LAKE MEREDITH RECREATION AREA
Texas

Statement for Management

January 1976

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

Appendix F

The Statement For Management is the first documentation in the National Park Service planning process. Every park in the National Park System must have an approved Statement, which is subject to annual review and revision. The Statement will be used to guide short- and long-term management of the park, and to determine the nature and extent of planning required to meet the park's management objectives. In the absence of more specific planning documents, the Statement will provide a general framework for directing park operations, and for communicating park objectives to the public.

STATEMENT FOR MANAGEMENT

Lake Meredith Recreation Area

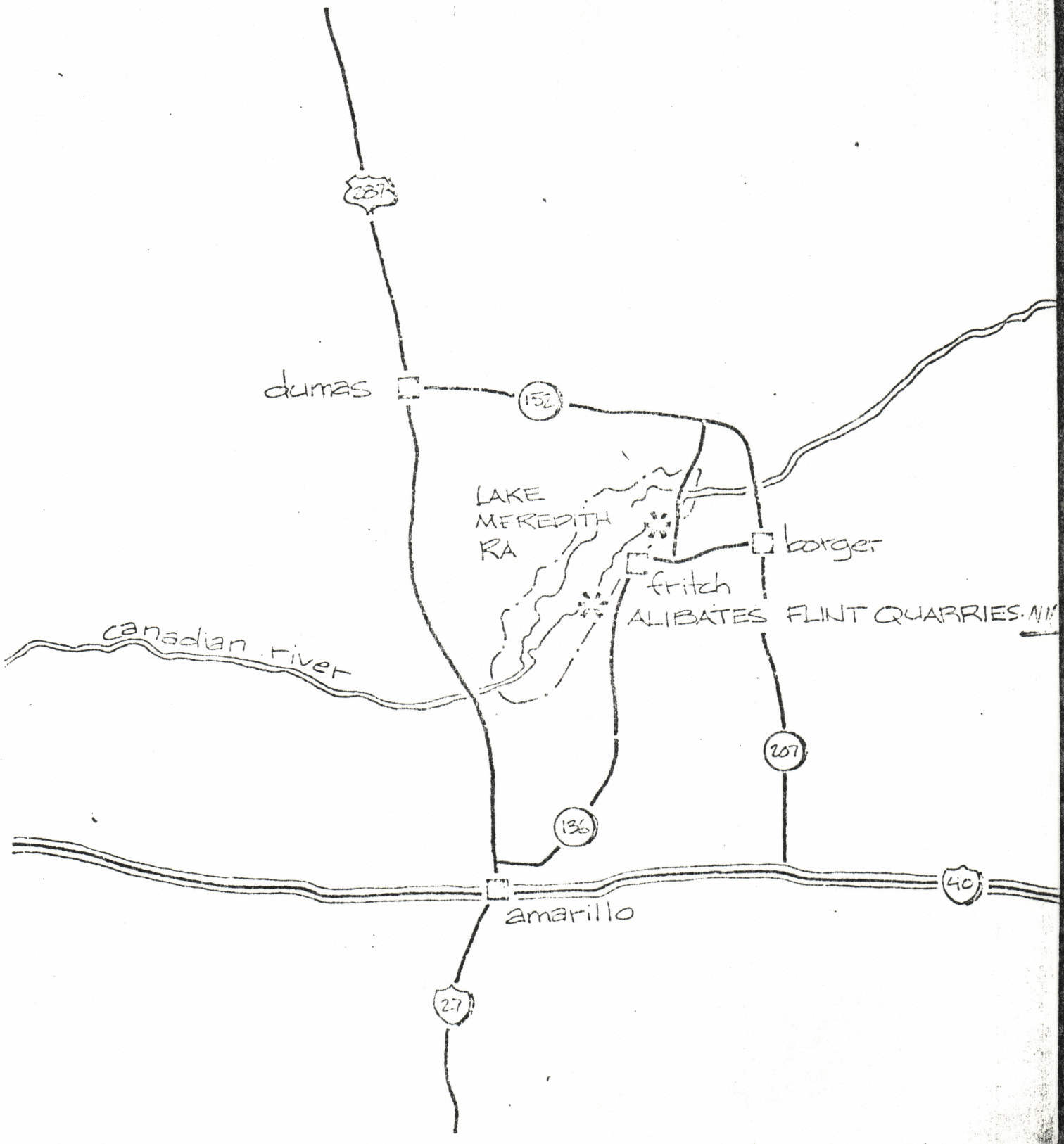
Prepared by: William E. Dyck — Superintendent — 1/19/1976 — Date

Recommended by: [signature] — Regional Director, Southwest Region — 1/23/76 — Date

WASO
Policy Review: /s/ John E. Cook — Associate Director — 3/4/76 — Date

Approved by: [signature] — Regional Director, Southwest Region — 6/29/76 — Date

LAKE MEREDITH RECREATION AREA VICINITY



STATEMENT FOR MANAGEMENT

Lake Meredith Recreation Area

I. PURPOSE OF THE PARK

The recreation area is administered to provide a variety of land- and water-based recreational activities.

The establishment legislation, Public Law 88-536, 78 Stat. 744, August 31, 1964, authorized the Secretary of the Interior to ". . . investigate, plan, construct, operate, and maintain, or otherwise provide for basic outdoor recreational facilities at Sanford Reservoir Area. . . ." The purpose of the recreation area is further stated in the National Park Service Organic Act of 1916, as ". . . to conserve the scenery and the natural . . . objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

II. SIGNIFICANCE OF THE PARK'S RESOURCES

Lake Meredith and Sanford Dam exist primarily to provide a municipal water supply for 11 cities in the Texas Panhandle. The project's public

domain, comprising 45,964.30 acres of land and water, and their recreational benefits, comprise the most significant resource of Lake Meredith Recreation Area.

This region also has a rich and significant archeological and historical background. Preliminary site-survey work indicates that there are several hundred archeological sites within the boundaries of the recreation area. The area was first used by Paleo-Indian hunters 12,000 years ago; almost every culture of the southern Great Plains from that time up until 1874 came into the area, hunting big game and quarrying flint for weapons and tools.

The history of the area is equally impressive: Spanish Conquistadors, Comancheros, and Spanish and Mexican military expeditions, followed by U.S. military operations, frequently crossed through.

The cattle industry and homesteading also represent a significant era in regional history. The McBride place is the oldest remaining ranch-house of that early period in Potter County.

III. LAND CLASSIFICATION

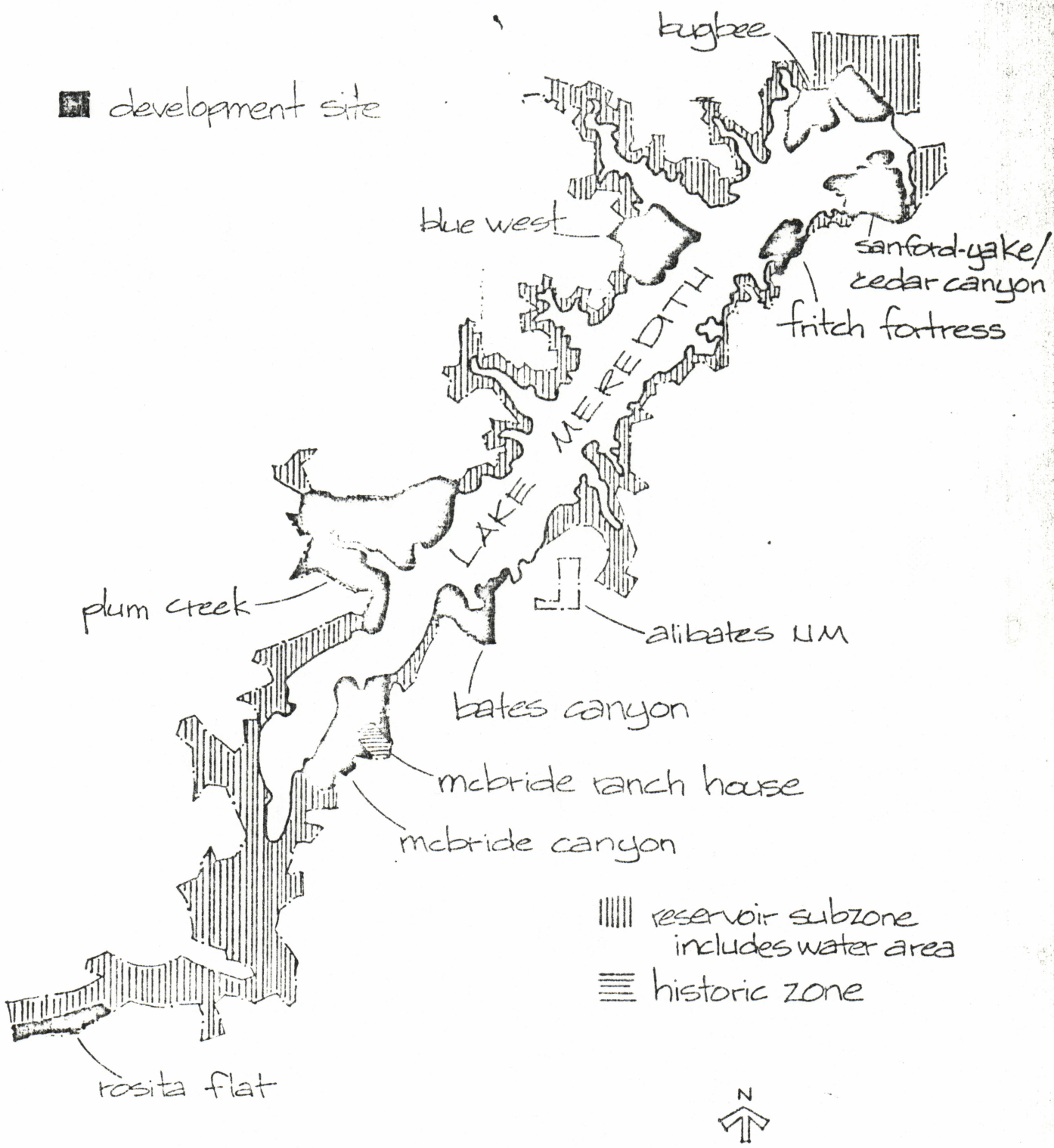
Almost all of Lake Meredith's 45,964 acres are classified as Special-Use-Zones/Reservoir Subzones, which means that they are managed for special

reservoir-recreation uses not normally permitted in natural or historic areas of the National Park Service. The reservoir subzones include major reservoirs and adjacent lands to the high-water mark where the National Park Service does not have exclusive management authority. Minor developments, such as launching ramps and beaches, are also included.

Several areas around the lake in the reservoir subzone have been developed for visitor-use facilities, while others have been designated for the future as demand indicates and funds become available.

