baseline inventory, and the subsequent monitoring of water resources is a formidable task. The recreation area is currently developing a water resources management plan to address these concerns.

2. Vegetation

The recreation area is physiographically located within the Colorado Plateau primarily supporting desert-shrub vegetation. The plant communities include riparian, shadscale, blackbrush, sagebrush, grassland, and pinyon-juniper woodland. Included in these generalized vegetation types are two endangered species, numerous candidate species, and unique plant associations found in moist alcoves known as hanging gardens. These occur on seep seams and alcoves along steep canyon walls. They support a rich variety and luxuriant growth of plants adapted to wet conditions. Within the desert-shrub grassland communities, relict plant stands were recently found in the recreation area. These relict populations cover thousands of acres and may represent the best examples of specific natural grasslands in the southern Utah area.

3. Wildlife and Fishery

The rather sterile-looking aspect of the recreation area's landscape belies the wealth of animal life that it hosts. Many species and large populations of small mammals, birds, and reptiles may be found throughout the national recreation area from the deepest canyon bottoms to the tops of the highest plateaus. Large mammals, such as bighorn sheep, beaver, mule deer, and antelope may be found in numerous locations. Predators such as bobcat, mountain lion, gray fox, badger, kit fox, and coyote also range widely.

The desert bighorn sheep is one of the area's most important big game species. The Glen Canyon area, with its tributary side canyons and adjacent plateaus and mesas, supports one of the last relict bighorn herds.

The topographic diversity and abundance of prey provide suitable habitat for numerous species of predatory birds. The red-tailed hawk, prairie and peregrine falcons, golden and bald eagles, and the burrowing owl are specifically noted within the recreation area's boundaries.

Several hundred mule deer utilize the recreation area for winter range, especially south of the Escalante River. Limited winter use also occurs along the San Juan River and below the Orange Cliffs. Most summer range for the deer is outside the recreation area. However, a limited number of deer are found throughout the year in tributary side canyons, where riparian vegetation attracts and supports the animals.

Fishing is a major recreational activity at Glen Canyon. Opportunities to fish exist throughout the recreation area. Striped bass, walleye, large- and small-mouth bass, and black crappie are currently the major game species in Lake Powell.

The Colorado River below Glen Canyon Dam supports a trout population that qualifies as a blue-ribbon trout fishery. In the last few years, this fishery has been the subject of articles in several major national outdoor magazines and in a number of major newspapers. Fishermen come to the area from all over the country and from as far away as Alaska and Canada.

4. Air Quality

Glen Canyon is established as a Class II Federal air quality area. The recreation area partially shares common boundaries with three national parks. All of these parks are Class I airsheds. The air quality of the area was monitored prior to the start-up of the Navajo Generating Station. The average visibility described in 1974 as "excellent" (about 125 miles) is now noticeably less. The National Park Service in cooperation with other State and Federal Agencies and private industry have developed an extensive 5-year monitoring plan for gaseous and particulate constituents of the atmosphere. Research objectives include an in-depth analysis of the regional airshed and the identification of emission sources.

5. Recreation

Glen Canyon provides the visitor with a wide variety of recreational opportunities. Besides boating, fishing, and camping on Lake Powell, one can run rivers, hike wilderness trails, four-wheel drive on back-country roads, and hunt and trap.

Predominant recreational activities at Glen Canyon are linked to water-oriented sports. Pleasure boating, water skiing, swimming, and beach camping are the main summer activities. Sport fishing constitutes a major year-round recreational resource. The effects of visitor/camper impacts are beginning to be noticeable. It is expected that with a full reservoir, tamarisk will establish itself on many of the shoreline areas. This will result in a vegetative barrier that prevents the use of prime shoreline campsites.

The Colorado River above Lees Ferry is used by fisherman with small power boats and by concessioner 1- and 2-day motorized raft trips (50,000 visitors in 1984). Fishermen are attracted to the area by the nationally known blue-ribbon trout fishing there.

The San Juan River from Honaker Trail to Clay Hills Crossing lies within Glen Canyon National Recreation Area. The balance is on Bureau of Land Management and Navajo Reservation lands. The river has several unique characteristics that attract river recreationists including spectacular canyon scenery, geology, history, prehistoric ruins, and whitewater. The San Juan River is used by nonpowered rafts, kayaks, and canoes with 24,000-passenger days in 1980.

Back-country use within Glen Canyon National Recreation Area is small compared to water-oriented recreational use. The Escalante River drainage in the recreation area offers some of the finest opportunities in the region for desert-canyon hiking. There were 25,000 overnight stays in the Escalante subdistrict in 1984 and visitation is increasing.

6. Threatened and Endangered Species

A large number of threatened and endangered species use the recreation area for all or a portion of the year. Glen Canyon hosts two species of endangered birds, three species of endangered fish and two species of endangered plants.

Bald eagles are known to winter in several parts of Glen Canyon, primarily on the San Juan arm of Lake Powell and along the main channel above Bullfrog. The bald eagle is an endangered species. Between 35 and 50 birds use the lake and its tributaries for a least 3 months each winter. A 1984 partial survey on Lake Powell for peregrine falcons revealed 8 nests with 15 young. If these population densities hold true for the remainder of the lake, there may be up to 12-15 nests on the national recreation area making it one of the largest natural populations of peregrine falcons in the continental United States. In fact, it may

be a self-sustaining population. However, evidence suggests that the prey species have high levels of pesticides in them, thus affecting nesting success for the falcons.

Glen Canyon Dam changed the aquatic ecosystem both above and below the dam so dramatically that many native species could not adapt. However, tributaries still provide suitable habitat and remnants of native species still exist there. The Paria, Escalante, Dirty Devil, and San Juan Rivers are the major tributaries which maintain flows similar to their historic ones. Among the native species found in these tributaries are flannelmouth suckers, bluehead suckers, and speckled dace. Also, historically present in the system are razorback suckers (a sensitive species), Colorado squawfish, humpback, and bonytail chubs. The last three species are listed as endangered. Squawfish have been found in the Colorado River above Hite and in the San Juan River near Mexican Hat.

Two species of plants are listed as endangered species--Brady Pincushion (Pediocactus bradyi) and Jones cycladenia (Cycladenia humilis var. jonesii). Both species are being monitored--Pediocactus in the Lees Ferry area and Cycladenia in the Purple Hills.

7. Minerals

The earliest mining activity in the region was associated with a discovery of gold by members of the second Powell expedition of 1871. This event caused a flurry of prospecting activities in the area and resulted in several new discoveries. The prospecting and related mining activities continued until the depression of 1893. The major occurrences of gold in the area are associated with placer deposits along the Colorado and San Juan Rivers and their tributaries. The prospecting efforts in search for gold were responsible for the development of new roads and trails throughout the region.

There is present production of oil from the Upper Valley anticline in the northern part of the Kaiparowits basin. This field was discovered in 1964 and is in production. Production of oil is also occurring from the Mexican Hat and Greater Aneth fields along the upper San Juan River. The discovery of oil in the Pennsylvanian reservoirs near Mexican Hat was made in 1908 with the Aneth discovery occurring in 1956. The Ticaboo uranium deposit near Bullfrog was developed in 1976 and production has been intermittent over the last 5 years. The primary uranium interests are currently known to be west of the recreation area in breccia pipe formations of the Arizona Strip.

There are no patented or unpatented mining claims located within the recreation area; however, under Title 43 of the Code of Federal Regulations, hardrock minerals including gold and uranium are leasable minerals. There are 34 existing oil and gas leases (currently in suspension) encompassing 38,000 acres; and 55 oil and gas lease offers pending for approximately 160,000 acres. Thirty-one of the thirty-four existing leases are contained in the Tar Sands Triangle and are being evaluated for conversion to combined hydrocarbon leases under the Combined Hydrocarbon Leasing Act of 1981. In addition, there are 1,200 acres of private oil and gas rights in the Halls Creek area.

A plan of operations for the in situ development of tar sands was submitted by private industry in December 1982 in compliance with the Combined Hydrocarbon Leasing Act. Included in this plan was the proposed conversion of 22,000 acres of oil and gas leases in the recreation area and 44,000 acres adjacent to the area to combine Hydrocarbon leases. A National Park Service/Bureau of Land Management Environmental Impact Statement was prepared in July 1984 which evaluated various production alternatives and identified serious environmental concerns. A decision on lease conversion and approval of the plan of operations is pending.

Within the recreation area, there are 82 State sections encompassing approximately 51,000 acres. On these, there are 39 State mineral leases covering 28,500 acres. The majority of State leases are issued for oil and gas, but a few also include metallic minerals and were issued prior to the approval of the general management plan in 1979 and in areas closed to future leasing. These are being withdrawn from leasing as the leases expire. Lands adjacent to the recreation area contain known deposits of coal, uranium, tar sands, and oil and gas. Coal developments have been proposed on Nipple Bench, on Kaiparowits Plateau, and in the Henry Mountains.

8. Grazing

There are 40 grazing allotments administered by the Bureau of Land Management in Glen Canyon utilized by about 75 permittees. Allotments cover about 80 percent of the national recreation area or 976,801 acres with 26,462 total allowable animal unit months (AUM's). The most recent 5-year average actual use is about 15,000 AUM's. Most allotments are used seasonally predominantly in fall, winter, and spring. About 12 percent of the allotted land, or 105,000 acres, is grazed all year long.

Grazing is administered by the Bureau of Land Management (BLM) under the authority of the Glen Canyon enabling legislation (Public Law 92-593). However, the National Park Service is responsible for insuring that no significant adverse impacts on recreation area resources occur from grazing management. There is a national umbrella memorandum of understanding between the National Park Service and the Bureau of Land Management to coordinate and promote the effective management of livestock grazing with the management of other recreation area resources. The Bureau of Land Management has five Resource Areas managing the Glen Canyon grazing allotments. They are headquartered in Kanab, Escalante, Hanksville, Monticello, and St. George, Utah. These offices assign allotments and AUM's, collect grazing fees, and monitor range conditions.

Bureau of Land Management range condition studies indicate that 190,000 acres (33 percent) are in good condition; 350,000 acres (62 percent) are in fair condition; and 30,000 acres (5 percent) are in poor condition. The Bureau of Land Management estimates that under optimal management 390,000 acres (68 percent) could be improved to good condition and 180,000 (32 percent) could be improved to fair condition.

Several herds of feral animals are known to exist within national recreation area boundaries. Feral livestock are cattle, burros, horses, domestic sheep, or goats left on the range. They may not be owned or claimed by anyone. They are not branded and not accounted for under present grazing permits. Small horse herds of about 10-15 animals each exist in Long Canyon, Middle Moody Canyon/Purple Hills area, and Harveys Fear/Spencer Bench. Long Canyon has the only herd entirely on national recreation area land. The other herds range on both Bureau of Land Management and national recreation area lands. A small herd of burros is known to exist in the Spur area of the Orange Cliffs. A small herd of goats roam the Dirty Devil River drainage. Three locations have feral cattle: Padre Canyon, Navajo/Spencer Point, Bowns Canyon. There are about 10-12 head in herds at Navajo Point and Bowns Canyon. One cow was seen in Padre Canyon.

The effects of the prolonged presence of horses and cattle in a canyon result in numerous areas with multiple trailing which causes serious erosion and ground stability problems and water quality and health problems to hikers. The presence of cattle in alcoves for shelter has led to the marked deterioration of archeological values from the effects of trampling and litter deposit. Native wildlife must also compete with these animals for forage.

9. Paleontology

Along the Colorado River, where the river and its tributaries have cut through thousands of feet of sedimentary rocks, extensive fossil-bearing formations have been exposed. In other areas, fossils, petrified wood, and reptile and dinosaur tracks have been exposed from surface erosion. There are a few areas within the recreation area that have petrified wood in volumes equivalent to that in Petrified Forest National Park. There is a known deposit of fossil dinosaur tracks in the Orange Cliffs area of the park.

Very recently an extensive, buried deposit of dried dung--including both whole coprolites and pulverized manure--from a rockshelter in the recreation area has been identified as mammoth and sloth. Other deposits of Pleistocene dung have been recorded in other areas, but none have produced the range of floral and faunal materials or are as pristine as the deposit in Glen Canyon. An undisturbed deposit such as this is extremely valuable not only for its information about late Pleistocene fauna and late glacial extinction, but for the floral information contained in the dung as well.

10. Cultural Resources

(a) Archeology

Glen Canyon National Recreation Area is part of the archeologically renowned "Four Corners" area encompassing southwest Colorado, southeast Utah, northwest New Mexico, and northeast Arizona. It, like Mesa Verde, Chaco Canyon, Canyonlands, and Hovenweep, was the hub of a network of prehistoric communities and trade routes that once crisscrossed the southwest.

Paleo-Indians, known as Big Game Hunters, have been radiocarbon dated fairly reliably in the southwest to between 12,500 and 7,000 B.P. (Jennings 1974). Finds from this period have not yet been recorded in the Glen Canyon region and are only represented by widely scattered surface artifact finds in Utah. Based on present evidence, the earliest Americans apparently used the area only sporadically.

The Archaic or Desert Archaic people occupied the northern Colorado Plateau region as seasonal hunters and gatherers between approximately 6400 B.C. and A.D. 450. Schroedl (1976c) has divided the Archaic of this region into four sequential phases. The primary subsistence pattern during the early and middle phases was hunting and gathering, with maize horticulture as a supplement towards the end of the

sequence. Recent investigations have identified the presence of Archaic people in Glen Canyon, located primarily on the western uplands of the Colorado River as well as in some of the side canyons of the Colorado (Schroedl 1981b, Nickens 1981, Tipps 1983). None of these archaic sites contain architecture; they are mainly open campsites, sometimes sheltered in rocky coves.

The Anasazi Pueblo tradition begins to appear in the northern southwest shortly after A.D. 1. This cultural tradition is characterized by a more sedentary lifestyle than that of the preceding Archaic, increased reliance on food production, manufacture of ceramic containers, and the development of increasingly complex social and religious institutions. Recorded data indicate that the most intensive occupation of Glen Canyon apparently occurred in Pueblo II and early Pueblo III times (ca. A.D. 1050-1225) in natural canyon alcoves with sufficient soil and water for agriculture. Typically, these Pueblo sites contain masonry and/or jacal structures representing habitation and storage rooms, bell-shaped storage cists, and occasional pithouses. Glen Canyon exhibits both Kayenta and Mesa Verde Anasazi influences, as well as exhibiting some relatively minor influences from the Fremont cultural tradition.

The Anasazi Pueblo people abandoned the area during late Pueblo III times (about A.D. 1300) probably moving farther south and west possibly because the combined pressures of continuing droughts and the depredations of northern Shoshonean hunters.

Navajo occupation began shortly after the disappearance of the Anasazi at approximately A.D. 1300. These nomadic people drifted in from the north. Their transient life style left few traces of structures or artifacts to document the pre-Anglo contact culture. The transition from Anglo-contact to reservation life is thoroughly documented by many authors.

(b) History

The history of Europeans in the area began with the passage through the area of the Dominguez-Escalante Party in 1776. The Hole-in-the-Rock Trail is a historical reminder of the Mormon Missionaries and their influence in the area. Lees Ferry represents the theme of the Indian Wars with the 1865 construction of a Government fort and subsequent Mormon settlement with ferry service across the Colorado River in 1873. The theme of Government exploration is represented by the two voyages of discovery on the Colorado River directed by John Wesley Powell in 1869 and 1871.

Mining has also left a physical record impressed on the landscape ranging from the "Gold Rush" period of 1880's through the early 1900's to the great uranium boom of the late 1940's and 1950's. Interest still exists today in the area's coal oil, tar sands, and uranium deposits.

C. LAND USES AND TRENDS

1. Land Ownership

Glen Canyon National Recreation Area is composed of 1,255,400 acres. There are 82 State sections within the recreation area: 64 sections (40,580 acres) of surface and subsurface ownership and 18 sections (10,500 acres) of subsurface ownership. Project BOLD, an initiative on the part of the State of Utah, has been proposed to consolidate State holdings through land exchange. Although no State-land consolidation proposals are located within the recreation area, a large consolidation area is located adjacent to the area north of Bullfrog. There are 1,200 acres of private oil and gas rights, the majority of which are submerged. There are currently 34 Federal oil and gas leases encompassing 38,000 acres and 52 State leases for an additional 28,000 acres. There is one 491-acre inholding under development which includes a mobilehome park, condominiums, and a proposed hotel complex. There are oil and gas lease offers pending for approximately 160,000 acres. There are 40 grazing allotments encompassing 976,800 acres.

2. External Threats

Adjacent Bureau of Land Management and State land-use programs may conflict with park resources. These programs include oil and gas, tar sands, and uranium development. The majority of the lands adjacent to the recreation area are available for oil and gas leasing and most of these lands are presently under lease. Existing oil and gas leases are being evaluated for conversion to combine hydrocarbon leases for two known tar sands geological structures--Circle Cliffs and Tar Sands Triangle. Uranium and vanadium resources are being mined at Ticaboo. Coal resources are under lease on Nipple Beach, the Kaiparowits Plateau, and Henry Mountains immediately north of the recreation area. The Department of Energy has proposed construction of two high-level nuclear waste disposal sites upstream of Glen Canyon National Recreation Area adjacent to Canyonlands National Park.

D. VISITOR USE ANALYSIS

The 10-year cycle has shown tremendous growth. Actually doubling the visitation from 1 million to in excess of 2

million, with the exception of 1979 and 1980, visitation has shown a steady increase. The years 1980 to 1984 showed a continued steady growth of 25 percent and the present indication for 1985 shows that pattern continuing.

The visitation year continues to expand. Rather than a 3-month season, it now realistically is a 7-month heavy-use season. The visitation still remains relatively high through the three winter months. One month has visitation in excess of 95,000; three months in excess of 100,000; three months in excess of 200,000; and two months in excess of 300,000. The three "slow" months vary in visitation from 30,000 to 69,000.

Seasonal use for percentage of annual visitation is summer, July through September, 36 percent; fall, October through December, 15 percent; winter, January through March, 10 percent; and spring, April through June, 39 percent.

Visitation analysis by selected categories of users

1. Breakdown by age

20 percent - children	0 - 12 years
15 percent - teenagers	13 - 17 years
50 percent - adults	18 - 61 years
15 percent - senior citizens	62 plus - age for golden age passport

2. Breakdown by group affiliation

1 percent - alone	Nonassociation individuals
15 percent - peer groups	People of approximately the same age
25 percent - organized tour	People traveling together
50 percent - nuclear family	Two parents and their children
3 percent - extended family	Nuclear family plus relatives
6 percent - multiple family	More than one nuclear family
±1 percent - partial family	One parent with children
±1 percent - other	Unknown composition

3. Breakdown by special population membership

2 percent handicapped (physical, sensor, mental)
15 percent non-English speaking
5 percent minority

Visitation analysis by origin--destination pattern:

1. Breakdown by point of origin

2 percent - local residents	People that live in the immediate area of the park
20 percent - regional residents	People that live within a 2- to 3-hour drive of the park
65 percent - national	U.S. residents from outside the local or regional area
13 percent - international	Visitors from other countries.

2. Breakdown of destination/duration of stay

1 percent - home-based day-users	People who have left home, visited the park, and intend to return home the same day
35 percent - through-visitors	Visitors on extended trip; park is one stop on their itineraries
1 percent - day-use only	
30 percent - overnight visitors	
33 percent - extended users	People in park as a main or only destination who will remain in the area two or more nights.

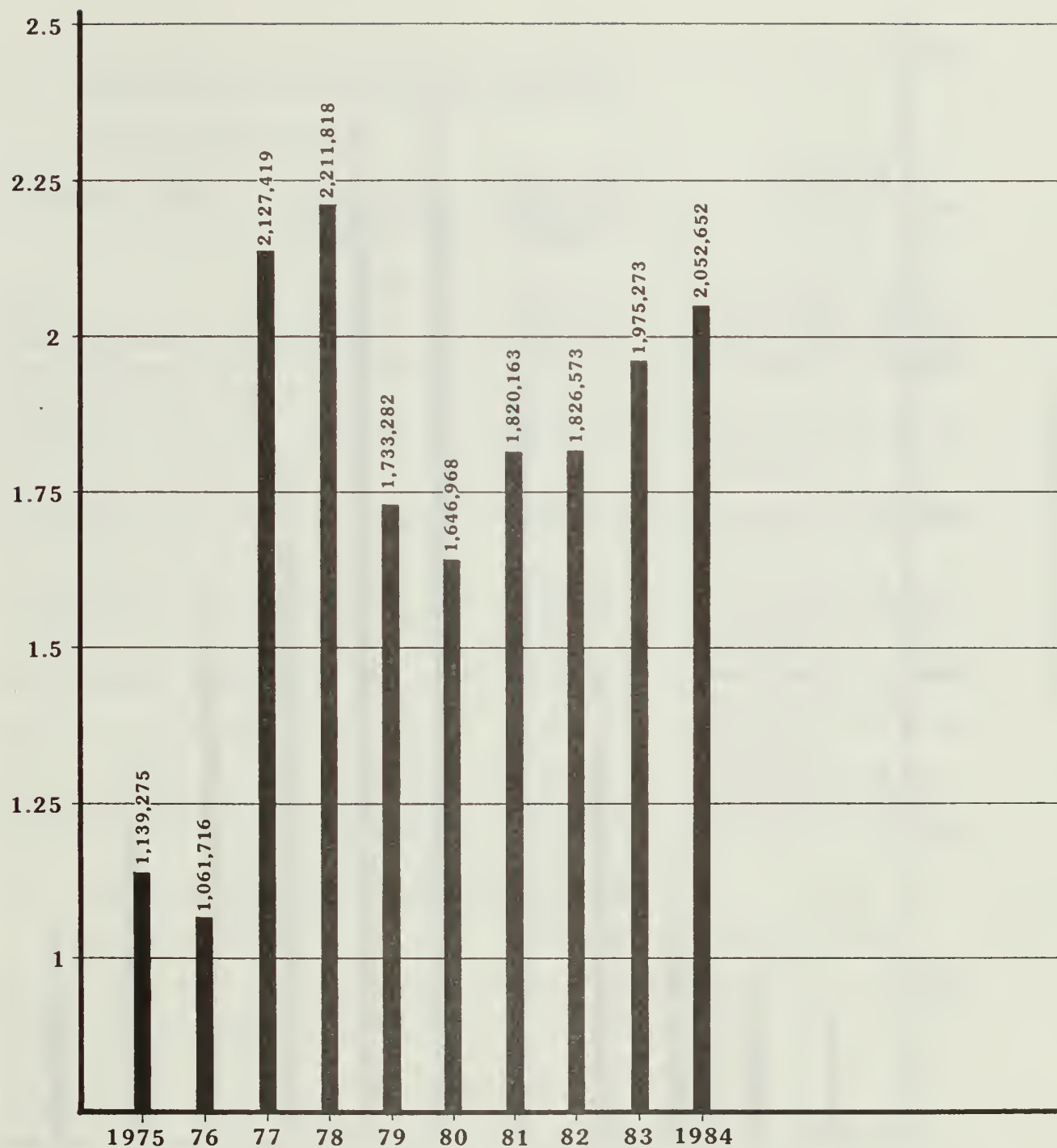
Visitation analysis by site and activity selection