The McBride Ranch House and site is classified as a historic zone, and is listed on the National Register of Historic Places. Additionally, all archeological sites are also classified and managed as historic zones pending formal evaluation and nomination to the National Register. Physical development in these historic zones shall be the minimum needed to preserve, protect, and interpret the historical values; and activities therein shall be limited to sight-seeing and the study of the historical features.

Lake Meredith Recreation Area land classification zones and subzones are delineated on the map included in this section.



LAND CLASSIFICATION

LAKE MEREDITH RECREATION AREA • TEXAS

IV. INFLUENCES UPON MANAGEMENT

A. Legislative and Administrative Constraints

All management and development decisions must comply with the enabling legislation (appended), and with the provisions of the Antiquities Act of 1906; the National Park Service Organic Act of 1916; the Historic Sites Act of 1935; the National Historic Preservation Act of 1966; the National Environmental Policy Act of 1969 (NEPA); Executive Order 11593 of May 13, 1971; and the Historical and Archeological Data Preservation Act of 1974. In addition, applicable guidance and procedures are provided by the most current management policies and activities standards of the National Park Service.

The establishment/authorization legislation, Public Law 88-536, 78 Stat. 744, August 31, 1964, authorizes the Secretary of the Interior to ". . . investigate, plan, construct, operate, and maintain, or otherwise provide for basic public outdoor recreation facilities at the Sanford Reservoir area, Canadian Federal reclamation project . . ." and provides for land acquisition, appropriations, public use, operation, maintenance, cooperative agreements with other agencies, and related matters.

In 1965, as part of the Canadian River Project, a dam was placed across the river, and Lake Meredith was created. Since then, the National Park Service has administered the recreational use of the lake area--first under the designation "Sanford Recreation Area," and beginning in October 1972 as "Lake Meredith Recreation Area."

The Canadian River Project and Lake Meredith Recreation Area both resulted from an act of December 29, 1950 (64 Stat. 1124). This congressional action authorized the construction of Sanford Dam, and associated works, by the Bureau of Reclamation, primarily to provide a municipal water supply for 11 cities in the Texas Panhandle. The project also served to benefit irrigation, flood control, silt control, and fish and wildlife habitat, and to provide recreation facilities.

The National Park Service became involved through a memorandum of understanding and agreement (Contract 14-06-500-579, appended), dated June 26, 1961, with the Bureau of Reclamation. This agreement authorized the Service to investigate, plan, and develop recreational resources for the Canadian River Project.

By a March 15, 1965, memorandum of agreement (Contract 14-06-500-1105, appended), between the Bureau of Reclamation and the National Park Service, the administration of the area for public recreational use became the responsibility of the Service. In July of 1968, the Bureau of Reclamation turned over the operation and maintenance of the dam and associated facilities to the Canadian River Municipal Water Authority (CRMWA). Thus, the present-day management of the reservoir and its facilities is a cooperative effort between the NPS and CRMWA. It is agreed that recreation use shall not interfere with the primary purpose of the project.

Livestock grazing was authorized in the appended memorandum of agreement between the Department of the Interior and the Bureau of Reclamation of March 15, 1965. Negotiation of grazing leases and their continued administration is the responsibility of the National Park Service.

Wildlife resources of the recreation area come under the joint authority of the Texas Parks and Wildlife Department and the

National Park Service, in accordance with a memorandum of agreement dated August 1, 1968 (appended).

All lands within the recreation area were acquired with outstanding oil and gas rights and other mineral leases retained by private interests. Access and road easements were allowed in the original purchase of most parcels of land, and numerous pipeline and powerline easements cross the area. (See Appendix.)

A resolution by the Canadian River Municipal Water Authority granted permission for the National Park Service to use not-to-exceed 350 acre-feet of water per annum from Lake Meredith for domestic and irrigation requirements in recreation and public-use development. (See Appendix.)

Law-enforcement jurisdiction at Lake Meredith is fragmented between three counties (Hutchison, Moore, and Potter), which exercise different jurisdictions within the recreation area. The National Park Service can exercise only proprietary jurisdiction, while having to depend upon good working relationships with the three local sheriffs' offices and the Texas Department of Public Safety.

B. Regional Influences

Lake Meredith is located 35 miles north of Amarillo, Texas, in the center of the Texas Panhandle. The population is not dense; within a 50-mile radius it exceeds 200,000, and is double this figure at 100 miles. Ranching and farming are the primary uses of lands surrounding the reservoir, with oil- and gas-industry activities liberally scattered throughout the area. The private ownership of land has not allowed much in the way of public recreation until the time of the purchase of the acreage for the water project.

The largest nearby recreation facility is Palo Duro Canyon State Park, a beautiful scenic and historic area about 50 miles to the south. But it is less than half the size of Lake Meredith Recreation Area, and its water resources are limited. Most of its heavy visitor use consists of stream wading, limited camping, picnicking, hiking, and trail riding.

Alibates National Monument, adjoining Lake Meredith Recreation Area on the east, was set aside to preserve flint quarries used

by prehistoric man for at least 12,000 years; and to preserve several adjacent archeological sites and features, particularly dwellings built by Plains Village farmers 600 to 800 years ago. Many of the flint quarries and other archeological features associated with the monument are actually located within the boundaries of Lake Meredith Recreation Area. Presently the 92 acres of the monument are administered by the Superintendent of Lake Meredith Recreation Area.

The recreation area is conveniently accessible by means of many high-standard highways, which radiate in all directions from nearby Amarillo, including Interstate 40 (U.S. 66), one of the Nation's most heavily used transcontinental east-west highways, and three other well-traveled U.S. routes.

Ranching and farming are major contributors to the regional economy. Perhaps the most conspicuous evidence of man's use of the land in the Texas Panhandle, however, is that generated by the oil and gas industry. Both inside and out of the recreation area--and in some cases even beneath the water--pipelines, wells, pumping facilities, and access-roads cross the landscape.

Impoundment of Lake Meredith was followed by extensive development of private recreation property adjacent to the boundary. This development is most advanced near the community of Fritch, and on the north side of the lake, at Bugbee. Unfortunately, local authorities have little power to control esthetic intrusions, and development has been almost completely unrestrained. The lack of proper regulations and construction standards for structures, roads, and utilities has produced a mixed community of mobile-home sites, permanent residences, and a wide range of vacation cottages.

C. Within-Park Influences

Lake Meredith's water is primarily intended to serve as a municipal water supply. Maintaining water purity is a paramount park-management consideration. The Canadian River Municipal Water Authority carefully monitors the water quality at many locations. So far, recreation use has been compatible with the primary purpose of the lake, and stringent controls have not been required.

Other conflicting uses may require eventual control. The waterskier and the fisherman co-exist, but not very peacefully. Sailing craft, speed-boats, and larger vessels that operate out of the marina do not mix very well with either skiers or fishermen, and restraints may eventually have to be exercised.

The park headquarters and superintendent's office are located in the nearby town of Fritch, Texas. Two ranger/naturalist information stations are located in the recreation area--one near the dam, and the other near the Cedar Canyon development site.

Lake Meredith Recreation Area contains land of limited general use. This general deficiency is compounded by the fractured dolomite formation in the caprock areas, and other geological hazards such as "filled chimneys" and hydration domes. The danger of landslides and flashfloods renders the few areas that lie near the water level questionable for any extensive development. And the steepness of the canyon walls, and their continuous sloughing as they become saturated by the advancing shoreline, make bank fishing difficult--even dangerous, at times.

Visitation has maintained a fairly steady upward trend over the past 9 years. In 1966, the first full year of recreation use, visits totaled 1,041,383; by 1975, they had climbed to 1,708,760 annually.

For the most part, the nature of recreation use has remained unchanged--the greatest concentration being generated by water-based activities, of course. Hunting, off-road vehicular sports, horseback riding, sightseeing, picnicking, and camping also attract people to the recreation area.

Except for minor fluctuations, the surface elevation of the lake has remained near 3,906 feet for the past 2 years. At this level, the two boat-ramps in the upper end of the lake are not usable, and boat launching is concentrated at the remaining deep-water ramps. This results in traffic congestions on land and water, which is sometimes complicated by dangerous storms that can blow up on the lake with little warning.

Activities related to the oil and gas industry are increasing in the recreation area, as was mentioned under "Regional Influences." These industrial uses cannot be terminated

under existing legislation, but the companies involved have been cooperative in holding down adverse effects. Even so, pipeline scars, access roads, drilling sites, and other installations leave their mark on the landscape. Although there is little direct bearing on recreational activities, industrial uses are visually intrusive, they can contribute to erosion, may disturb prehistoric remains, and present a potential threat through contamination of lake waters.

Past grazing practices have had a serious adverse impact on the vegetation and lands within the recreation area. Grazing is being better controlled than previously, however, as critical sections of the boundary are fenced. Livestock has been virtually eliminated from visitor-use areas, and the number of acres grazed has been reduced on several allotments. The grazing program now is carefully controlled and based on sound practices developed by Soil Conservation Service surveys and recommendations. There are encouraging signs that deterioration of land resources can be turned around, and it may be possible to restore a portion of the recreation area to native grassland.

Marina-based houseboats and sailing-craft serve as weekend retreats and social centers for many people. The existing marina's 300 slips are generally filled to capacity, and this facility (Sanford-Yake), located at the north end of the lake near the dam, is the only source of fuel and other supplies on the lake. The marina site also is a popular launching-ramp for trailered boats, which concentrates people, boats, and automobiles, and sometimes creates hazardous congestion in and out of the water. Future plans propose several additional marina and access development-areas.

A residential Youth Conservation Corps (YCC) camp, located in the Sanford-Yake area, houses 30 to 60 youth and their supervisors during the summer months. The YCC enrollees carry out beneficial work projects and participate in an environmental-education program. Overall, this energetic work-force is an advantage to the area, but considerable support is required from the park staff.

V. MANAGEMENT OBJECTIVES

1. To preserve and maintain the natural and cultural features of the recreation area.

2. To provide visitors with interesting, enjoyable, and enlightening experiences, so they gain environmental awareness and insight into the natural, cultural, and recreational features of the recreation area.

3. To encourage a continuing research program, which will provide management with guidance needed for accurate and informative interpretation of the natural and cultural aspects of the area in long- and short-term operation.

4. To provide the necessary physical development and maintenance of facilities needed for the proper operation of the area and for the best possible visitor experience in the enjoyment of the recreational, natural, and cultural features of the recreation area.

5. To promote a harmonious integration of activities both within and outside the recreation area, by maintaining close cooperation with the Canadian River Municipal Water Authority, other Federal agencies, and State and other local community-education organizations, in matters of mutually beneficial activities and services.