1. Breakdown by area and facilities used

2 percent - incidental to park's primary resources
18 percent - based on park's primary resources
80 percent - dependent on park's primary resources

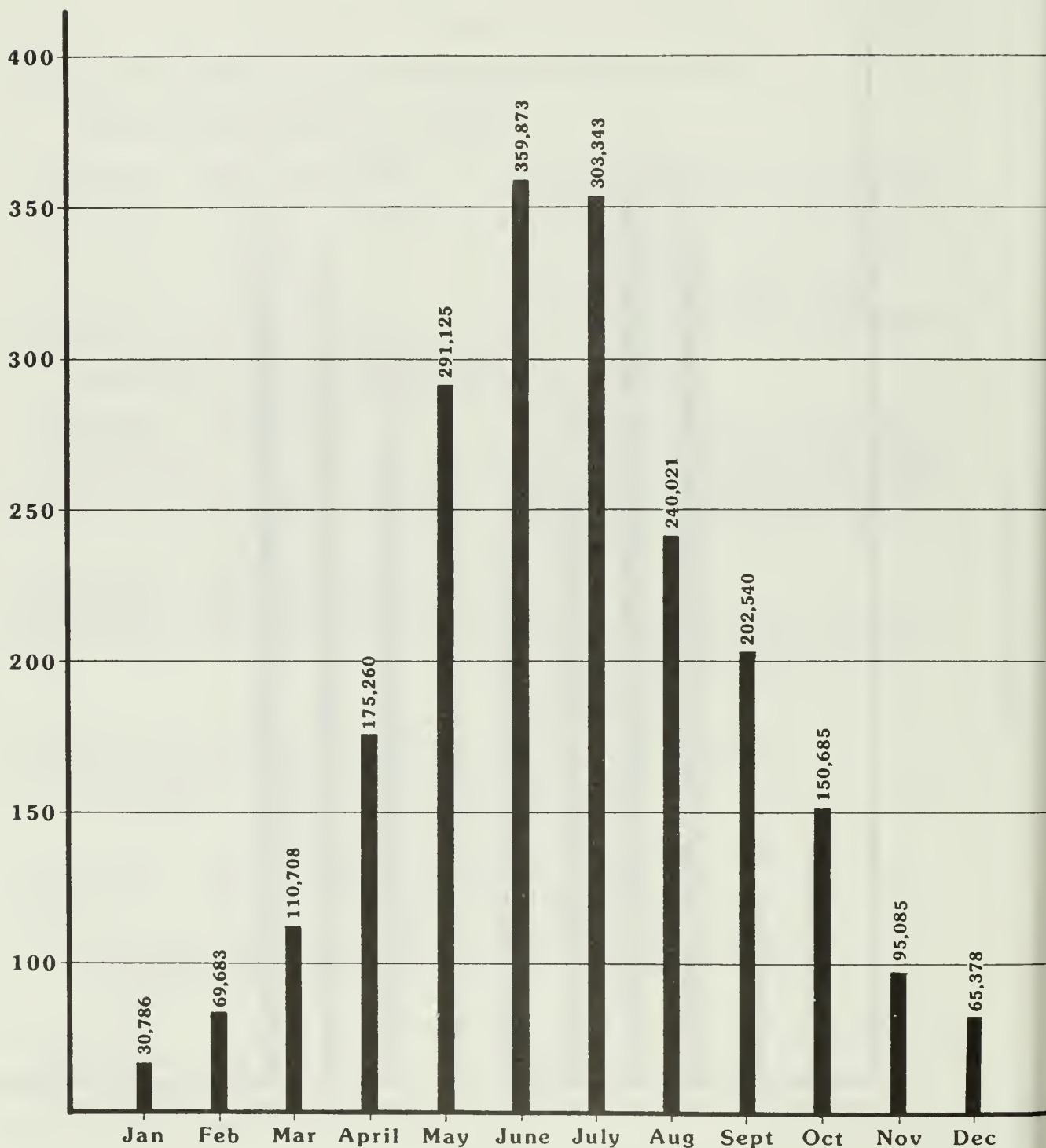
2. Breakdown by Interpretation and Visitor Services program use

25 percent - use information/orientation and/or nonpersonal services only
15 percent - attend personally-conducted or presented activities
60 percent - nonprogram users.



Annual Visitation 1975-1984
Glen Canyon National Recreation Area

visitation in thousands



Monthly Visitation - 1984

Glen Canyon National Recreation Area

E. FACILITIES AND EQUIPMENT ANALYSIS

1. Historic Structures

<u>Structure Name</u>	<u>Historic Structure Number</u>	<u>National Register Date</u>	<u>Location</u>
Barn	HS 236	5/19/78	Lonely Dell Ranch
Dugout	HS 234	5/19/78	Lonely Dell Ranch
Lee Blacksmith Shop	HS 233	5/19/78	Lonely Dell Ranch
Lee Cabin	HS 232	5/19/78	Lonely Dell Ranch
Lees Ferry Chicken House	HS 224	3/15/76	Lees Ferry
Lees Ferry Fort	HS 220	3/15/76	Lees Ferry Historic District
Lees Ferry Post Office	HS 221	3/15/76	Lees Ferry Historic District
Lees Ferry Root Cellar	HS 225	3/15/76	Lonely Dell Ranch
Lees Lookout	HS 227	5/19/78	Lees Ferry Historic District
Old Spender Cabin	HS 222	3/15/76	Lees Ferry Historic District
Spencer Steamboat	HS 226	5/19/78	Lees Ferry Historic District
Weaver House	HS 235	5/19/78	Lonely Dell Ranch
Defiance House	National Register	12/20/78	Forgotten Canyon

2. National Register of Historic Places

<u>Structure Name</u>	<u>National Register Date</u>
Defiance House	12/20/78
Davis Gulch Pictograph Panel	6/05/75
Hole-in-the-Rock	11/03/75
Lees Ferry	3/15/76
Lonely Dell Ranch Historic District	5/19/78
Hole-in-the-Rock Trail	8/09/82

There are two historic districts at Lees Ferry which are important and must be maintained. One district is the Lees Ferry Fort site and the second is the Lonely Dell Ranch site.

The Lees Ferry Fort consists of four stone structures of different ages and historical significance. The Lees Ferry Fort was constructed in 1874 as a trading post for the Navajo Indians and for protection.

The second stone building is the post office. This structure was built around 1913 and is adjacent to the Lees Ferry Fort. The other two buildings are located a short distance away from the fort and post office and are associated with the Spencer mining operations. The first was built somewhere around 1911 as a part of the Charles Spencer mining operation, and the second was built in the 1950's by the U.S. Geological Survey as a temporary quarters for the men taking readings from the gauging station.

The Lonely Dell Ranch site is a mixture of buildings from the original settlement of the area up to the late 1950's. There are four buildings from the 1870's--a blacksmith shop, a small cabin, a dugout cell, and a barn. The stone ranch house was built in 1937 or 1938 with the wood frame addition having been constructed about 1958. There is also a cemetery within the boundaries of the old ranch.

3. Roads and Trails

There are a total of 199.32 miles of National Park Service roads within Glen Canyon National Recreation Area. In the roads inventory for the park, the Federal Highway Administration identified 109 routes which were classified, rated, and inventoried. The number of routes and classifications are:

<u>Number of Routes</u>	<u>Classification</u>
9	Major recreation area roads
20	Major roads
13	Minor roads
28	Special purpose roads
26	Administrative roads
13	One-way roads

Of the 199.32 miles of road inventoried and maintained by the National Park Service, 67.9 miles are surface and 131.42 miles are gravel roads.

There are an additional 42.3 miles of back-country roads which were not inventoried. The total cost projected by the Federal Highway Administration to bring the inventoried roads up to standard in 1980 dollars was \$54,470,000. Recently completed development concept plans, as well as several which are in progress, have identified additional road needs including the construction of additional launch ramps. Under the preferred alternative for the Bullfrog Basin Development Concept Plan, which is currently in draft form, a second launch ramp has been identified for construction. The State line launch ramp must be extended as the elevation of the lake drops. The present launch ramp

has a concrete surface down to an approximate elevation of 3,678. The top of this ramp is at an elevation of 3,706 and is 150 feet wide. The main launch ramp is 200 feet wide and has a concrete surface down to an approximate elevation of 3,625 with the top of the concrete surface at approximately 3,705. The launch ramp at Bullfrog Basin is 100 feet wide and has a concrete surface from an approximate elevation of 3,625 to 3,705. The launch ramp at Halls Crossing is 100 feet wide and has a concrete surface from an approximate elevation of 3,550 to 3,708. The launch ramp at Hite is 160 feet wide which includes a 60-foot-wide side launch ramp and has a concrete surface between an approximate elevation of 3,680 and 3,707. All of the public launch ramps within Glen Canyon National Recreation Area have concrete surfaces between the normal operating levels of the lake. The government launch ramp at Wahweap has a concrete surface between approximately 3,650 feet and 3,665 feet. This ramp needs a concrete surface between an approximate elevation of 3,625 and 3,705 as funding and lake elevation permits. The Hite access road and the Halls Crossing access road are of hot asphalt construction. All of the other paved roads within the Glen Canyon National Recreation Area are only surface treated and need to be paved with hot asphalt. The cost of this paving is included in the 1980 figures provided by the Federal Highway Road Survey.

There is one bridge within Glen Canyon National Recreation Area, at Lees Ferry, spanning the Paria River. This bridge is of steel girder and has a steel pile mid pier with concrete abutments as end supports. The bridge has a 2-inch by 6-inch wood laminated deck with a walkway on the upstream side. The total width of the bridge is 24 feet. There is a steel handrail on both sides of the bridge. This bridge was redecked in 1984.

There is a pipe and a concrete culvert crossing at Bullfrog Basin Providing access to the marina and dry storage area of the concession operation. This is a temporary road crossing, which will be replaced when the by-pass road is identified in the preferred alternative of the in-progress development concept plan for the Bullfrog Basin developed area. There has been considerable maintenance required for this road as the lake elevation rose and caused considerable settling of the soil. As this is a temporary facility and will be removed when the by-pass road is constructed, the park does not want to spend any considerable amount of funds on maintenance of this crossing.

There are approximately 1,300 lineal feet of floating walkway and courtesy dock serving Rainbow Bridge National Monument, but partially within the national monument and national recreation area. The existing walkway was

constructed by park forces and is considered temporary. A contract has been negotiated with Kalispell Metal Products for the construction of steel walkway sections to replace the temporary sections. A part of the floating walkway structure is a complete anchoring system.

4. Nonhistoric Buildings

Lees Ferry

- 3 comfort stations
- 2 concrete vault toilets
- 1 visitor contact station/ranger station
- 59-site campground with picnic tables, grills, and sun screens
- 1 water treatment plant
- 1 maintenance workshop
- 1 storage shed
- 3 houses (concrete block)
- 1 trailer (seasonal quarters)
- 1 trailer dump station
- 1 launch ramp - concrete surface for upriver boating
- 1 launch ramp - gravel surface for river runner rigging and loading
- 1 flagpole

Wahweap and Page

- 2 portable comfort stations with handicap access ramps
- 9 comfort stations (2 comfort stations are handicap accessible)
- 1 visitor contact/ranger station
- 1 headquarters building
- 1 hangar
- 1 maintenance shop-warehouse
- 1 boat shop-warehouse
- 1 warehouse
- 1 amphitheater projection building
- 1 amphitheater stage/screen
- 3 well houses
- 1 fish-cleaning station
- 1 trailer dump station
- 360 lineal feet of floating courtesy dock
- 60 lineal feet of walkway connection
- 600 lineal feet of floating breakwater
- 1 Government fuel dock/repair dock - 2,160 square feet
- 1 Government boat dock - 2,388 square feet
- 1 3-station boat pump-out unit - 1,280 square feet
- 17 houses (quarters)
- 2 4-unit apartments
- 4 trailers (quarters)

- 1 TDY quarters
- 2 Denver Service Center trailers (quarters)
- 179-site campground, plus 1 group loop and 1 undeveloped loop
- 2 flagpoles
- 1 visitor center with exhibits. Glen Canyon National Recreation Area operates the visitor center and performs cleaning and minor maintenance and repair. The Bureau of Reclamation owns the building and is responsible for any major maintenance and repair.

Lone Rock

- 8 vault toilets

Dangling Rope

- 28,812 square feet of floating marina structure
- 2 comfort stations
- 1 visitor contact station
- 7 boat pump-out stations
- a flagpole
- 2 storage buildings
- 281 lineal feet of precast-concrete ramp access road
- 127 lineal feet of precast-concrete ramp access road poured and stockpiled at Wahweap to be installed by park forces when the lake elevation drops.
- 1 duplex housing unit
- 1 6-person dorm
- 1 recreation building
- 1 generator/maintenance building
- 1 well house

Bullfrog Basin

- 1 portable comfort station
- 5 comfort stations
- 1 visitor contact station
- 1 clinic facility
- 1 district headquarters building
- 1 maintenance shop/firehouse/warehouse/generator building
- 2 well houses
- 4 duplex housing units
- 10 trailers (quarters)
- 1 fish cleaning station
- 1 1-station boat pump-out unit - 656 square feet
- 120 lineal feet courtesy dock
- 1 Government boat dock - 744 square feet
- 86-site campground, plus 3 undeveloped loops
- 1 trailer dump station
- 1 flagpole

Halls Crossing

- 1 portable comfort station
- 2 comfort stations
- 60 lineal feet of courtesy dock
- 75-site campground
- 2 modular units (quarters)
- 1 trailer (quarters)
- 1 1-station boat pump-out unit - 656 square feet
- 1 trailer dump station

Hite

- 1 portable comfort station
- 1 visitor contact station/warehouse
- 1 water treatment plant
- 2 trailers (quarters)
- 2 transahouses (quarters)
- 1 storage shed
- 40 lineal feet of courtesy dock
- 1 1-station boat pump-out facility - 656 square feet
- 1 trailer dump station

Escalante

- 1 trailer (quarters and visitor contact)

5. Utilities

Lees Ferry

- 9 separate septic systems
- 1 water treatment plant
- Water-intake structure and pumping structure for the Colorado River
- 1 250,000-gallon water-storage tank
- 1 water distribution system
- 1 irrigation-water system serving the historic Lonely Dell Ranch

Wahweap

- 2 sewage lagoon systems (total 13.5 acres, 8 cells)
- 2 sewage collection systems
- 5 permanent lift stations
- 2 portable lift stations
- 3 wells and pumping systems
- 2 500,000-gallon water storage tanks
- 1 water distribution system
- Irrigation system

Dangling Rope

- 1 sewage lagoon system (total 2.09 acres, 3 cells)
- 1 sewage collection system
- 2 lift stations
- 1 well and pumping system
- 1 water distribution system
- 1 55,000-gallon water storage tank
- 1 electric generating system with two 250-kw generators and one 150-kw generator
- 1 electric distribution system

Bullfrog Basin

- 1 sewage lagoon system (total 4.0 acres, 4 cells)
- 1 sewage collection system
- 4 lift stations
- 2 wells and pumping systems
- 1 water distribution system
- 1 500,000-gallon water storage tank
- 1 electric generating system with two 250-kw generators
- 1 electric distribution system

Halls Crossing

- 1 sewage lagoon system (total 2.75 acres, 3 cells)
- 1 sewage collection system
- 2 lift stations
- 2 wells and pumping systems
- 1 water distribution system
- 1 300,000-gallon water storage tank
- 1 electric generating system with two 230-kw generators and one 150-kw generator
- 1 electric distribution system

Hite

- 1 sewage lagoon system (total 0.75 acres, 2 cells)
- 1 sewage collection system
- 1 lift station
- 1 water-intake structure with pumping system
- 1 water treatment plant
- 1 water distribution system
- 1 55,000-gallon water storage tank
- 1 electric distribution system

F. STATUS OF PLANNING

<u>NAME OF PLAN/STUDY</u>	<u>PREPARER</u>	<u>DATE APPROVED</u>	<u>COMMENT ON CURRENCY</u>
GENERAL MANAGEMENT PLAN	DSC	July 1979	Current
<u>IMPLEMENTATION PLANS</u>			
<u>Natural Resources</u>			
Natural Resource Management Plan	GLCA		In progress
Mineral Management Plan	GLCA	March 1980	Current
<u>Cultural Resources</u>			
Cultural Resource Management Plan	GLCA		In progress
<u>Wilderness</u>			
Wilderness Recommendation	DSC		Prepared September of 1980 awaiting approval
<u>Visitor Services</u>			
Carrying Capacity 1982 Study	DSC	November 1982	Needs revision and rewriting
Summary Carrying Capacity Study	DSC	November	Needs revision and rewriting
Feasibility Study Ferry Service	Parsons Brinkerhoft	July 1981	Current
Engineering Report - Burr Trail	Creamer and Noble	1984	Current
Feasibility Study	Utah State		
Agricultural Community	University	1984	Current
Draft Environmental Impact Statement, Tar Sands Triangle	NPS & BLM	1984	Current

Development

Environmental Assessment, Halls Crossing Access Road	DSC	1975	--
Environmental Assessment, Boulder-Bullfrog Road	RMR	1985	Being reviewed (a CARE project)
Environmental Assessment/Development Concept Plan, Halls Crossing	Stypula Assoc.	October 1976	Being revised
Environmental Assessment/Development Concept Plan, Bullfrog Basin	Stypula Assoc.	January 1977	Being revised
Assessment of Alternatives, Development Concept Plan, Lone Rock	RMR	May 1979	Current
Development Concept Plan, Lone Rock	RMR	August 1981	Current
Draft Environmental Assessment, Development Concept Plan, Wahweap	DSC	September 1982	Current
Record of Decision, FONSI Wahweap	DSC	December 1982	Current
Development Concept Plan, Wahweap	DSC	July 1983	Current
Environmental Assessment/Development Concept Plan, Hite	DSC	November 1983	Current
Development Concept Plan, FONSI, Hite	DSC	August 1983	Current
Draft Upriver Recreation Plan, Environmental Assessment, Lees Ferry	Park	November 1983	Current
Upriver Recreation Plan, Environmental Assessment, Lees Ferry	Park	February 1984	Current

Upriver Recreation Plan, Environmental Assessment, FONSI, Lees Ferry	Park	August 1984	Current
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Environmental Assessment, Ferry Service, Bullfrog Basin and Halls Crossing	RMR	March 1984	Current
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Other

Economic Feasibility Study, Antelope Point	DSC	November 1983	Current
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G. EXISTING MANAGEMENT ZONING






The management zoning for the recreation area is shown on the Existing Management Zoning map.

The Natural Zone (668,670 acres) is the largest management zone in the recreation area. In this zone, natural processes and existing conditions are maintained, and the emphasis is on conserving land, water, and cultural resources. Back-country recreation is encouraged in this zone. Grazing is permitted; use of vehicles or mechanical equipment is prohibited.

The Recreation and Resource Utilization Zone (557,890 acres) includes Lake Powell and most of the adjoining lands not included in the Natural Zone. In this zone, the management strategy is to provide for a variety of recreational experiences and to permit mineral leasing and grazing to an extent consistent with conserving the area's scenic, scientific, and cultural resources. Motorized craft are permitted on the lake and vehicles on existing roads or in designated vehicle-use areas. Utility and transportation systems may be installed in this zone where appropriate.

Glen Canyon National Recreation Area's Development Zones are designated where lands and waters are identified for recreational support facilities and visitor services (19,270 acres). These include Lees Ferry, Wahweap/Lone Rock, Dangling Rope, Llewellyn Gulch, Bullfrog Basin, Halls Crossing, and Hite. A minor developed area exists at Hans Flat in the Orange Cliffs. Certain road corridors are included in the zone for access to facilities. This zone includes Glen Canyon Dam. Activities permitted in the Recreation and Resources Utilization Zone are also permitted in the Development Zone where appropriate (grazing is not permitted in areas dominated by visitor facilities).

legend

-  national recreation area boundary
-  natural zone
(668,670 acres-54% of the rec. area)
-  special use zone
(557,890 acres-45% of the rec. area)
-  development zone
(19,270 acres-0.998% of the rec. area)
-  historic zone
(25 acres-0.002% of the rec. area)

0 5 10 miles
0 5 10 15 kilometers



CANYONLANDS
NATIONAL PARK
(detached unit)