Public Law 88-536
88th Congress, H. R. 8135
August 31, 1964

An Act

78 STAT. 744.

To provide for the establishment and administration of public recreational facilities at the Sanford Reservoir area, Canadian River project, Texas, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is hereby authorized to investigate, plan, construct, operate and maintain, or otherwise provide for basic public outdoor recreation facilities at the Sanford Reservoir area, Canadian Federal reclamation project, to acquire or otherwise include within the project area such adjacent lands or interests therein as are necessary for present or future public recreation use, and to provide for the public use and enjoyment of project lands, facilities, and water areas in a manner coordinated with other project purposes: *Provided*, That this Act shall not provide the Secretary with a basis for allocation to recreation of water, reservoir capacity, or joint project costs of the Canadian River project nor affect the priority for municipal use of water stored in Sanford Reservoir, or the priority of use for municipal purposes of the capacity of said reservoir. The Secretary is authorized to enter into agreements with Federal agencies or State or local public bodies for the operation, maintenance, or additional development of project lands or facilities, or to dispose of project lands or facilities to Federal agencies or State or local public bodies by lease, transfer, conveyance or exchange upon such terms and conditions as will best promote the development and operation of such lands or facilities in the public interest for recreation purposes. The cost of providing basic recreation facilities shall be nonreimbursable. In carrying out the aforesaid activities the Secretary shall take cognizance of the effect of the fish and wildlife plan approved by the President December 19, 1962, pursuant to the Act of December 29, 1950 (64 Stat. 1124) in providing facilities at the Canadian River project which have general recreation utility.

Texas.
Sanford Reservoir area, recreational facilities.

Operation, maintenance, etc.; agreements.

43 USC 600b, 600c.

SEC. 2. There are authorized to be appropriated such amounts, but not more than $1,100,000, as may be necessary for the investigation, preparation of plans, construction and acquisition of lands authorized in this Act.

Appropriation.

Approved August 31, 1964.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 891 (Comm. on Interior & Insular Affairs).
SENATE REPORT No. 1461 (Comm. on Interior & Insular Affairs).
CONGRESSIONAL RECORD:
Vol. 109 (1963): Nov. 18, considered and passed House.
Vol. 110 (1964): Aug. 18, considered and passed Senate.

[CHAPTER 1183]

December 29, 1950
[H. R. 2733]
[Public Law 898]

AN ACT

To authorize the construction, operation, and maintenance by the Secretary of the Interior of the Canadian River reclamation project, Texas.

Canadian River reclamation project, Tex. Construction, etc., authority.

43 U. S. C. §§ 371-612; Sup. III, § 373a *et seq.*
Ante, pp. 11, 463.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the purposes of irrigating land, delivering water for industrial and municipal use, controlling floods, providing recreation and fish and wildlife benefits, and controlling and catching silt, the Secretary of the Interior, acting pursuant to the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), is authorized to construct, operate, and maintain the Canadian River reclamation project, Texas, described in the report of the Commissioner of Reclamation approved by the Secretary May 3, 1950, entitled "Plan for Development, Canadian River Project, Texas", Project Planning Report Number 5–12.22–1, at an estimated cost of $86,656,000, the impounding works whereof shall be located at a suitable site on the Canadian River in that area known as the Panhandle of Texas. In addition to the impounding works, the project shall include such main canals, pumping plants, distribution and drainage systems, and other works as are necessary to accomplish the purposes of this Act. The use by the project of waters arising in Ute and Pajarito Creeks, New Mexico, shall be only such use as does not conflict with use, present or potential, of such waters for beneficial consumptive purposes in New Mexico.

Nonreimbursable costs.

SEC. 2. (a) Notwithstanding any recommendations in the above-mentioned report to the contrary, only the costs of construction allocable to flood control and, upon approval by the President of a suitable plan thereof, to the preservation and propagation of fish and wildlife, and operation and maintenance costs allocable to the same purposes, shall be nonreimbursable.

Restrictions.

(b) Actual construction of the project herein authorized shall not be commenced, and no construction contract awarded therefor, until (1) the Congress shall have consented to the interstate compact between the States of New Mexico, Oklahoma, and Texas agreed upon by the Canadian River Compact Commission at Santa Fe, New Mexico, December 6, 1950, in conformity with Public Law 491, Eighty-first Congress, and (2) repayment of that portion of the actual cost of constructing the project which is allocated to municipal and industrial water supply and of interest on the unamortized balance thereof at a rate (which rate shall be certified by the Secretary of the Treasury) equal to the average rate paid by the United States on its long-term loans outstanding at the time the repayment contract is negotiated minus the amount of such net revenues as may be derived from temporary water supply contracts or from other sources prior to the close of the repayment period, shall have been assured by a contract satisfactory to the Secretary, with one central repayment contract organization, the term of which shall not exceed fifty years from the date of completion of the municipal and industrial water supply features of the project as determined by the Secretary.

Ante, p. 93.

Repayment contract.

(c) The repayment contract shall provide, among other things, (1) that the holder thereof shall have a first right, to which right the rights of the holders of any other type of contract shall be subordinate, to a stated share or quantity of the project's available water supply for use by its constituent industrial and municipal water users during the repayment period and a permanent right to such share or quantity thereafter subject to payment of such costs as may be incurred by the United States in its operation and maintenance of any part of the project works; (2) that, subject to such rules and regulations as the Secretary may prescribe, the care, operation, and maintenance of such portions of the pipeline and related facilities as are used solely for delivering such water to the contract holder and its constituent organizations shall, as soon as is practicable after completion of the municipal and industrial water supply features of the project, pass to the contract holder or to an organization which is designated by it for that purpose and which is satisfactory to the Secretary; and (3) that title to such portions of the pipeline and related facilities shall in like manner pass to the contract holder or its designee or designees upon payment to the United States of all obligations arising under this Act or incurred in connection with the project.

Appropriation authorized.

SEC. 3. There are hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be required to carry out the purposes of this Act.

Approved December 29, 1950.

Contract No. 14-06-500-572

UNITED STATES DEPARTMENT OF THE INTERIOR

MEMORANDUM OF UNDERSTANDING AND AGREEMENT
between the
BUREAU OF RECLAMATION AND THE NATIONAL PARK SERVICE
for the
INVESTIGATION, PLANNING, AND DEVELOPMENT OF RECREATIONAL RESOURCES
at
SANFORD DAM AND RESERVOIR
CANADIAN RIVER PROJECT, TEXAS

THIS MEMORANDUM OF UNDERSTANDING AND AGREEMENT is entered into this 26th day of June, 1961, between the BUREAU OF RECLAMATION, hereinafter referred to as the Bureau, represented by the Regional Director of Region 5, Amarillo, Texas, and the NATIONAL PARK SERVICE, hereinafter referred to as the Service, represented by the Regional Director of Region 3, Santa Fe, New Mexico, pursuant to agreement between the Bureau of Reclamation and the National Park Service, approved by the Under Secretary of the Interior on April 5, 1955, which governs the relations of the Service and the Bureau and the responsibilities of each in a cooperative program for the investigation, planning, development, and administration of recreational resources and facilities in the vicinity of Reclamation reservoirs.

WITNESSETH THAT:

WHEREAS, by Act of Congress approved December 29, 1950, the Secretary of the Interior was authorized to construct, operate, and maintain the Canadian River Project, Texas, under the Federal Reclamation laws, and

WHEREAS, the Canadian River Project includes the Sanford Dam and Reservoir, and involves investigation, planning, development, and administration of recreational resources and facilities at the Sanford Reservoir, and

WHEREAS, under a contract with the United States, the Canadian River Municipal Water Authority has agreed to operate and maintain without cost to the United States, the minimum basic recreational facilities to be provided at the Sanford Reservoir, and

WHEREAS, the Service, under agreements with the Bureau, has supplied preliminary plans and proposals for the development and administration of recreational facilities for Sanford Reservoir.

NOW, THEREFORE, the parties hereto agree with respect to the development of the recreational aspects of the Sanford Reservoir, as follows:

1. The Service will perform survey and studies and make a comprehensive overall master recreational development plan.

2. The Bureau will supply the Service with the field survey data and maps required by the Service for the preparation of the plans.

3. The Service will summarize its plans for recreational developments and facilities for the reservoir in a separate report to be made available to the Bureau by June 30, 1962.

4. The Bureau, subject to the availability of funds, will advance funds to the Service, as soon as available in Fiscal Year 1962, in the amount of $8,000 to cover expense for preparation of a plan for recreational facilities. Expenditures from funds advanced may be made for negotiations, investigations, development plans, and for other items necessary to carry out the provisions of this agreement: PROVIDED HOWEVER, That no such funds shall be expended to cover the costs of the normal, usual, and continuing functions and duties of the Service.

5. The Service will submit an itemized statement of expenditures at the end of each fiscal year, and will, upon completion of all of its work and full execution of its responsibilities under this agreement, refund to the Bureau any unexpended funds.

6. THIS MEMORANDUM OF UNDERSTANDING AND AGREEMENT shall be effective from the day first above written, and may be amended at any time by mutual consent of the Regional Directors.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed as of the date first hereinabove indicated.

BUREAU OF RECLAMATION

By (Sgd) Leon W. Hill
Regional Director

NATIONAL PARK SERVICE

By Jerome C. Miller
Acting Regional Director
Jerome C. Miller

(2-24-65) Contract No. 14-06-500-1105

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION
NATIONAL PARK SERVICE

MEMORANDUM OF AGREEMENT BETWEEN THE BUREAU OF RECLAMATION AND THE NATIONAL PARK SERVICE FOR ADMINISTRATION OF CERTAIN AREAS OF THE SANFORD RESERVOIR FOR PUBLIC RECREATIONAL USE - CANADIAN RIVER PROJECT, TEXAS

MEMORANDUM OF AGREEMENT, entered into this 15th day of March 1965, between the Bureau of Reclamation, Department of the Interior, herein called "Bureau," represented by the Regional Director, Region 5, Bureau of Reclamation, and the National Park Service, Department of the Interior, herein called "Service," represented by the Regional Director, Southwest Region, National Park Service.

EXPLANATORY STATEMENT

The Bureau is constructing Sanford Dam and Reservoir as a part of the Canadian River Reclamation Project, Texas, authorized by the Act of December 29, 1950 (64 Stat. 1124). The Secretary of the Interior has also been authorized to provide for basic public outdoor recreation facilities by the Act of August 31, 1964 (78 Stat. 744). This act specifically authorized the investigation, planning, construction, operation, and maintenance of recreation facilities as a project purpose on a nonreimbursable basis. The Service is preparing a master recreation plan for the reservoir area and will cooperate with the Bureau and other interested agencies in formulating a reservoir management plan. Such management plan will bring all uses into compatible relationship with the primary purposes for which the reservoir is being constructed. It is the desire of the parties that the Service assume primary responsibility for public recreational use of available land and water areas of the Canadian River Project. The Service will also function in accordance with authority granted to it under Public Law 633-79th Congress, Part (b), approved August 7, 1946 (60 Stat. 885).

AGREEMENT

The parties hereto agree that the following principles shall govern the administration, planning, development, and use of lands and facilities for recreational purposes at Sanford Reservoir.