NATL. PARK

Hans Flat

Hite

CAPITAL REEF
NATIONAL PARK

Bullfrog
Basin

NATURAL BRIDGES
NATIONAL MONUMENT

Halls
Crossing

Llewellyn
Gulch

Dangling
Rope

RAINBOW BRIDGE
NATIONAL MONUMENT

Navajo Indian

UTAH
ARIZONA

Reservation

Wahweap

Lees Ferry

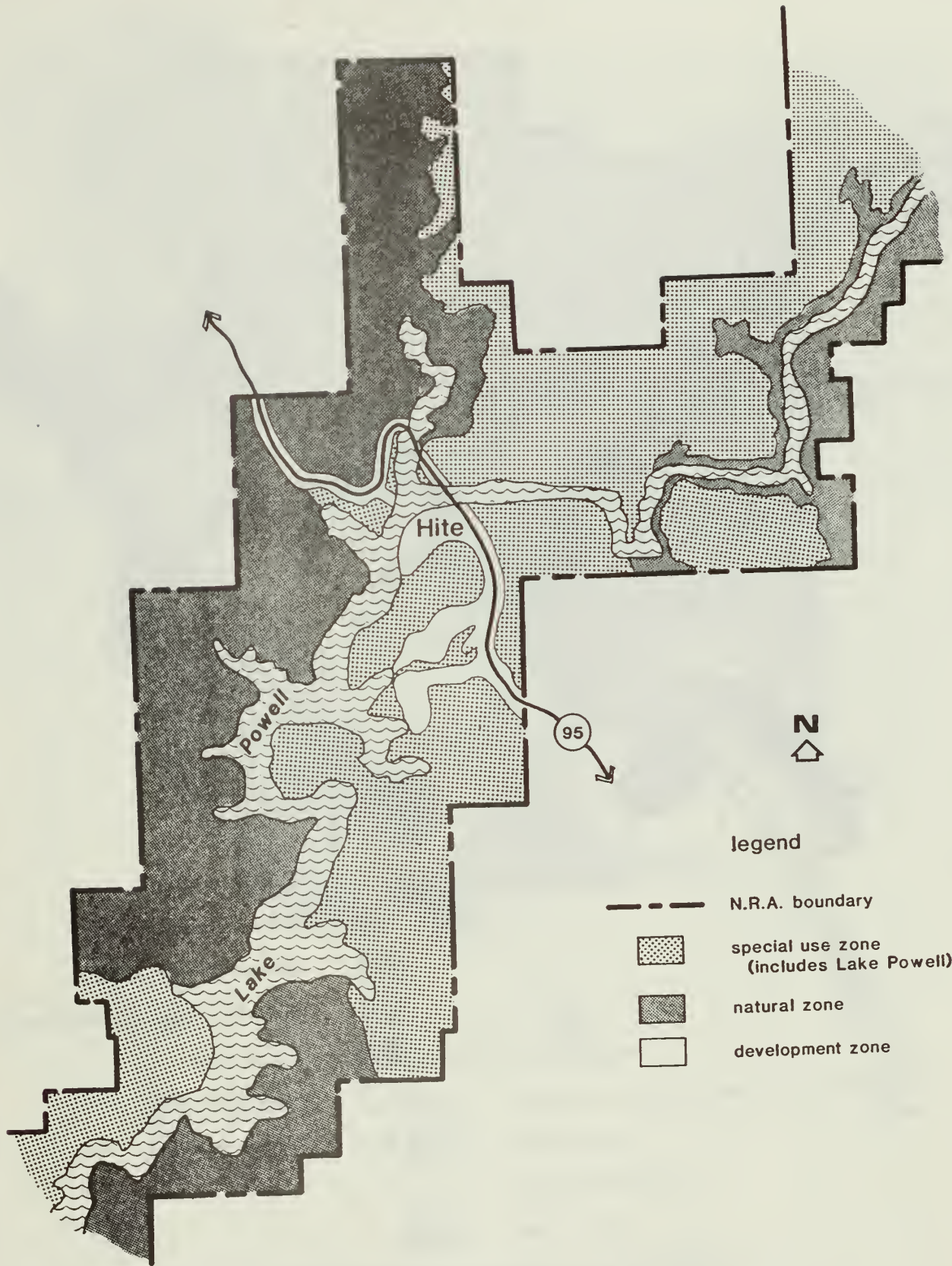
GRAND CANYON
NATIONAL PARK

Existing Management Zoning Map Glen Canyon National Recreation Area Arizona - Utah

United States Department of the Interior - National Park Service

608 80,092
Aug 95 RMPO

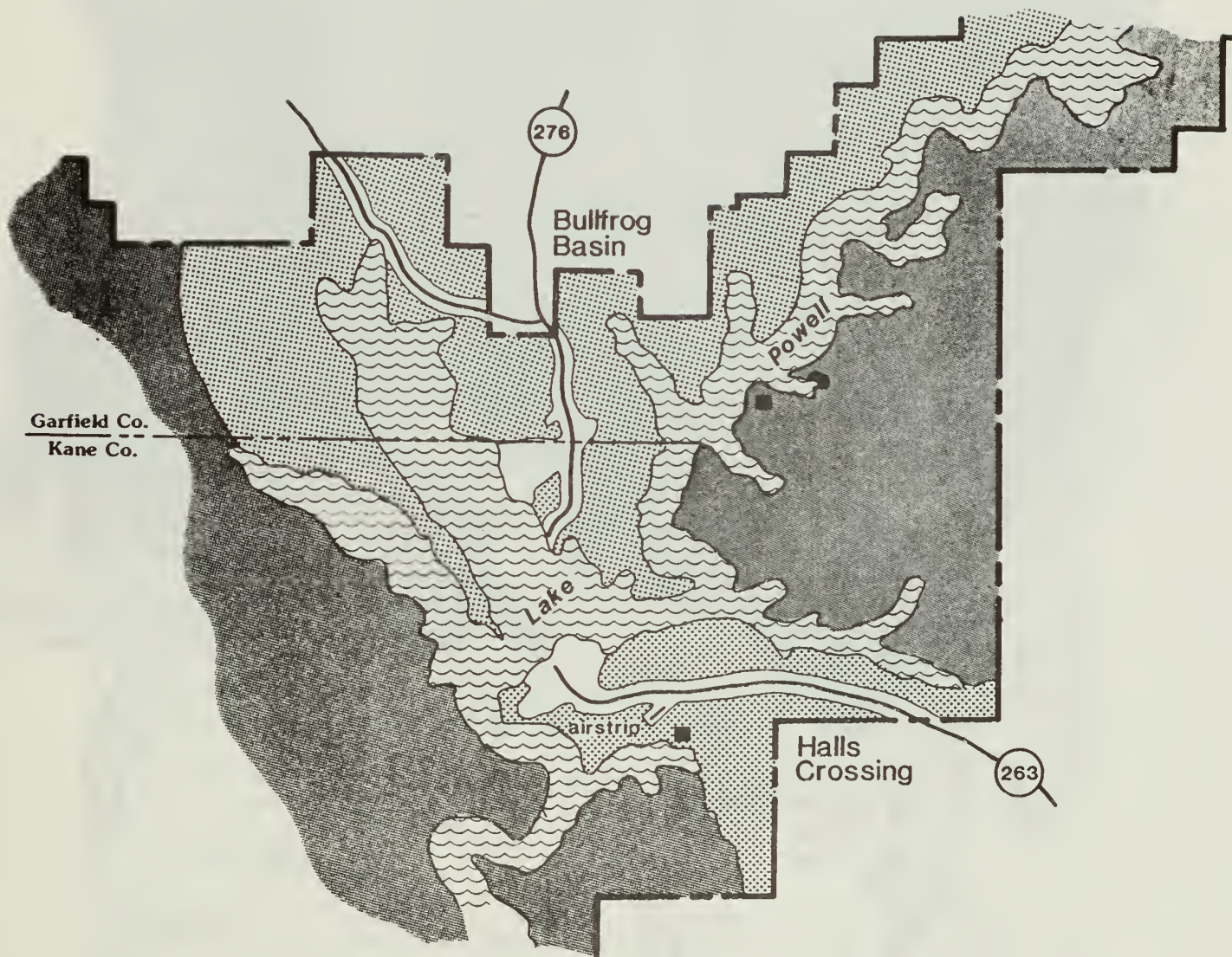
Sheet 1 of 5



Existing Management Zoning Map
Hite Area
Glen Canyon National Recreation Area

Sheet 2 of 5

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legend



N.R.A. boundary



special use zone (includes Lake Powell)



natural zone



development zone

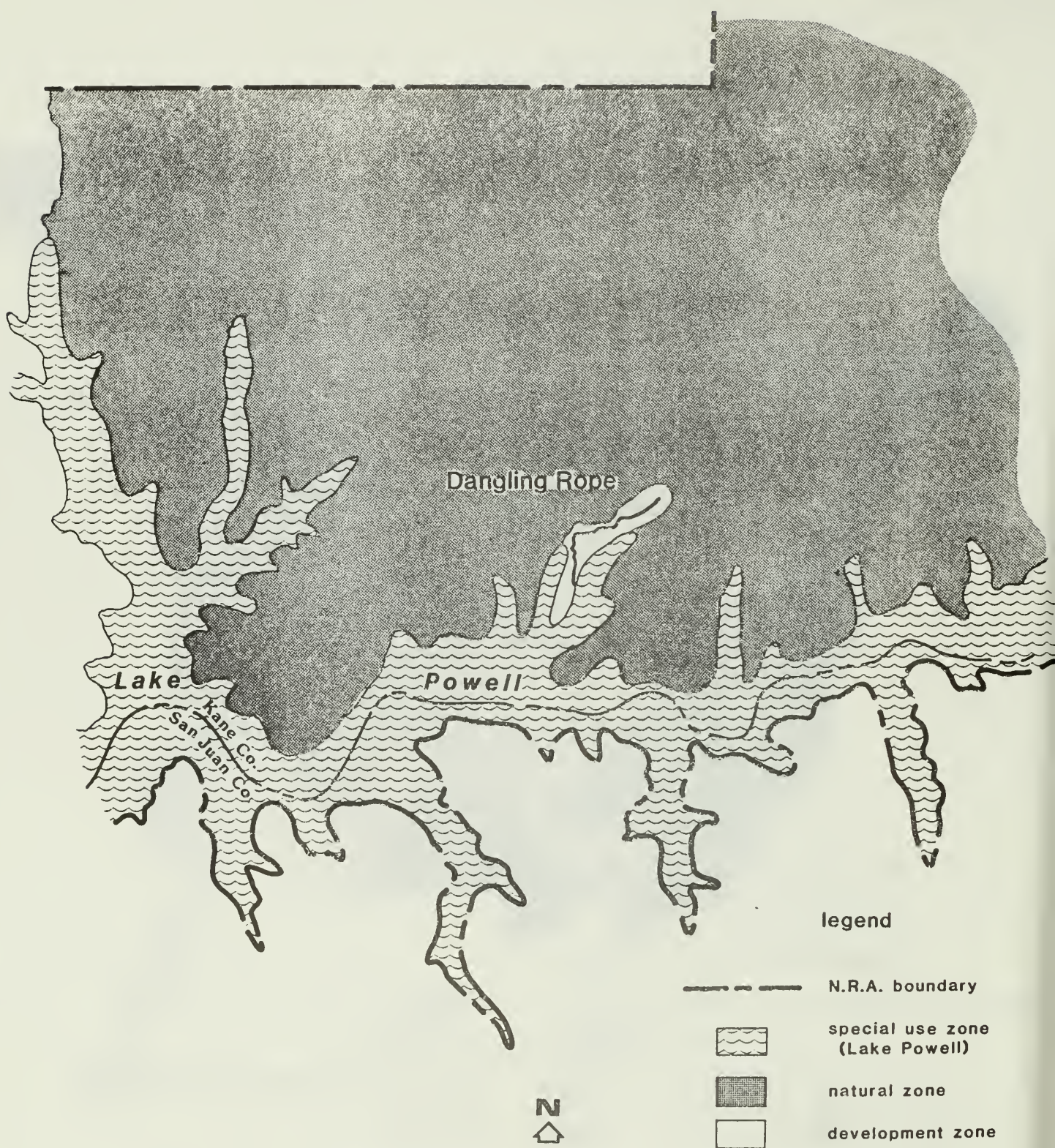


historic zone

Existing Management Zoning Map Bullfrog Basin-Halls Crossing Area Glen Canyon National Recreation Area

Sheet 4 of 5

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Aug 85 | RMRO



Existing Management Zoning Map
Dangling Rope Area
Glen Canyon National Recreation Area

Sheet 5 of 5

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Aug 85 | RMRO

The Cultural Zone (25 acres) is managed to preserve, interpret, and restore (where deemed appropriate by professional analysis) archeologic and historic resources of the recreation area. Inventory, interpretation, and research are emphasized areas. The zone includes Lonely Dell Ranch, Lees Ferry Historic District, Davis Gulch Pictograph panel, Defiance House Ruin, Fifty-Mile Mountain Cultural District, and Hole-in-the-Rock Trail.