(3-3-65)

1. The Service will prepare detailed plans for development and administration of public outdoor recreational use facilities and will establish policies, rules, and regulations relating to public outdoor recreational use and occupancy of lands and water areas available for such use. All general development plans and significant changes or revisions thereof will be forwarded for review by the Bureau to assure that said plans will not interfere with the primary purposes of the project. Bureau shall construct, or contract for the construction of, minimum basic recreational facilities authorized by the Act of December 29, 1950, and basic public outdoor recreation facilities authorized by the Act of August 31, 1964. Any additional authorized construction and development shall be performed by the Service.

2. For purposes of operation and management, the Sanford Reservoir area is divided into two segments as indicated on Exhibit A, attached hereto and by this reference made a part hereof. The two areas are: (1) land and water areas needed exclusively for construction, operation, and maintenance activities of the Bureau; and (2) land and water areas to be administered for public outdoor recreational use and for fish and wildlife purposes. Subject to leases which may be issued as proposed in Article 5 hereof and subject to outstanding oil and gas leases and the rights associated with those interests, Service will administer the land and water areas comprising the second group. The Service will provide such visitor services as may be desirable for the land and water areas it administers and will control and administer recreational use thereof by the public. In such administration, the Service will cooperate with other Federal and State agencies and will conform its management plans to those indicated for the remainder of the project area. Annual reports of public use for recreation will be furnished the Bureau.

3. All public outdoor recreational and fish and wildlife facilities and activities shall be planned and constructed so as not to interfere with any Bureau construction, reconstruction, operation and maintenance, rehabilitation, soil and moisture conservation, or any other responsibility of the Bureau. However, the Bureau will cooperate with the Service by coordinating its construction and operation of the Canadian River Project with recreational development and administration of the project area. No recreational use of Canadian River Project areas shall be permitted which is inconsistent with the laws of the State of Texas for the protection of fish and game and the protection of the public health, safety, and welfare. The Service, after consultation with the Texas Parks and Wildlife Department, may issue regulations designating zones where and establishing periods when no hunting, fishing, or trapping shall be permitted for reasons of public safety, administration, or public use and enjoyment.

4. In the event the Service should conclude that it is desirable to permit grazing on any of the project lands to be managed by it under the terms of this agreement, the Service after consultation with the Texas Parks and Wildlife Department, shall notify Bureau of its recommendation, including a designation of the land to be leased, and the term and consideration proposed. Upon approval of the plan by the Bureau, Service will negotiate the grazing leases and be responsible for continued administration of the leases. Under no circumstances shall any leases be considered which will interfere in any manner with management of the areas needed for operation and maintenance of the project under supervision of the Bureau.

5. In the event the Bureau proposes the issuance of oil and gas leases or other mineral leases on any of the lands in and adjacent to the Sanford Reservoir, the Bureau shall consult with the Service on such proposal to issue such leases or accept applications, and the Service shall submit its recommendations on such proposal based upon anticipated interference with recreation facilities and use. In the event the Service concludes that such interference would result, the Bureau shall withhold issuance of oil and gas leases. Land and interests in Lands for the Canadian River Project reservoir and the adjacent lands have been acquired subject to outstanding oil and gas leases and other mineral leases, with limited subordination in some cases. Activities proposed hereunder are subject to limitation by those outstanding rights.

6. Based on reports prepared annually by the Service, revenues received from fees and charges paid by the public for use of facilities in the reservoir area shall be disposed of in accordance with applicable law.

7. This agreement shall become effective upon execution by each of the parties hereto and shall remain in force as written unless the parties hereto do mutually agree to its modification or termination, or unless termination is directed by the Secretary of the Interior, or until enactment by the Congress of legislation terminating or superseding it. However, fulfillment of the undertakings expressed in this agreement is contingent upon the appropriation of funds for these purposes.

(2-24-65)

IN WITNESS WHEREOF, the parties have executed this memorandum of agreement as of the day and year first hereinabove written.

BUREAU OF RECLAMATION

By /S/ Leon W. Hill
Regional Director, Region 5

NATIONAL PARK SERVICE

By /S/ Daniel B. Beard
Regional Director
Southwest Region

CONCURRED:

BUREAU OF SPORT FISHERIES
AND WILDLIFE

By /S/ John C. Gatlin
Regional Director
Southwest Region

CANADIAN RIVER MUNICIPAL
WATER AUTHORITY

By /S/ George W. Finger
President

ATTEST:

/S/ Doris Alexander
Secretary

(SEAL)

(FST040865)

Contract No. 14-06-500-1116

UNITED STATES DEPARTMENT OF THE INTERIOR

MEMORANDUM OF UNDERSTANDING AND AGREEMENT
between the
BUREAU OF RECLAMATION AND THE NATIONAL PARK SERVICE
RELATING TO IMMEDIATE ASSUMPTION BY NATIONAL PARK
SERVICE OF THE ADMINISTRATION OF PUBLIC USE AREAS

CANADIAN RIVER PROJECT, TEXAS

THIS MEMORANDUM OF UNDERSTANDING AND AGREEMENT is entered into this 12th day of April, 1965, between the BUREAU OF RECLAMATION, hereinafter referred to as "Bureau", represented by the Regional Director, Amarillo, Texas, and the NATIONAL PARK SERVICE, hereinafter referred to as "Service", represented by the Regional Director, Southwest Region, Santa Fe, New Mexico, pursuant to the Act of Congress of June 30, 1932 (47 Stat. 382, 417; 31 U.S.C. 686), commonly known as the "Economy Act", and pursuant to the agreement by the Bureau and the Service approved by the Under Secretary of the Interior on April 5, 1955, governing the relation between the Bureau and the Service in cooperative programs for the investigation, planning, development, and administration of the recreation resources and facilities in the vicinity of Bureau of Reclamation reservoirs.

WITNESSETH THAT:

The Service is equipped and staffed to accomplish the administration of public use areas for recreational purposes at reservoirs constructed by the Bureau of Reclamation for multiple purposes; and

Service and Bureau have reached agreement concerning the administration, planning, development, and use of lands and facilities for recreational purposes at Sanford Reservoir under that certain Memorandum of Agreement entered into on March 15, 1965 (Contract No. 14-06-500-1105); Provided, however, said Memorandum of Agreement contemplates the undertaking, by Service of certain administrative functions upon appropriation by the Congress of funds therefor, and, inasmuch as certain recreational use facilities are already constructed at Sanford Reservoir it is necessary that certain maintenance functions for such areas be provided for immediately.

(FST040865)

NOW, THEREFORE, the parties hereto agree as follows:

1. Immediately upon execution of this Memorandum of Agreement, Bureau will advance to Service the sum of Fifteen Thousand ($15,000) Dollars. Such sum shall be utilized to provide for the administration and maintenance of public use areas on Sanford Reservoir through June 30, 1965. Such administration and maintenance by Service shall begin as soon as possible after execution of this agreement. In no event shall such sum be utilized for the costs of previously budgeted, normal, usual, and continuing functions and duties of the Service.

2. At the end of fiscal year 1965, Service shall submit an itemized statement of the cost of rendering such service through June 30, 1965, to Bureau, and as soon as possible after the end of the fiscal year, Service shall refund to Bureau any amount remaining unexpended, or the parties shall otherwise adjust payment by Bureau to actual cost of the services.

3. This Memorandum of Understanding and Agreement shall become effective upon execution by each of the parties and shall remain effective until completion of the adjustment of costs at the end of fiscal year 1965.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed as of the date first hereinabove written.

BUREAU OF RECLAMATION

BY /S/ Leon W. Hill
Regional Director, Region 5

NATIONAL PARK SERVICE

BY /S/ George W. Miller
Acting Regional Director, Southwest Region

OCT 15 1965

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
REGIONAL OFFICE - REGION 5
P. O. BOX 1609
AMARILLO, TEXAS 79105

IN REPLY
REFER TO: 5-420

OCT 14 1965

To: Regional Director, National Park Service, Southwest Region, Santa Fe, New Mexico

From: Regional Director

Subject: Operation and management of additional segments of land under Memorandum of Agreement dated March 15, 1965 (Contract No. 14-06-500-1105)--Canadian River Project, Texas

In accordance with verbal discussions, the Bureau of Reclamation hereby assigns to the National Park Service the responsibility for administration of public use of a segment of the land located in Area 1 at Lake Meredith as described in the March 15 Memorandum of Agreement and identified on Exhibit A. The segment of land assigned hereunder is identified on the enclosed plat. It shall be operated and managed by the National Park Service in the same manner as lands comprising Area 2 and shall be subject to all conditions and provisions of the March 15 memorandum applicable to lands administered by the National Park Service.

This transfer shall be effective upon approval of this letter by you. Please return one copy with your approval noted.

/s/ Leon W. Hill

In triplicate

Enclosure

Approved and accepted this

25 day of October 1965

/s/
Daniel B. Beard, Regional Director
National Park Service

CONCURRED:

/s/ George W. Finger
President, Canadian River Municipal Water Authority

cc:
Superintendent, Sanford Recreation Area, Sanford, Texas
(w/c enclosure)

(FST100465)

Contract No. 14-06-500-1198

UNITED STATES DEPARTMENT OF THE INTERIOR

MEMORANDUM OF UNDERSTANDING AND AGREEMENT

Between the

BUREAU OF RECLAMATION

and the

NATIONAL PARK SERVICE

For the Investigation, Planning, and Development of Recreational Resources and Facilities at Lake Meredith (Sanford Dam), Canadian River Project, Texas

THIS MEMORANDUM OF UNDERSTANDING AND AGREEMENT is entered into this 2 day of December, 1965, between the BUREAU OF RECLAMATION, hereinafter referred to as the Bureau, represented by the Regional Director, Region 5, Amarillo, Texas, and the NATIONAL PARK SERVICE, hereinafter referred to as the Service, represented by the Chief of Western Office, Design and Construction, San Francisco, California, pursuant to agreement between the Bureau of Reclamation and the National Park Service, approved by the Under Secretary of the Interior on April 5, 1955, which governs the relations of the Service and the Bureau and the responsibilities of each in a cooperative program for the investigation, planning, development, and administration of recreational resources and facilities in the vicinity of Reclamation reservoirs.

WITNESSETH THAT:

WHEREAS, by Act of Congress approved December 29, 1950, the Secretary of the Interior was authorized to construct, operate, and maintain the Canadian River Project, Texas, under the Federal Reclamation laws for purposes which include providing recreation and fish and wildlife benefits; and

WHEREAS, the Canadian River Project includes the Sanford Dam and Lake Meredith, and investigation, planning, development, and administration of recreational resources and facilities at Lake Meredith are necessary for performing project objectives; and

(FST100465)

WHEREAS, under a contract among the Bureau, the Canadian River Municipal Water Authority, and the Service, the Service has agreed to operate and maintain the recreational facilities to be provided at Lake Meredith; and

WHEREAS, the Service, under agreements with the Bureau, has supplied preliminary plans and proposals for the development and administration of recreational facilities for Lake Meredith; and

WHEREAS, Public Law 88-536 approved August 31, 1964, (78 Stat. 744) authorized an appropriation of not more than $1,100,000 to provide basic public outdoor recreational facilities, and the Service is equipped and qualified to conduct studies and investigations prerequisite to constructing desired facilities.