IV. MAJOR ISSUES

A. CONCESSIONS

The scale of proposed commercial development has dramatically increased in the past 3 years including the prospect of new marinas located at Antelope Point and on the San Juan arm. Current development concept plans for existing marinas would more than double visitor service capacity. These increases are in response to unprecedented demand for the facilities. This gives rise to the following specific issues.

1. When will we reach the carrying capacity of the lake and how should use be limited?
2. How do we provide infrastructure support for concession development in a period of austere funding?
3. How can the park support the proposed expansion if National Park Service operational funds are not provided?

B. TAR SANDS

Glen Canyon is in a region replete with energy-rich hydrocarbon deposits known as tar sands. Such deposits are found in the region between the Dirty Devil and the Colorado Rivers (Tar Sand Triangle), above White Canyon, and in the Circle Cliffs north of Glen Canyon's Escalante Subdistrict (adjacent to Capitol Reef National Park). Seven separate development proposals have been filed with the Federal Government for permission to extract tar sands from the Tar Sand Triangle and Circle Cliffs areas. All of the proposals would result in intensive industrial operations adjacent to--or, in one case, within--the recreation area. They would affect the air, water, biotic habitat, and recreational quality of national recreation area lands adjoining the operations. All of the proposals are still undergoing Federal review; nevertheless, whether through approval of the present proposals or through future hydrocarbon leasing, tar sands development will remain a major issue in management of the recreation area for many years.

C. LEASING OF FEDERAL MINERAL RIGHTS

Under the approved general management plan 370,000 acres are available for the leasing of Federal mineral rights. Presently, there are 55 lease offers pending for approximately 160,000 acres. No leases have been offered since the establishment of the recreation area.

In 1973, when the Bureau of Land Management authorized activity on an existing oil and gas lease, the Sierra Club filed suit in District Court stating that the Bureau of Land Management, the National Park Service, and the Secretary of Interior did not comply with the National Environmental Policy Act in the evaluation of the drilling plan. In 1979, the court ordered the Department of Interior to develop the regulatory procedures to provide for the protection of the area's resources while providing for mineral development. The court also ordered the National Park Service to develop a minerals management plan identifying areas where mineral development would be inconsistent with the legislative purpose of area. The minerals management plan was completed in 1980, and the procedural regulations--including the leasing of normally locatable minerals--were promulgated in 1981.

The evaluation of leasing within the 370,000 acres available for leasing will be evaluated on a district basis and be included in a parkwide environmental assessment. Preparation of the assessment will be closely coordinated with the Bureau of Land Management and the National Park Service, Division of Energy, Mining, and Minerals.

D. GRAZING

Grazing is an activity authorized by the enabling legislation, which utilized about 80 percent of the national recreation area. The Glen Canyon enabling legislation left the National Park Service/Bureau of Land Management relationship in grazing management vague.

The National Park Service/Bureau of Land Management Umbrella Memorandum of Understanding on grazing somewhat clarified this issue. However, local level memorandums of understanding are needed to clarify procedural points. In addition, grazing impacts on national recreation area resources and their interface with the values and purposes of the national recreation area need to be evaluated and National Park Service policy on specific grazing matters formulated. A grazing management plan is needed to address this. This plan is called for by the general management plan as an integral component.

E. PLANNING

As Glen Canyon National Recreation Area is a relatively new area, there are a number of studies which must be completed to provide the necessary back-ground information for park management to make development and management decisions. Current Development Concept Plans exist for Wahweap, Lone Rock, Dangling Rope, and Hite. Development Concept Plans are currently being prepared for Lees Ferry, Bullfrog Basin, and Halls Crossing. These development concept plans should be completed this fiscal year. There are a number of additional development concept plans which need to be prepared.

The Hans Flat/Orange Cliffs management area needs to have a development concept plan prepared particularly because of the activity within that area as a result of the Tar Sands Triangle and other mineral exploration. A development concept plan was prepared in 1973, but addressed those issues and needs of Canyonlands National Park only. Hans Flat is the management headquarters for the Maze District of Canyonlands National Park. The increase in visitation to the area, as well as the increased mineral exploration and activity, makes it imperative that a development concept plan be prepared so that the area can be managed and needs identified before there is irreversible damage to the natural resource as a result of development, expansion, or use which is not identified as necessary or appropriate by the development concept plan.

The Escalante District includes the historic Hole-in-the-Rock Road and the Escalante River and drainage system. It is a vast area of very popular back-country use for hiking and camping. It includes a tremendous variety of natural features as well a wealth of archeological sites. The tremendous increase in the visitation to this area has resulted in the degradation of the resource through over use of certain areas. There has also been a great deal of vandalism to the archeologic resources. A development concept plan needs to be prepared which will identify the problems or problem areas and determine the carrying capacity. It will also identify those areas suitable for more intensive use such as campsites. This will relieve the pressures currently experienced. The State of Utah is planning to pave its portions of the Hole-in-the-Rock Road and is pushing for the National Park Service to pave its portions of this road. The State would then like to have the history of the road interpreted.

There are numerous overlook areas within the Glen Canyon National Recreation Area which receive significant visitation and are totally undeveloped. These areas need to be studied to determine what projected use and visitation will be and to provide for appropriate development and interpretation. These areas are located throughout the national recreation area. The National Park Service has made commitments as in the legislative support data which supported the 1972 establishing act by identifying \$37,325,400 of developments for some type of development at some of these sites to the States of Arizona and Utah. A development concept plan encompassing all of these areas needs to be prepared.

Most of the existing interpretive development has been interim. There is no plan which provides for the interpretive development in the park. A comprehensive plan needs to be developed for parkwide needs. This plan will provide the necessary guidelines for management in developing interpretive programs.

There are four developed areas within the national recreation area which rely on diesel powered electric generation. The cost of this type of power is extremely expensive and inefficient and will become more so each year. This causes a large drain on the park operating funds. Alternative sources for power need to be explored and developed. These sources would include the newest technologies for producing electricity as well as the cost of commercial power being brought to the sites.

Lake and river waters are prime park resources currently experiencing intense utilization in some areas as well as substantial threats from adjacent development. Baseline quality data is needed to design effective monitoring and establish a standard for comparison. Flood-hazard maps need to be prepared as well as the identification of the lake flood level to assist in the design of facilities. Springs and seeps are important habitat factors subject to contamination and over-use and elimination where aquifer source interference occurs. Determinations need to be made of the type and amount of heavy metals present in the waters, and of their build-up in the animal and fish populations of the national recreation area. The park needs to identify and implement long-range strategies to protect the water resources and provide guidance in the resolution of day-to-day conflicts. A water-rights study also needs to be done for the Colorado River and Lake Powell to determine quantities of water available for Glen Canyon National Recreation Area needs.

There are no complete histories for any of the historical areas within Glen Canyon National Recreation Area or adjacent areas. There is a rich and varied historical background of the area which needs to be written and documented in order to assist management in making decisions concerning development, preservation, restoration, and interpretation.

There is a great deal of back-country use within the Glen Canyon National Recreation Area or adjacent areas. This use tends to be concentrated in several areas of unique natural resources. This concentrated use has caused problems of human impacts (human waste, fire scars, erosion, soil compaction, and water resource degradation). A back-country management plan needs to be prepared to identify problems or problem areas and develop guidelines for the proper management of these areas and determine what actions are necessary to eliminate the problems.

A Threatened and Endangered Species Management Plan needs to be prepared to inventory those threatened and endangered species found within the boundaries of Glen Canyon National Recreation Area and then plan for their protection, maintenance, and enhancement.

There has been a great deal of archeological research in the Glen Canyon National Recreation Area since the early 1960's, mostly through various universities, and numerous papers have been written. However, all of these papers and reports are not available at the park and there is no easy way of retrieving data or cross-referencing any of this information. A bibliography of all of the research papers and studies needs to be prepared which will allow easy data gathering, sorting, and evaluation.

A Development Concept Plan is currently being prepared for the Lees Ferry Developed Area. The General Management Plan for the Glen Canyon National Recreation Area identifies the primary emphasis of the Lees Ferry development as area history and river access. The area contains two historic districts--Lonely Dell Ranch and Lees Fort Historic Districts. The draft Development Concept Plan for Lees Ferry calls for the development and interpretation of the historic resources. The existing history and documentation for the two historic districts at Lees Ferry is very sketchy. There is very little detail available which can be called accurate. There is a great deal of overlap in the history and much of it is based on stories handed down through the families who were involved. A Historic Grounds, Buildings, and Furnishings Report needs to be developed so that the interpretive program/development can be designed.

Environmental assessments are required for public review for all lease applications and permits for oil, gas, and mineral leases as well as grazing. Preparation of environmental assessments are time consuming and require much time in the field inventorying and analyzing data. This includes inventory of the soil types and locations as well as the plant communities for the various areas within the Glen Canyon National Recreation Area. An overall inventory and analysis including mapping needs to be prepared for the entire national recreation area which can be utilized in all planning efforts as well as the preparation of various environmental documents and other studies.

Many historic as well as nonhistoric trails crisscross Glen Canyon National Recreation Area. Some have been related to their historic importance, but many others have not. There are also trails which are known only through stories and legend, never having been actually located on the ground. All of the trails within the national recreation area need to be inventoried and their historic significance determined. Included with this should be the preparation of maps showing the location of trails and how they connected areas outside the national recreation boundaries.

Archeological work has been performed within the Glen Canyon National Recreation Area since the early 1960's. However, most of this early work was done to identify those sites which would be inundated as a result of the filling of Lake Powell and would be lost forever. The more recent work has been done as a part of the development concept planning work and the actual construction activities. Work has been done when there was a need for archeological clearances. Glen Canyon is considered to be a prime area for archeological site, but very little work has been done to locate, inventory, and assess sites within the national recreation area. As result, the park does not know what the archeological resources are or where they are located. This means that the park is unable to provide the protection needed to prevent or lessen the vandalism which is a constant problem. If the important sites could be identified, a program of inspection and protection could be developed which would help preserve the archeological resources of the area.

The discovery of dung deposits in Bechan Cave in the Escalante drainage has proved to be very significant. It is quite likely that there are other sites of equal importance within the Glen Canyon National Recreation Area. Known and possible sites need to be investigated and a survey conducted to locate those other sites. Increase in visitation and associated pressures of human impacts will have a negative effect on this type of resource and possible destruction of important information.

A study needs to be done to survey, identify, and inventory all of the exotic and indigenous plants within Glen Canyon National Recreation Area. From the information gathered, an integrated pest management plan needs to be developed for the elimination of the exotic species.

V. MANAGEMENT OBJECTIVES

A. PARKWIDE MANAGEMENT OBJECTIVES

Level I

To manage the recreation area so that it provides maximum recreational enjoyment to the American public and their guests.

To maximize the recreational experiences and the number of opportunities for enjoying the recreation area.

To provide the richest possible interpretive experience to visitors of the recreation area.

To manage the recreation area within its legislatively imposed constraints.

To manage as de facto wilderness the 588,855 acres (47 percent of the land surface) recommended for wilderness designation until Congress takes specific action with regard to wilderness within Glen Canyon National Recreation Area.

Level II

To accommodate many varieties of use, but to favor water-oriented recreation.

To create varying kinds and uneven intensities of use along the length of the reservoir and throughout other portions of the recreation area.

To establish recreational-use patterns that insure all visitors have equal opportunities to enjoy the area and utilize the available recreation facilities.

To provide, through the use of concessions, those commercial facilities and services within the recreation area that are necessary for the visitor's use and enjoyment of the area. Concession developments shall be limited to those necessary and appropriate for public use and enjoyment of the area and be consistent, to the highest degree possible, with the areas preservation and conservation.

To interpret historical and archeological resources and the culture of aboriginal societies while centering interpretive themes around outdoor recreation.

To promote a sense of exploration and fortunate discovery while visiting and enjoying the recreation area.

To have interpretive opportunities available to all visitors to enhance their recreational experience and help perpetuate the area's environment by generating understanding, interest, appreciation, and respect for the area's recreational, natural, cultural, and historical resources and, on a broader scale, to encourage an environmental ethic.

To manage mineral and grazing use in accordance with the preservation of "scenic, scientific, and historic features contributing to public enjoyment of the area."

To encourage the maintenance of high water quality in all bodies and sources of water and to perpetuate the natural flow of free water.

To maximize the efficiency and effectiveness of the management of the recreation area and adjacent lands.

To cooperate with the Navajo Tribe in managing and developing the southern shoreline of Lake Powell for recreation use.

To instill through the area's interpretive and visitor services programs, an appreciation for Glen Canyon's climatic and physical hazards, thereby reducing the need for excessive safety barriers, special precautionary regulations, and law enforcement actions.

Level III

To survey the natural and cultural resources of the area to provide factual data on which to base development and management responses.

To manage the park's ecosystem in ways that interfere with natural processes as little as possible, consistent with permitted recreational and commercial uses.

To determine the significance of the park's cultural resources and to maintain the integrity of these resources.

Work cooperatively with the Bureau of Land Management and the States of Utah and Arizona to exchange State-owned lands within the recreation area for other Federal holdings in order to consolidate ownership of lands within the recreation area's boundary and reduce potential conflicts.

To coordinate planning and management with the Bureau of Land Management to ensure, to the greatest extent possible, that these activities do not conflict with recreation use and conservation of resources.

To coordinate planning and management of the aquatic resources of Lake Powell and the Colorado River with the States of Arizona and Utah, the Bureau of Reclamation, Corps of Engineers, and the U.S. Coast Guard.

To monitor environmental changes in the quality of the atmosphere and aquatic regime by working with Federal monitoring Agencies and to monitor changes in the terrestrial environment resulting from surface disturbance activities within and external to the area.

Level IV

To facilitate trail biking on areas capable of sustaining such activity and where conflicts with other uses do not occur.

To utilize local public communications media in providing information about the recreation area to residents and tourists of the Colorado Plateau.

To facilitate and encourage air travel over the canyon country.

B. AREA SPECIFIC MANAGEMENT OBJECTIVES

LEVEL I

LEVEL II

WAHWEAP

In the Wahweap/Lone Rock and Warm Creek areas, to provide for intensive water-recreation use.

At Wahweap to provide indoor activities for those visitors not using the lake.

LEES FERRY

To give primary emphasis to historical interpretation and access to recreational pursuits on the Colorado River.

To maintain and enhance function as a river runner's put-in and take-out point.

To maintain as a trailhead for day hikers and trail terminus for overnight hikers coming down through the Paria Canyon.

To provide access for fishermen to the Colorado River above Lees Ferry.

ESCALANTE

To maintain a relatively primitive experience.

To minimize air traffic over the Escalante River drainage.

To regulate use of the Escalante Canyons.

SAN JUAN

To maintain and provide a wild-river experience, relatively primitive boating opportunities, and the present degree of isolation.

BULLFROG/HALLS CROSSING/HITE

To utilize as a major center for both water- and land-oriented recreation, offering opportunities for a wide range of experiences.

DANGLING ROPE

To provide a range of goods and services to the boating public and so enhance their enjoyment and appreciation of Glen Canyon and Rainbow Bridge.

ORANGE CLIFFS

To maintain as a critical back-drop for Canyonlands National Park and as a major vantage point for spectacular views into the park.

To maintain year-round access to Panorama Point.

To maintain a relatively primitive, undeveloped atmosphere.

APPENDIX A

COOPERATIVE AGREEMENTS BETWEEN GLEN CANYON NATIONAL RECREATION AREA AND OTHER AGENCIES

Between the Bureau of Land Management and Glen Canyon National Recreation Area

Memorandum of Understanding relating to grazing in Glen Canyon National Recreation Area in the State of Arizona.

Memorandum of Understanding for coordination of wilderness studies on adjacent Bureau of Land Management administered lands.

Interagency Agreement for the administrative use of the Escalante River Canyon Area.

Memorandum of Understanding to provide for the coordination, at the field level, of management of National Park Service areas and associated Bureau of Land Management public land areas in Utah.

Memorandum of Understanding relating to grazing within Glen Canyon National Recreation Area in the State of Utah.

Memorandum of Agreement for repeater sharing and operation of two Bureau of Land Management resource radios in the Paria Canyon and Glen Canyon National Recreation Area in Arizona and Utah.

Cooperative Agreement for bighorn sheep transplant within Glen Canyon National Recreation Area between the National Park Service, the Bureau of Land Management, and the Utah Division of Wildlife Resources.

Letter of Understanding for a cooperative plan for liquid waste disposal from the Star Springs campgrounds to be disposed of in the sewage disposal system at Bullfrog Basin.

Memorandum of Understanding pertaining to the use of the Bureau of Land Management administrative site located at Escalante, Utah.

Memorandum of Understanding for the administration of river use on the San Juan River from Montezuma Creek, Utah, to Clay Hills Crossing, Utah, located partly within Glen Canyon.

Between the Navajo Tribe and Glen Canyon National Recreation Area

Memorandum of Agreement relating to the use and development of Glen Canyon National Recreation Area and adjacent tribal lands.

Memorandum of Agreement related to repeater sharing with the Navajo Mountain Ranger, Navajo Nation, Utah.

Between the U.S. Bureau of Reclamation and Glen Canyon National Recreation Area

Memorandum of Agreement for administration of recreation facilities, lands, water, and reclamation works on land withdrawn and acquired by the Bureau of Reclamation in the Glen Canyon National Recreation Area.

Memorandum from Chief, U.S. Bureau of Reclamation, pertaining to grounds maintenance at the Visitor Center.

Memorandum from Superintendent, Glen Canyon, to Regional Director, U.S. Bureau of Reclamation, relating to the Dominguez-Escalante Trail Exhibit.

Memorandum of Agreement concerning the handling of accidents at the visitor center and through the tour route.

Between the U.S. Geological Survey and Glen Canyon National Recreation Area

Memorandum of Agreement relating to the use and development of certain lands within Glen Canyon at Lees Ferry.

Cooperative Agreement for stream-gauging operations to be conducted in the Lees Ferry area, Glen Canyon National Recreation Area.

Between the State of Utah and Glen Canyon National Recreation Area

Cooperative Agreement between Utah Department of Natural Resources, Division of Wildlife Resources, to reintroduce desert bighorn sheep into Glen Canyon National Recreation Area.

Memorandum of Agreement between Utah Division of Parks and Recreation for boating law administration on the Utah portion of Lake Powell within Glen Canyon National Recreation Area.

Memorandum of Agreement between Utah Division of Wildlife Resources for the use of radio frequencies on the Glen Canyon radio system.

Memorandum of Agreement between Utah Division of Parks and Recreation for the use of radio frequencies on the Glen Canyon radio system.

Cooperative communications agreement between Utah Department of Transportation, Utah State Highway Patrol, for Glen Canyon to utilize radio frequencies of the Utah State Highway Patrol.

Between the City of Page, Arizona, and Glen Canyon National Recreation Area

Memorandum of Understanding between Page Police Department and Glen Canyon for radio dispatch assistance.

Letter from the Page Police Chief and Page Fire Chief authorizing Glen Canyon to utilize two of the City of Page radio frequencies.

Cooperative Agreement between the City of Page and Glen Canyon National Recreation Area for construction of Wahweap and Lees Ferry visitor-use facilities.

Between the United States Coast Guard and Glen Canyon National Recreation Area

Cooperative Boating Safety Agreement for a boating safety program on all waters within the recreation area provided by Glen Canyon National Recreation Area, and the U.S. Coast Guard will be responsible over matters which are within its exclusive jurisdiction.

Cooperative Navigational Aids Agreement for the establishment, operation, and maintenance of a system of navigational aids and regulatory markers conforming to established standards.

Letter of concurrence for Glen Canyon National Recreation Area to use Channel 22 to communicate with boaters on Lake Powell.

Between Garfield County, Utah, and Glen Canyon National Recreation Area

Memorandum of Understanding between Garfield County, Utah, Sheriff's Office, and Glen Canyon National Recreation Area detailing investigative roles of the National Park Service

Commissioned Officers in relationship to the State and local agencies.

Memorandum of Agreement for deputation of park rangers by the Sheriff of Garfield County, Utah.

Between Kane County, Utah, and Glen Canyon National Recreation Area

Memorandum of Understanding between Kane County, Utah, Sheriff's Office, and Glen Canyon National Recreation Area detailing investigative roles of the National Park Service Commissioned Officers in relationship to State and local agencies.

Between Coconino County, Arizona, and Glen Canyon National Recreation Area

Letter of Authorization for the use of Coconino County Sheriff's Office radio frequency for emergency law enforcement activities by Glen Canyon National Recreation Area.

Cooperative Agreement for the construction of Wahweap visitor use facilities under State Lake Improvement Funds (SLIF).

Memorandum of Understanding between Coconino County, Arizona, Sheriff's Office, and Glen Canyon National Recreation Area detailing investigative roles of National Park Service Commissioned Officers in relationship to State and local agencies.