NOW, THEREFORE, the parties hereto agree with respect to the development of recreational facilities at Lake Meredith, as follows:

1. The Bureau will supply the Service with available field survey data and maps as requested by the Service.

2. The Service will:

a. Perform the necessary survey, and studies therefor, and prepare master recreational development plans for Lake Meredith.

b. Investigate domestic water sources for serving principal recreation areas. Prepare plans and cost estimates on recommended sources.

c. Investigate sewage disposal. Prepare plans and cost estimates on recommended plan.

d. Prepare preliminary recreation use layout for Fritch Fortress, Sanford-Yake overlook, parking expansion and picnic area, and Cedar Canyon marina access, parking, and ramp. Plans will include the suggested location of utility lines and will be available to the Bureau by November 1, 1965.

(FDT100465)

e. Provide plans and specifications for comfort stations, shelters, picnic tables, stoves, and garbage receptacles.

f. Negotiate with local utilities companies for electric, gas, and telephone services, including rates.

g. Provide consultant landscape architectural services during design and construction phases of projects.

3. The Service will submit its plans for recreational developments and facilities for Lake Meredith in a separate report to be delivered to the Bureau on completion, in no event, however, to be later than June 30, 1968.

4. The Bureau, subject to the availability of funds, will reimburse the Service for expenses incurred in accomplishing the obligations assumed in Articles 2 and 3 hereof. Expenditures may be made for negotiations, investigations, development plans, and for other items necessary to carry out the provisions of this agreement: PROVIDED, HOWEVER, That no such funds shall be expended to cover the costs of the normal, usual, and continuing functions and duties of the Service, and PROVIDED FURTHER, that in no event shall reimbursable expenditures incurred exceed $50,000.00. The Service will submit an itemized statement of reimbursable expenditures incurred periodically, but not more often than monthly.

5. THIS MEMORANDUM OF UNDERSTANDING AND AGREEMENT shall be effective as of the day of this agreement, and may be amended at any time by mutual consent of the agency representatives.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed as of the date first hereinabove indicated.

BUREAU OF RECLAMATION

By Sgd/ Leon W. Hill
Regional Director, Region 5
Amarillo, Texas

NATIONAL PARK SERVICE

By Howard Vint
Chief, Western Office
Design and Construction

MASTER

MEMORANDUM OF UNDERSTANDING
CONCERNING WILDLIFE RESOURCES IN
NATIONAL RECREATION AREAS

Texas Parks and Wildlife Department

State of Texas

National Park Service
Department of the Interior

This Memorandum of Understanding between the Texas Parks and Wildlife Department, represented by the Director, hereinafter called the Department; and the National Park Service, Department of the Interior, represented by the Director, hereinafter called the Service; and

WHEREAS, joint and cooperative endeavors between the Texas Parks and Wildlife Department and the Service will contribute substantially toward promoting and providing maximum recreation, hunting, and fishing benefits for the best interests of the people of Texas and of the United States, within Amistad Recreation Area, Padre Island National Seashore and Sanford Recreation Area.

NOW THEREFORE,

The National Park Service agrees:

1. To cooperate with the Department in the joint enforcement of Texas game and fish laws and the Texas Water Safety Act.

2. To practice those forms of resource management that will benefit wildlife as fully as practicable that are compatible with the recreational mission of the area.

3. To authorize no wildlife control work involving the use of poisons, other killing chemical agents or traps on lands and waters administered by the National Park Service until the designated employees of the Department have had an opportunity to review such programs.

4. To recognize the Texas Parks and Wildlife Commission as having the regulatory responsibility for the management of harvesting fish and wildlife by the public.

5. To make available to the Department such National Park Service facilities, equipment, and personnel as can be devoted to wildlife needs consistent and coordinated with other National Park Service requirements.

6. To provide the Department with reports and copies of all vital correspondence directly related to this memorandum.

7. To cooperate with the Department in the development or construction of wildlife habitat improvements within the limitations of funds available for such purposes.

8. To permit the erection and maintenance of structures needed to facilitate wildlife management activities on lands under the management of the Service, provided such structures conform in character and location with the requirements of the Service, and their intended use is not in conflict with policies of the area.

The Department agrees:

1. To notify the Service promptly of changes in the game, fur and fish laws or regulations.

2. To provide the Service with reports and copies of vital correspondence relating to this memorandum.

3. To make, stimulate interest in, or sanction no artificial plant of wildlife which may affect management of the recreation area until a joint investigation has been made and until mutual agreement is reached regarding its effect upon all other resources.

4. To make no use of poisons, other killing chemical agents, or traps for the control of fish and wildlife on the lands and waters administered by the Service without the approval of the Area Superintendent.

5. To erect no signs or structures and perform no construction or other acts not herein provided for without first securing the concurrence of the Superintendent.

6. To create no game preserves, refuges, or sanctuaries within the recreation area without approval of the Regional Director concerned.

7. To recognize the Service as the agency having regulatory authority for determining the proper use of the recreation area lands in the interest of coordination with other uses and values.

The Department and the National Park Service mutually agree:

1. To promote a united approach to the problems relating to wildlife and fisheries management and water safety by all interested parties.

2. To cooperate in the formulation and application of plans and programs to guide the management of wildlife upon lands under the National Park Service administrative policies for recreation areas.

3. To meet jointly at least once annually for discussion of matters relating to the management of fish and wildlife resources on or affecting the lands and waters administered by the National Park Service; and to provide for other meetings at various administrative levels for discussion of law enforcement, educational programs, cooperative studies, plans, wildlife surveys, hunting and fishing and trapping seasons and other such matters as are relevant to the fish and wildlife resource and its habitat.

4. To cooperate in publicity matters by encouraging their local employees to jointly publicize reports of mutual interest and avoiding publicity of a character embarrassing to the cooperating agencies.

5. To cooperate in the restoration and management of fish and wildlife resources in proper relation with the land and water management plans for the area.

6. To require as close cooperation as practicable of all Texas Parks and Wildlife Department and National Park Service personnel, including the prompt and complete interchange of information in all matters such as game counts, population trends, kill records, losses, studies, and all other desirable information required for the wise use and beneficial management of wildlife.

7. That each and every provision of this Memorandum of Understanding is subject to the laws of the State of Texas and the laws of the United States, and to the delegated authority in each instance.

8. Nothing in this agreement shall be construed as obligating either party hereto in the expenditure of funds or for the future payment of money in excess of appropriations authorized by law.

9. Nothing contained herein shall be construed as limiting or affecting in any way the proper authority of the Service in connection with the administration and protection of the lands under the administration of the National Park Service in accordance with the purpose for which the recreation area was acquired, reserved, or resulting from agreements with another Federal agency.

10. That no member of or delegate to Congress, or resident, commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may aries therefrom; but this provision shall not be construed to extend to this agreement if made for a corporation for its general benefit.

11. This agreement shall become effective when signed by the parties hereto and shall continue in force until terminated by mutual agreement or by either party upon thirty (30) days notice in writing to the other of his intention to do so. Amendments to this Memorandum of Understanding may be proposed by either party and shall become effective upon approval by both parties.

IN WITNESS WHEREOF, The parties hereto cause this Memorandum or Understanding to be executed as of the date when last signed below.

Texas Parks and Wildlife Department

Date July 16, 1968

By _____
Deputy Executive Director

National Park Service
U.S. Department of the Interior

Date AUG 1 1968

By _____
Assistant Director

CANADIAN RIVER MUNICIPAL WATER AUTHORITY

OFFICE OF SECRETARY
CITY HALL
BORGER, TEXAS

SEP 23 1965

September 22, 1965

DEC 1965
RETURNED
OFFICIAL FILES
NATIONAL PARK SERVICE
REGION SEVEN
DENVER

EXECUTIVE COMMITTEE
GEORGE W. FINGER, PRESIDENT
RAY RENNER, VICE PRESIDENT
DORIS ALEXANDER, SECRETARY

MEMBER CITIES AND DIRECTORS

AMARILLO, TEXAS
A. E. BANASIK
J. F. MADISON

BORGER, TEXAS
GEORGE W. FINGER
HUDSON DAVIS

PAMPA, TEXAS
FRED THOMPSON
CLINTON EVANS

PLAINVIEW, TEXAS
C. V. PAYNE
W. R. SNYDER

LUBBOCK, TEXAS
J. RAY DICKEY
IRVING L. JONES

CLAYTON, TEXAS
W. HOWARD HOFFMAN

TAHOKA, TEXAS
J. R. EDWARDS

O'DONNELL, TEXAS
IRVIN R. MOORE

LAMESA, TEXAS
JIM RICHARDSON
RAY RENNER

BROWNFIELD, TEXAS
J. E. BROWNFIELD
W. MULDROW

LEVELLAND, TEXAS
F. LEA
SPENCER ELLIS

Mr. Michael J. Becker, Superintendent
Canadian River Project Recreation
National Park Service
P. O. Box 325
Sanford, Texas

1-Land WDT 12/2
2-Gen WDT 12/2

Dear Mr. Becker:

In action taken by the Board of Directors, Canadian River Municipal Water Authority in regular session Monday, September 13, 1965, several resolutions with regard to the National Park Service were passed.

For your information and file, we are attaching herewith these resolutions:

1. Resolution granting permission for the National Park Service to use not to exceed 350 acre-feet of water per annum from Lake Meredith for domestic and irrigation requirements in recreation and public use development at Lake Meredith including requirement of the concessions proposed to be established in the area.

2. Resolution recommending emphasis on recreation facilities on that segment of project land known and identified as the Fritch Fortress.

3. Resolution whereby plans be prepared and an office be constructed to serve as headquarters for the Canadian River Municipal Water Authority near the dam without including facilities for administration of the National Park Service.

Yours truly,

Doris Alexander, Secretary

cc: C. O. Crane, Project Construction Engineer
Amarillo, Texas

L 52

(FST091565)

R E S O L U T I O N

A RESOLUTION by the Board of Directors of the Canadian River Municipal Water Authority for recommending emphasis on recreation facilities on that segment of project land known and identified as the Fritch Fortress.

WHEREAS, limited funds have been approved for use by the National Park Service in developing recreation and public use facilities at Lake Meredith; and

WHEREAS, a full discussion was had and a report submitted by officials of the National Park Service outlining their advance planning on recreation development in several areas; and

WHEREAS, after considering all recreation plans it is the opinion of this Board that the best interests of the public will be served by concentrating on development of the Fritch Fortress area to encourage major concession development at that point including the completion of facilities for serving a marina before 1966;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Canadian River Municipal Water Authority that the National Park Service be requested to concentrate on development of recreation facilities on the Fritch Fortress within the limit of available funds, the purpose being to provide sufficient basic facilities to permit early issuance of a prospectus covering private concessionaire features proposed for this area including the location of a marina before 1966.

The foregoing resolution having been read in full, A. F. Madison made a motion that same be passed. Upon such motion being seconded by Irvin L. Jones, the question was called for with the following result:

All directors present voted "AYE."

The President announced that the motion had carried, was passed, and had been duly adopted.

PASSED, ADOPTED AND MINUTES APPROVED this the 13th day of September, 1965.

George Finger, President
Board of Directors, Canadian River Municipal Water Authority

(SEAL)

ATTEST:

Secretary

ANNUAL

STATEMENT FOR INTERPRETATION

AND

VISITOR SERVICES

LAKE MEREDITH RECREATION AREA
PARK

Prepared By: Ruby K. Nielson s/ John W. Phillips — 4-24-80
Chief Interpreter — Date

Recommended By: [signature] — 29 April 1980
Acting Regional Chief, Interpretation and Visitor Services — Date

Concured By: [signature] — May 8, 1980
Superintendent — Date

Approved By: Acting [signature] — 5-29-80
Regional Director — Date

TABLE OF CONTENTS

PART I. BASIC INFORMATION FOR PROGRAM PLANNING

1. Bibliography of Basic Information Documents
2. Analysis of Current Management Concerns
3. Analysis of Park Users and Use Patterns
4. Analysis of "Special" Program Content and Considerations
5. Inventory of Facilities, Media and Sites with Base Managers
6. Analysis of Personnel and Funding Base
7. Summary of Interpretive and Visitor Services Program Constraints

PART II. INTERPRETIVE AND VISITOR SERVICES PROGRAM

1. Overview of Entire Program
2. Activities Display Chart

PART III. PROGRAM COST AND PRODUCTIVITY ANALYSIS

1. Projections Based on Planned Program and Optimum Level Attendance
2. Comparative Analysis Based on Actual Program Attendance

PART IV. APPENDIX MATERIALS

BIBLIOGRAPHY

OF

BASIC INFORMATION DOCUMENTS

FROM LIBRARY AND FILES --

1. CURRENT PLANNING DOCUMENTS FOR AREA

   a. Master Plan 1973 (Neither approved nor disapproved)

   b. Archeological Assessment 1974

   c. Recreation Planning Report 1965

   d. Resources Management Plan 1974

   e. Statement for Management 1976

   f. Management Objectives 1969

   g. Interim Interpretive Prospectus - Lake Meredith Recreation Area, Texas, 4th Draft, March 1977

2. CURRENT NATURAL HISTORY, HUMAN HISTORY AND RECREATIONAL INFORMATION RELEVANT TO AREA RESOURCES AND THEMES

   a. Allen, Durward L.

      1967 --- "The Life of the Prairies and Plains" McGraw-Hill

   b. Baker, Ele M. and Jewel A.

      1939 --- "Final Report Archeological Survey O. P. 665-66-3-404"

   c. Baker, Ele M. and Jewel A.

      1939 --- "Final Report WPA West Texas State Archeological Project 9249"

   d. Cooper, William A., Jr.

      1966-1971 --- "Water Quality and Limnology of Lake Meredith" West Texas State University (Annual Reports)

e. Duffield, Lathel Flay

1964 --- "Three Panhandle Aspect Sites at Sanford Reservoir, Hutchinson County, Texas"

f. Etchieson, Gerald Meeks

1979 --- "Archeological Testing at the South Ridge Site, Lake Meredith Recreation Area, Hutchinson County, Texas"

g. Evans, Glen L. and Grayson E. Meade

1944 --- "Quaternary of the Texas High Plains"

h. Frye, John C. and Byron Leonard

1959 --- "Correlation of the Ogallala Formation (Neocene) in Western Texas with Type Localities in Nebraska" Bureau of Economic Geology - University of Texas

i. Green, F. E.

1967 --- "Archeological Salvage in the Sanford Reservoir Area"

j. Kenner, Charles L.

1959 --- "A History of New Mexico - Plains Indian Relations" University of Oklahoma Press

k. Killebrew, Flavius C.

1979 --- "A Survey and Population Analysis of Mammals by Habitat at Lake Meredith Recreation Area and Alibates National Monument"

l. Kreiger, Alex D.

No Date- "The Southern Limits of Central Cultural Complexes"

m. Lowery, Ernest J.

1967 --- "The Archeology of the Antelope Creek Ruin"

n. Newcomb, W. W., Jr.

1961 --- "The Indians of Texas"

o. Panhandle Geological Society

1961 --- "Oil and Gas Fields of the Texas and Oklahoma Panhandles"

p. Patton, Leroy T.

1923 --- "The Geology of Potter County, Texas"

q. Phillips Petroleum Company

1963 --- "Pasture and Range Plants"

r. West Texas State University Geological Society

1965 --- "Guidebook - Palo Duro Field Trip"

s. Wright, Robert A. and Keith Meador

1979 --- "The Vegetation of the Lake Meredith Recreation Area, Texas"

t. Miscellaneous Recreation Informations

"Lake Meredith" Park Brochure - Reprint 1977

"Lake Meredith Recreation Area - Texas - Visit Planner - 1978

"Hunting - Lake Meredith Recreation Area - Texas" 1977

"Fishing in Lake Meredith" 1978

"A Birder's Checklist - Lake Meredith Recreation Area" 1976

ANALYSIS

of

CURRENT MANAGEMENT INFLUENCES AND CONCERNS

A. SPECIAL EMPHASIS/MANAGEMENT CONCERNS - 1979 FY

1. Lake Meredith Recreation Area experiences a problem associated with many recreation areas --- traditional forms of interpretation are poorly received by area visitors.

   We need to experiment and develop forms of interpretation that will work.

   In 1979, an effort was made by the Interpretive Specialist to experiment as a roving interpreter.

LONG RANGE CONCERNS - More than Current FY

1. Once the proper interpretive methods are identified, we need to obtain funding to hire seasonal interpreters to provide the necessary interpretation.

B. SAFETY CONCERNS

1. Visitor Concerns

   a. General - Lake Meredith is approximately 10 miles long, has about 90 miles of shoreline and is surrounded by the "breaks" of the Canadian River. The Canyon seems to funnel sudden and often violent winds. Annual visitation to Lake Meredith Recreation Area is approaching 2 million visits. A varied selection of recreation activities has been made available and all are pursued with enthusiasm and at times with recklessness.

      Combining high visitation with water oriented recreation, rugged terrain and varied climate, creates numerous accident potential situations.

   b. An average of 20 annual visitor injuries requiring ambulance service or hospitalization occur.

      Lake Meredith experiences 3.5 visitor fatalities a year, for a total of 50 from 1965 to 1979. Over 90% of the accidental visitor deaths have been water-oriented. The most commonly occurring contributing factors are:

      1. Life preservers not worn.
      2. Alcohol and boating.
      3. Wind or severe weather and vessel too small for wind conditions.
      4. Suddenly immersed in cold water.
      5. Swimming beyond ability.

6. Moving in boat, sitting on gunwales, etc., while underway, and other important factors.

2. Employee Safety Concerns

a. Interpretive employees are concerned with vehicle safety. All interpretive employees are required to hold a valid state operators permit, must pass a federal driving test and must attend the National Safety Council's Defensive Driving Course prior to operating NPS vehicles. Special instructions are given on procedures for driving on numerous dirt roads in the area.

b. All interpretive employees participate in flint chipping demonstrations and are shown the correct way to protect eyes and hands from the sharp edges of the flint.

c. Field duties are a usual part of the interpreter's duties and natural hazards including steep hillsides, rough and broken terrain, hot weather and sunshine, cold windy weather, poison ivy, rattlesnakes, etc., are encountered.

d. Some interpretive employees often participate in boating and other water related work and are instructed in water safety procedures.

e. One interpretive employee holds a full NPS enforcement commission and receives necessary law enforcement training.

f. Emergency Preparedness - Tornadoes are sometimes a threat, and instructions are given to seasonal employees about avoiding tornadoes by finding a low spot if one should approach. Severe weather evacuation plans exist for all buildings.

C. RESOURCE MANAGEMENT CONCERNS

1. Visitor Caused

a. Visitor Concentration - The receding lake levels over the past five years have tended to concentrate visitors in the areas nearest the dam. (Spring Canyon, Sanford-Yake, Cedar Canyon, Bugbee). This has caused severe impact to the resources in these areas.

b. Off-Road Vehicle Use - Off road vehicle use is permitted in two areas, Rosita and the creek bed of Blue Creek. The Rosita area is within 20 miles of Amarillo, so it is heavily used. The off-road use had created deep, probably permanent erosion scars.

c. Depletion of Flint and Petrified Wood - Regulations state that it is permissible to collect small quantities of rock (flint) for personal use. This is a problem since Alibates flint occurs in the recreation area and is highly desired by rockhounds. Flint is a non-renewable resource which must be protected to the extent of

present regulations.

d. Decimation of Wildlife - Hunting and trapping of both game and "varmint" species is permitted in some portions of the recreation area. Research is needed to determine the impact, especially on the slower reproducing large animals. Hunting will probably need to be more strictly controlled or eliminated for some animals.

e. Related to this is firearm use - which is year round for "Plinking" and target shooting. This is a problem, because so few target shooters are willing to clean up the areas they use, and their targets, including broken bottles, beer cans, clay pigeons, and general trash remain to litter the environment. In addition to target shooting, another problem even more severe is the shooting of government property or occasionally other individuals' cars, etc.

f. Archeological Attrition - Due to the number of visitors using the area, the over 300 sites of archeological importance, have been heavily impacted. Pothunters have dug in many sites. The attrition is not wholly visitor caused as sites have been destroyed by natural erosion and the lake, along with the gas and oil well activities. Every effort should be made to protect all these sites and those in the most danger should be excavated as soon as possible to prevent further loss of data.

g. Boating, Fishing and Water Quality - These must be considered together, since the management of one affects the condition of the other. The amount of pollution from an individual boat on the waters of the lake is insignificant, but from thousands which use the lake in the course of a year, this increases in proportion to the amount of use. The lake water is used as a city water supply for eleven cities in the Texas Panhandle, including Lubbock and Amarillo, so any pollution must be cleaned up before the water is consumed in the cities. Fishing also affects the water quality, since unwanted fish are thrown up on the bank to decay, and this refuse will eventually wash back into the lake to add to the pollution problem. Water quality is also affected by the non-visitor impact of neighboring real estate developments.

2. Visitor Related

a. Effects of Grazing - Three grazing permits are issued to nearby ranchers who graze hundreds of cattle on recreation area lands during winter through April. Due to lack of adequate boundary fence, trespass grazing is a problem in some areas. The cattle cause trails which lead to erosion and cattle grazing alters plant species composition and affects plant vigor and range trend.