Between the State of Arizona and Glen Canyon National Recreation Area

Memorandum of Agreement with the Arizona Department of Public Safety and Glen Canyon National Recreation Area for deputation of Arizona Department of Public Safety personnel as National Park Service Special Police Officers within Glen Canyon National Recreation Area.

Memorandum of Understanding with Arizona Department of Public Safety for use of telecommunications site on Navajo Mountain by the National Park Service and the use of office space at the Wahweap Ranger Office by the Arizona Department of Public Safety.

Between Samaritan Health Services and Glen Canyon National Recreation Area

Cooperative Agreement for emergency medical services training for National Park Service personnel.

Cooperative Agreement for adequate and suitable space for any radio communications, recording, and biomedical telemetry equipment needed for monitoring and/or supervision of recreation area personnel.

Between Northern Arizona University and Glen Canyon National Recreation Area

Cooperative Agreement to provide a cooperative effort toward a student-intern program to conduct monitoring and research programs on the park and to further educational opportunities.

Cooperative Agreement to establish paleoenvironmental programs with the recreation area.

Between the University of Arizona and Glen Canyon National Recreation Area

Cooperative Agreement to establish paleoenvironmental programs with the recreation area.

Between Wayne County, Utah, and Glen Canyon National Recreation Area

Memorandum of Understanding between Wayne County, Utah, the Sheriff's Office, and Glen Canyon National Recreation Area detailing investigative roles of the National Park Service Commissioned Officers in relationship to State and local agencies.

Between Bullfrog Resort and Marina, Inc., and Glen Canyon National Recreation Area

Cooperative Agreement to design, construction, installation, maintenance, and security of interior exhibits and displays to be located in the Anasazi Restaurant, Bullfrog Basin, Utah.

Between Canyonlands National Park and Glen Canyon National Recreation Area

Memorandum of Understanding for mutual coordination of management activities and information sharing between both

parks in the Orange Cliffs-Hans Flat area and the lower Cataract Canyon-upper Lake Powell area.

Between Navajo Nation and Glen Canyon National Recreation Area

Interagency Agreement for the repair and preventive maintenance of Navajo radio equipment by Glen Canyon personnel.

An Act to establish the Glen Canyon National Recreation Area in the States of Arizona and Utah. (86 Stat. 1311)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto in the States of Arizona and Utah and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area, there is established the Glen Canyon National Recreation Area (hereafter referred to as the "recreation area") to comprise the area generally depicted on the drawing entitled "Boundary Map Glen Canyon National Recreation Area," numbered GLC-91,006 and dated August 1972, which is on file and available for public inspection in the office of the National Park Service, Department of the Interior. The Secretary of the Interior (hereafter referred to as the "Secretary") may revise the boundaries of the recreation area from time to time by publication in the Federal Register of a revised drawing or other boundary description, but the total acreage of the national recreation area may not exceed one million two hundred and thirty-six thousand eight hundred and eighty acres.

SEC. 2. (a) Within the boundaries of the recreation area, the Secretary may acquire lands and interests in lands by donation, purchase, or exchange. Any lands owned by the States of Utah or Arizona, or any State, political subdivisions thereof, may be acquired only by donation or exchange. No lands held in trust for any Indian tribe may be acquired except with the concurrence of the tribal council.

(b) Nothing in this Act shall be construed to affect the mineral rights reserved to the Navajo Indian Tribe under section 2 of the Act of September 2, 1958 (72 Stat. 1686), or the rights reserved to the Navajo Indian Tribal Council in said section 2 with respect to the use of the lands there described under the heading "PARCEL B".

SEC. 3. (a) The lands within the recreation area, subject to valid existing rights, are withdrawn from location, entry, and patent under the United States mining laws. Under such regulations as he deems appropriate, the Secretary shall permit the removal of the nonleasable minerals from lands or interests in lands within the national recreation area in the manner prescribed by section 10 of the Act of August 4, 1939, as amended (53 Stat. 1196; 43 U.S.C. 387 et seq.), and he shall permit the removal of leasable minerals from lands or interests in lands within the recreation area in accordance with the Mineral Leasing Act of February 25, 1920, as amended

(30 U.S.C. 181 et seq.), or the Acquired Lands Mineral Leasing Act of August 7, 1947 (30 U.S.C. 351 et seq.), if he finds that such disposition would not have significant adverse effects on the Glen Canyon project or on the administration of the national recreation area pursuant to this Act.

(b) All receipts derived from permits and leases issued on lands in the recreation area under the Mineral Leasing Act of February 25, 1920, as amended, or the Act of August 7, 1947, shall be disposed of as provided in the applicable Act; and receipts from the disposition on non-leasable minerals within the recreation area shall be disposed of in the same manner as moneys received from the sale of public lands.

SEC. 4. The Secretary shall administer, protect, and develop the recreation area in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented, and with any other statutory authority available to him for the conservation and management of natural resources to the extent he finds such authority will further the purpose of this Act: *Provided, however,* That nothing in this Act shall affect or interfere with the authority of the Secretary granted by Public Law 485, Eighty-fourth Congress, second session, to operate Glen Canyon Dam and reservoir in accordance with the purposes of the Colorado River Storage Project Act for river regulation, irrigation, flood control, and generation of hydroelectric power.

SEC. 5. The Secretary shall permit hunting, fishing, and trapping on lands and waters under his jurisdiction within the boundaries of the recreation area in accordance with applicable laws of the United States and the States of Utah and Arizona, except that the Secretary may designate zones where, and establish periods when, no hunting, fishing, or trapping shall be permitted for reasons of public safety, administration, or public use and enjoyment. Except in emergencies, any regulation of the Secretary pursuant to this section shall be put into effect only after consultation with the appropriate State fish and game department.

SEC. 6. The administration of mineral and grazing leases within the recreation area shall be by the Bureau of Land Management. The same policies followed by the Bureau of Land Management in issuing and administering mineral and grazing leases on other lands under its jurisdiction shall be followed in regard to the lands within the boundaries of the recreation area, subject to the provisions of sections 3(a) and 4 of this Act.

SEC. 7. The Secretary shall grant easements and rights-of-way on a nondiscriminatory basis upon, over, under, across, or along any component of the recreation area unless he finds that the route of such easements and rights-

of-way would have significant adverse effects on the administration of the recreation area.

Sec. 8. (a) The Secretary together with the Highway Department of the State of Utah, shall conduct a study of proposed road alignments within and adjacent to the recreation area. Such study shall locate the specific route of a scenic, low-speed road, hereby authorized, from Glen Canyon City to Bullfrog Basin, crossing the Escalante River south of the point where the river has entered Lake Powell when the lake is at the three thousand seven hundred-foot level. In determining the route for this road, special care shall be taken to minimize any adverse environmental impact and said road is not required to meet ordinary secondary road standards as to grade, alignment, and curvature. Turnouts, overlooks, and scenic vistas may be included in the road plan. In no event shall said route cross the Escalante River north of Stephens Arch.

(b) The study shall include a reasonable timetable for the engineering, planning, and construction of the road authorized in section 8(a) and the Secretary of the Interior shall adhere to said timetable in every way feasible to him.

(c) The Secretary is authorized to construct and maintain markers and other interpretive devices consistent with highway safety standards.

(d) The study specified in section 8(a) hereof shall designate what additional roads are appropriate and necessary for full utilization of the area for the purposes of this Act and to connect with all roads of ingress to, and egress from the recreation area.

(e) The findings and conclusions of the Secretary and the Highway Department of the State of Utah, specified in section 8(a), shall be submitted to Congress within two years of the date of enactment of this Act, and shall include recommendations for any further legislation necessary to implement the findings and conclusions. It shall specify the funds necessary for appropriation in order to meet the timetable fixed in section 8(b).

Sec. 9. Within two years from the date of enactment of this Act, the Secretary shall report to the President, in accordance with subsections 3(c) and 3(d) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132 (c) and (d)), his recommendations as to the suitability or unsuitability of any area within the recreation area for preservation as wilderness, and any designation of any such area as wilderness shall be in accordance with said Wilderness Act.

Sec. 10. There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act, not to exceed, however, \$400,000 for the acquisition of lands and interests in lands and not to exceed \$37,325,400 for development. The sums authorized in

this section shall be available for acquisition and development undertaken subsequent to the approval of this Act.

Approved October 27, 1972.

Legislative History

House Report No. 92-1446 accompanying H R. 15716 (Committee on Interior and Insular Affairs).

Senate Report No. 92-156 (Committee on Interior and Insular Affairs).
Congressional Record:

Vol. 117 (1971) : June 21, considered and passed Senate.

Vol. 118 (1972) :

Oct. 13, considered and passed House, amended, in lieu of H R. 15716.

Oct. 14, Senate concurred in House amendment, with amendments; House concurred in Senate amendment.

Weekly Compilation of Presidential Documents: Vol. 8, No. 44 (1972):
Oct. 28, Presidential statement.

Sept. 2 NAVAJO INDIANS—LAND EXCHANGE P.L. 85-868

NAVAJO INDIANS—LAND EXCHANGE

For Legislative History of Act, see p. 5085

PUBLIC LAW 85-868; 72 STAT. 1686

[S. 3754]

An Act to provide for the exchange of lands between the United States and the Navajo Tribe, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That:

(a) The Secretary of the Interior shall, in consideration of and as just compensation for the transfer made by section 2 of this Act as well as for the use and occupancy of the lands therein described under terms of the right-of-way granted March 22, 1957, by the Secretary pursuant to the Act of February 5, 1948 (62 Stat. 17),⁹⁸ transfer to the Navajo Tribe so much of the block of public lands (exclusive of the minerals therein, but inclusive of all range improvements constructed thereon) described in subsection (c) of this section, as shall constitute a reasonably compact area equal in acreage to the lands transferred to the United States under section 2, and the lands so transferred shall constitute a part of the Navajo Reservation and shall be held by the United States in trust for the Navajo Tribe and shall be subject to all laws and regulations applicable to that reservation. The owners of range improvements of a permanent nature placed, under the authority of a permit from or agreement with the United States, on lands transferred pursuant to this section shall be compensated for the reasonable value of such improvements, as determined by the Secretary out of appropriations available for the construction of the Glen Canyon unit, Colorado River storage project. To the extent that the Secretary is unable to transfer, from the lands described in subsection (c), lands equal in acreage to the lands transferred to the United States under section 2, because of the existence of valid rights in other parties than the United States (other than the rights described in subsection (d) of this section), he shall transfer to the Navajo Tribe such other available public lands (exclusive of the minerals therein but inclusive of all range improvements thereon) in reasonable proximity to the Navajo Reservation and to the lands described in subsection (c) as the tribe, with the concurrence of the Secretary, may select and as may be necessary to transfer to the tribe equal acreage in exchange for the lands transferred under section 2, and those lands so transferred shall be treated in the same manner as other lands transferred pursuant to this section.

(b) Subject to valid, existing rights, in addition to other requirements under applicable laws and regulations, mineral activities affecting the land transferred pursuant to this section shall be subject to such regulations, which may include, among others, a requirement for the posting of bond or other undertaking, as the Secretary may prescribe for protection of the interests of the Indians. Patents

98. 25 U.S.C.A. §§ 323-328.