This activity has a limited affect on visitor activities in some areas.

b. Oil and Gas Leases - We have approximately 150 gas wells, 22 oil wells and 100+ miles of pipeline in the recreation area. The

activities associated with these facilities often damage the resources of the recreation area. The oil and gas companies are also carrying on exploration and recovery activities in the area which necessitate the addition of new units and facilities. New mineral management guidelines have just come into effect which will make our present management of these units obsolete. The oil and gas company activities create random rut roads which are often used and enlarged by park visitors to the detriment of the area. Oil and gas activities do somewhat limit what the park visitor can do in some areas.

3. Other

a. Exotic Plants - In the river bottom, salt cedar has taken over to such an extent that many areas are impassable to foot or vehicle traffic. These trees are also water hogs, and where they grow, other native species have been crowded out. A similar problem, though less severe, occurs in disturbed areas and along the road sides, and this is the Russian Thistle, or tumbleweed. If the area is left to itself, the tumbleweeds will be crowded out by native species, in time. In some cases, control measures may be necessary.

D. MAINTENANCE CONCERNS

1. Interpretive Sites and Facilities - Interpretive sites and facilities in the recreation area are few in number. One area of concern has developed over the past few years concerning the role of NPS maintenance at the Lake Meredith Aquarium and Wildlife Museum. This facility was a joint effort between the City of Fritch and NPS. The facility now requires considerable maintenance and clarification is required on who does what. If NPS is to provide maintenance, additional manpower and funds will be necessary.

2. Other Areas in the Park -

a. General - The recreation area is large, and such activities as trash pickup and chemical toilets require a considerable amount of driving to accomplish the job.

b. Roads and Trails -

1. Road Grading - Many of the roads throughout the recreation area are unsurfaced dirt, and must be graded on a regular basis. One man is assigned full time to road grading and another man part time to keep them from becoming rough or washing away.

2. Paved Roads - A few roads in the area are paved, and must be sealed every 5 years, due to normal deterioration. Roadside litter pickup, along with shoreline clean-up, is a huge recurring problem. Assistance from YACC work crews has helped alleviate this and some other maintenance concerns.

3. Parking Areas - Each boat launching area has a parking area associated with it. These must be maintained on about the same schedule as the paved roads.

4. Trails - A few trails are provided to give visitors access to some areas. These are usually on steep slopes, and often need major maintenance, ie. erosion control.

5. Boat Launching Facilities - Boat launching ramps and courtesy docks are provided at major points around the lake for visitor convenience. These need constant attention as the lake level fluctuates, to keep them open and free from silt. During periods of icy weather, these are frequently closed.

6. Navigational Aids - Hazards to navigation are charted and aids placed at critical locations, and then maintained, in order to enhance boating safety.

7. Keeping NPS boats and vehicles maintained and in good working order is a concern.

c. Buildings and Utilities - There is probably no greater concern in maintenance or any other operation at LAMR than the overall lack of office, work and storage space. Many of the buildings we are utilizing now are sub-standard and unattractive. Some plans, including proposals to construct a new maintenance facility and to occupy surplus YACC structures, if realized, will alleviate this problem.

1. Building Maintenance - Ranger Station, Headquarters, Museum, Alibates, Ramps.

   a. Cleaning - except for park headquarters in Fritch, which is under contract cleaning, the maintenance division is responsible for building, cleaning and maintenance.

   b. Restrooms - the maintenance division is responsible for cleaning and servicing chemical toilets at locations around the lake. This requires checking the facilities regularly, and pumping waste materials as needed.

   c. Trash Pickup - this is the most time consuming job that maintenance has to do. Due to lack of help, and mileage restrictions, much usually remains to do in this area.

   d. Repair - minor and major repairs are regularly performed to buildings. Emergency repairs are also performed as needed.

2. Utilities

   a. Water Transmission Lines and Building Plumbing - Water transmission lines around the lake are of four kinds -

muncipal, petroleum company, park service and Canadian River Muncipal Water Authority lines, to various points in the Texas Panhandle. Water is bought from the city of Fritch for the park headquarters building and Fritch Fortress. Phillips Petroleum water lines furnish water for the Sanford-Yake area and the Ranger Station/Maintenance Yard. National Park Service lines carry Phillips Petroleum Company water to our own distribution system.

b. Electricity - Electricity is furnished by the Southwestern Public Service Company and Rita Blanca Co-op. All electrical repairs are done by maintenance.

c. Telephone Service - Continental Telephone Company of Texas provides both connections and maintenance of all facilities.

d. Natural Gas - Pioneer Natural Gas Company provides gas for all buildings needing gas connections. Appliances are serviced by the NPS maintenance division as needed.

e. Cooperation from other divisions is received on such items as litter pickup, inspection of facilities, notification of maintenance needs, etc.

E. PROTECTION AND LAW ENFORCEMENT

1. What Should Visitors Be Aware Of?

a. Types and Kinds of Law Enforcement Activity Involving Area Visitors.

1.	Motor Vehicle and Boat Accidents	20+ Annually
2.	Class I Offenses (Mostly Larceny/Theft)	20± Annually
3.	Class II Offenses	75± Annually
4.	Arrests	15± Annually
5.	Magistrate Tickets	125± Annually
6.	Courtesy Tags	200± Annually

b. Specific Resource Related Violations of Concern to Visitors.

1. Off-Road Use - Many off-road vehicles frequent the Lake Meredith area, and especially during hunting season, and the temptation is great to drive off the established roadways and create new trails. This necessitates the signing of areas so used, and the repair of road scars already present. In addition to these off-road users, the oil and gas field employees are constantly driving on the graded roads, and if they want to make a new road, they occasionally do so without consulting the National Park Service. This concern exists, despite the presence of two approved ORV areas at Lake Meredith.

2. Hunting - Large portions of the recreation area are open to

hunting and trapping in conjunction with rules and regulations of the State of Texas. Many regulations are violated, including bag and possession limits, seasons, licensing requirements, hunting in restricted areas, etc. The National Park Service has developed a hunting map and handout. There are no endangered species here.

3. Vandalism - Especially during hunting season, chemical toilets and trash cans, as well as signs, are often shot or otherwise damaged, purposely, by park visitors. Violators are seldom caught, and replacement is often necessary.

4. Pot Hunting - Lake Meredith Recreation Area abounds with Indian sites and these range in age from Paleo-sites, over 11,000 years old, to Comanche sites just over 100 years of age. Many of these are merely campsites, but around 15% of the 300+ sites around the lake have structures associated with them. Pot hunting and arrowhead hunting in these sites is almost an area tradition, and is difficult, at best, to control. Extensive vandalism (read digging) has occurred during the last year, and the amount of surface hunting is unknown and unlimited.

5. Rock Hunting - A small amount of rock can be gathered by hand, and, as a result, this is a lesser problem than pot hunting. Still, many areas are extensively used by rockhounds, and the "one handful" regulations is commonly ignored.

6. Fishing - The fishery resource is primarily managed by the Texas Parks and Wildlife Department. Many fishing related violations occur but the National Park Service's role is basically to act in a "notification" capacity.

7. Water Quality - Water quality is monitored by the state to ensure both safe drinking water for the panhandle residents, and safe recreation for recreation users.

c. Specific Visitor Related Enforcement Concerns

1. Traffic Control Devices - At dangerous points on the park roads, traffic control devices have been installed to prevent collisions and to aid traffic flow.

2. Swimming Beach Supervision - One area of high visitor concentration is the Spring Canyon Swimming Beach. Lifeguards are on duty during the summer months, and regular patrols are made by protection personnel to ensure compliance with the rules. The rule most often broken is the consumption of alcoholic beverages in the area. It is felt that the closing of the area to consumption of alcohol has reduced the number of lifeguard assists, and the number of confrontations between drinkers and swimmers.

3. Boating Regulations - The National Park Service, State of Texas and Coast Guard regulations are enforced on the lake for the protection of the visitor. It is felt that the greatest potential for accidental death to a park visitor is on the water, and enforcement of these regulations is one way to cut down on the number of accidental deaths at Lake Meredith.

4. Picnic Areas - Picnic areas, and other visitor use sites, are closed to hunting to keep the casual visitor and the hunter apart. It is felt that this keeps down the number of hunting accidents around the area.

5. Off-Road Use - Four-wheel drive vehicles, dune buggies, and motorcycles are allowed free use of the creek bottom in Blue Creek and Rosita Areas. This is a particularly dangerous sport, and more regulations would prevent accidents and deaths in these areas.

6. Visitors - Visitors are often their own worst enemy in a recreation area. Injuries, theft, intoxication, disorderly conduct and assault are but a few examples of visitor related enforcement incidents that can occur. A more intensive interpretive effort might prevent some of these incidents.

F. RECREATIONAL ACTIVITIES AND CONCERNS

A full range of recreation pursuits is available to the LAMR visitor, including but not limited to:

Boating, water skiing, fishing, sailing, swimming, SCUBA diving, hunting, camping, picnicking, hiking, backpacking, trapping, hang-gliding, horseback riding, ORV use, sightseeing, and a variety of spectator sports and special events.

The only special regulation, outside of Parts 2, 3, and 4 of 36 CFR, relate to ORV use.

At the present time, on some Sunday afternoons, the Spring Canyon guarded beach is saturated with swimmers and potential users must be turned back. In the future, it may be necessary to limit, zone or disperse hunting use, ORV use at Rosita, and boating use (especially fishermen vs water skiers).

G. RESEARCH ACTIVITIES AND CONCERNS

1. Research Pertaining to Lake Meredith Recreation Area - (See Bibliography)

2. Research Completed This Year -

   a. A Survey and Population Analysis of Mammals by Habitat at Lake Meredith Recreation Area and Alibates National Monument, by

Flavius C. Killebrew, PHD. This report is a complete and rather exhaustive study of the small mammal ecology of our area.

b. The Vegetation of the Lake Meredith Recreation Area, Texas, by Robert A. Wright and Keith Meador. This report shows plant zones around the lake by habitat, and provides a good list of the more common species of plants in our area.

3. Research Currently Underway -

a. National Uranium Resource Evaluation of the Amarillo Area - Dr. William McGowan. This project is two-thirds complete. It will culminate in recommendations for storage of radioactive wastes in the Texas Panhandle.

b. Sedimentation Survey of Lake Meredith Area - Dr. Thomas C. Gustavson. This project is being studied in conjunction with the one under way by Dr. McGowan. It will determine the rate of erosion on the surrounding area, and the rate of sedimentation into Lake Meredith.

4. Research Needed -

a. Use of Fire as a Management Tool.

b. Extent, Impact and Management of Oil and Gas Resources.

c. Complete the Basic Inventory of Natural Resources.

d. Faunal Factors, including Decimation of Wildlife.

e. Water Resources Analysis.

f. Ecosystem Analysis.

g. Adverse Effects of Chemical Pollutants from Adjacent Lands.

h. Protection of Harbor Facilities from Wave Action.

i. Archeological Survey and Mapping.

The above research needs, with the exception of oil and gas concerns, are fully outlined in the Resource Management Plan.

H. CONCESSION AND OTHER PUBLIC FACILITIES AND SERVICES

1. Facilities and Services Available Within the Area -

a. Concessions - The only major year round concessioner at Lake Meredith is the Fortress Cove Marina, which provides docking facilities for pleasure craft, recreation and games on a limited scale, and limited food, groceries, fishing and boating supplies. There is also a "Goody Truck" which operates at the Spring Canyon

Swimming Area and provides a limited food and beverage selection for swimmers.

b. Public Facilities -

Spring Canyon - (Sanford Dam) picnic and overnight campsites, supervised swim beach (June - August), chemical toilets, parking, no drinking water.

Sanford-Yake - Marina, launch ramp, picnic and campsites, flush toilets, drinking water, trailer dump station, parking, Sanford-Yake Information Station (intermittent June-August).

Cedar Canyon - Launch ramp, picnic and campsites, restrooms, drinking water, parking, trailer dump station.

Fritch Fortress - Launch ramp, picnic and campsites, restrooms, drinking water, parking, trailer dump station.

Bates Canyon - Launch ramp (out of service due to low lake level), parking, primitive camping and picnic sites, chemical toilets, interim trailer dump station, no drinking water, Bates Canyon Information Station (June - August).

McBride Canyon & Mullinaw Creek - Semi-developed camping and picnic sites, chemical toilets, no drinking water.

Rosita - Semi-developed camping and picnic sites, chemical toilets, ORV area, no drinking water, interim trailer dump station.

Plum Creek - Semi-developed camping and picnic sites, chemical toilets, no drinking water, interim trailer dump station, launch ramp (out of service due to low lake level).

Blue West - Picnic and campsites, launch ramp, chemical toilets, no drinking water.

Blue Creek Bridge - Semi-developed picnic and campsites, chemical toilets, no drinking water, ORV area.

Bugbee - Primitive picnic and campsites, chemical toilets, no drinking water.

Harbor Bay - Primitive picnic and campsites, chemical toilets, no drinking water, launch ramp (out of service due to low lake level), interim trailer dump station.

District Ranger Station - (near south end of Sanford Dam), information intermittent year around.

Roving protection and interpretive services are provided at the above sites.

2. Facilities and Services Available Adjacent to the Area

a. Park Headquarters - The park offices are located in Fritch, TX. There are restrooms and information facilities at this point.

b. Lake Meredith Aquarium and Wildlife Museum - Aquariums containing area fish species, wildlife dioramas, other exhibits and information available, area information.

c. Motels, Hotels and Restaurants - are located in nearby towns and along some approach roads.

I. SERVICEWIDE GOALS, PRIORITIES AND SPECIAL THRUSTS

The most important thrust during 1980 FY, along with safety messages, will be energy conservation.

ANALYSIS OF

PARK USERS AND USE PATTERNS

A. VISITATION ANALYSIS BY SELECTED CATEGORIES OF USERS

1. Breakdown by Age.

   a. Children 0 to 12 years ---------- 20%

   b. Teenagers 13 to 17 years ---------- 25%

   c. Adults 18 to 61 years ---------- 40%

   d. Senior Citizens 62+(Golden Age Passport Age) --- 15%

2. Breakdown by Group Affiliation

   a. Alone (Non-associated individuals) ---------- <04%

   b. Peer Groups (Visitors of Approximately the Same- Age) 20%

   c. Organized Tours (Persons Traveling Together for an Experience-ie.Schoolgroups,) >01%

   d. Nuclear Family (Two Parents and their Children)- 30%

   e. Extended Family (Nuclear Family + others related by blood) 20%

   f. Multiple Family (More than One Nuclear Family - Not Necessarily related by blood) 15%

   g. Partial Family (Families with one parent absent) 10%

   h. Other (Unknown Composition) 00%

3. Breakdown by Special Population Membership

   a. Handicapped, Physical Sensory, Mental ---------- 01%

   b. Non-English Speaking ---------- 01%

   c. Minority ---------- 05%

B. VISITATION ANALYSIS BY ORIGIN - DESTINATION PATTERN

1. Breakdown by Point of Origin

   a. Local Residents (Visitors who live in the immediate vicinity of the park) 20%

   b. Regional (Visitors who reside within a 2-3 hour- drive) 78%

c. National (U. S. Citizens residing outside the Local or Regional Area) - <01%

d. International (Visitors from other Countries) - >01%

2. Breakdown by Destination/Duration of Stay

a. Homebased Day Users ---------- 82%
(Visitors who left their home that day, visited the park, and returned home the same day)

b. Through Visitors ---------- 06%
(Visitors on an extended trip who pass through the park as one stop on their itinerary, and spend a portion of a day or a single night-50% day and 50% overnight use)

c. Extended Users ---------- 12%
(Visitors in the park as a main or only destination and who remain two or more nights)

C. VISITATION ANALYSIS BY SITE AND ACTIVITY SELECTION

1. Breakdown by Area and Facilities Used

a. Incidental to Park's Primary Resource ---------- 90%
(ie. desire a high degree of developed facilities. Seek modern designed environment with wide selection of facilities for comfort and convenience. Require safe, secure, gregarious environment).

b. Based on Park's Primary Resource ---------- 09%
(ie. desire moderate degree of developed facilities. Prefer basic natural environment).

c. Dependent on Park's Primary Resource ---------- 01%
(ie. desire no human developed facilities. Prefer unaltered natural environment. Human developed facilities unimportant).

2. Breakdown by Interpretation and Visitor Service Program Use

a. Use Information, Orientation and/or Non-Personal Services Only ------ 04%

b. Attend Personally Conducted or Presented Activities ------ 01%

c. Non-Program Users ---------- 95%

D. AREA'S USE PATTERNS

1. Total Park Visitation - Annual and Monthly - 1979

January, 1979	36,627	July, 1979	294,727
February, 1979	72,811	August, 1979	184,176
March, 1979	133,288	September, 1979	139,027
April, 1979	175,648	October, 1979	82,684
May, 1979	228,099	November, 1979	78,827
June, 1979	358,874	December, 1979	64,637

Annual Total for 1979 ---------- 1,849,425

2. Seasonal Use Variations

Summer - 837,777 - 45%

These figures show a seasonal variation dependent on weather. In the winter, cold temperatures keep all but the hardiest visitors at home.

Fall - 300,538 - 16%

As it starts to warm up, in March and April, visitor use jumps to nearly double previous months totals.

Winter - 174,075 - 09%

May, June and July are our highest months, with the hot temperatures of August and September slowing visits down. Thus, the visitation in April is nearly equal to that of August.

Spring - 537,035 - 29%

A pronounced week-end visitation occurs on good weather week-ends during March, April and May.

ANALYSIS OF

"SPECIAL " PROGRAM CONTENT AND CONSIDERATIONS

A. ENVIRONMENTAL

1. Oil and Gas Companies - Numerous oil, gas and pipeline companies have operations within Lake Meredith Recreation Area. Future interpretive programs will contain information on subsurface geology, manner of oil and gas production and extraction and history of the gas and oil industry within the Texas Panhandle.

2. Cattle Ranching - The recreation area is surrounded by large cattle ranches and project lands, at one time, were part of the ranches. Future interpretive programs will contain messages on the early cattle ranches.

   The historic McBride House will be part of this message.

B. SPECIAL PROGRAMS UNIQUE TO THIS AREA

1. YCC Program - The Lake Meredith Area has an active YCC program, which has two programs in which the interpretive division is concerned. Environmental Education is a part of the curriculum for the participants, and interpretive aid could be used in formulating or carrying out the environmental part of the program.

   The YCC program also conducts an archeological dig each summer, in conjunction with West Texas State University. This program has proven very helpful in the past, both in recovering sites which are about to disappear, and in furnishing new data for interpretive programs.

2. Lake Meredith Aquatic and Wildlife Museum - The bicentennial program provided funds for the construction of an Aquarium and associated exhibits on the fish and wildlife around Lake Meredith. The Aquariums and exhibits are the property of the National Park Service, but the building is kept open by the City of Fritch, and the Fritch Chamber of Commerce. During the summer months, an interpreter, on roving assignment, spends parts of the week-end on duty in the museum, helping the museum hostesses, and interpreting Lake Meredith for the public.

INVENTORY OF INTERPRETATION AND VISITOR SERVICES

FACILITIES, MEDIA AND SITES

WITH BASE MAP SHOWING LOCATIONS

A. STRUCTURES, FACILITIES AND MEDIA

1. Visitor Centers - None.

2. Information Stations - Two.

   [1] Lake Meredith Recreation Area Headquarters Information Station, Fritch, Texas. Open and manned week-days 8:30 AM to 5:00 PM year round.

   Contains: Information, maps, handouts, displays.

   [2] Lake Meredith Recreation Area District Ranger Station. Located near the south end of Sanford Dam. Open and manned year around on an intermittent basis.

   Contains: Information, maps, handouts.

   [3] The Bates Canyon Information Station - Is in Lake Meredith Recreation Area, however, it is the primary contact point for visitors to Alibates Flint Quarries National Monument. It is open from 9:30 AM to 6:00 PM daily from Memorial Day thru Labor Day.

3. Museums - One.

   <1> Lake Meredith Aquatic and Wildlife Museum - A cooperative venture between the National Park Service and City of Fritch. It is located in, and manned by, the City of Fritch and the Fritch Chamber of Commerce, with some assistance by Lake Meredith Recreation Area staff.

   Contains: Aquariums and exhibits associated with the fish and wildlife around Lake Meredith. It also contains a display of Alibates Flint. Information and handouts are available.

4. Amphitheatres - One.

   (1) One - Still under construction. Fritch Fortress Area.

5. Historic/Archeological Structures and/or Sites - One.

   ◇1◇ McBride House - Restored early ranch house. Fenced due to remote location. Descriptive interpretive sign.
   See site map PART I - 5, Page 5, for location of archeological sites.

6. Self-guiding Trails.

   (1) Grasses self-guiding trail - Plum Creek Area. Operated in conjunction with Soil Conservation Service. Seldom used due to lack of funds to coordinate use with area schools.

7. Cooperating Association Outlets.

   [1] One outlet at Lake Meredith Headquarters complex (See information station for location and hours of operation).

8. Libraries - One.

[2] District Ranger Station. The present library contains materials relating to both Lake Meredith Recreation Area and Alibates Flint Quarries National Monument. Collections consist of 600 books, 25 magazine and periodical titles, 35 movies, 2500 color slides, 250 photographs, mostly black and white, and the Studer Collection of over 1000 papers relating to Alibates Flint Quarries and the history of the Texas Panhandle. The main topics covered by the library include Archeology, Indians, History, National Park Service, Conservation, Safety, Boating, and recreation pursuits, including hunting, fishing and recreational boating.

9. Archives and Study Collection.

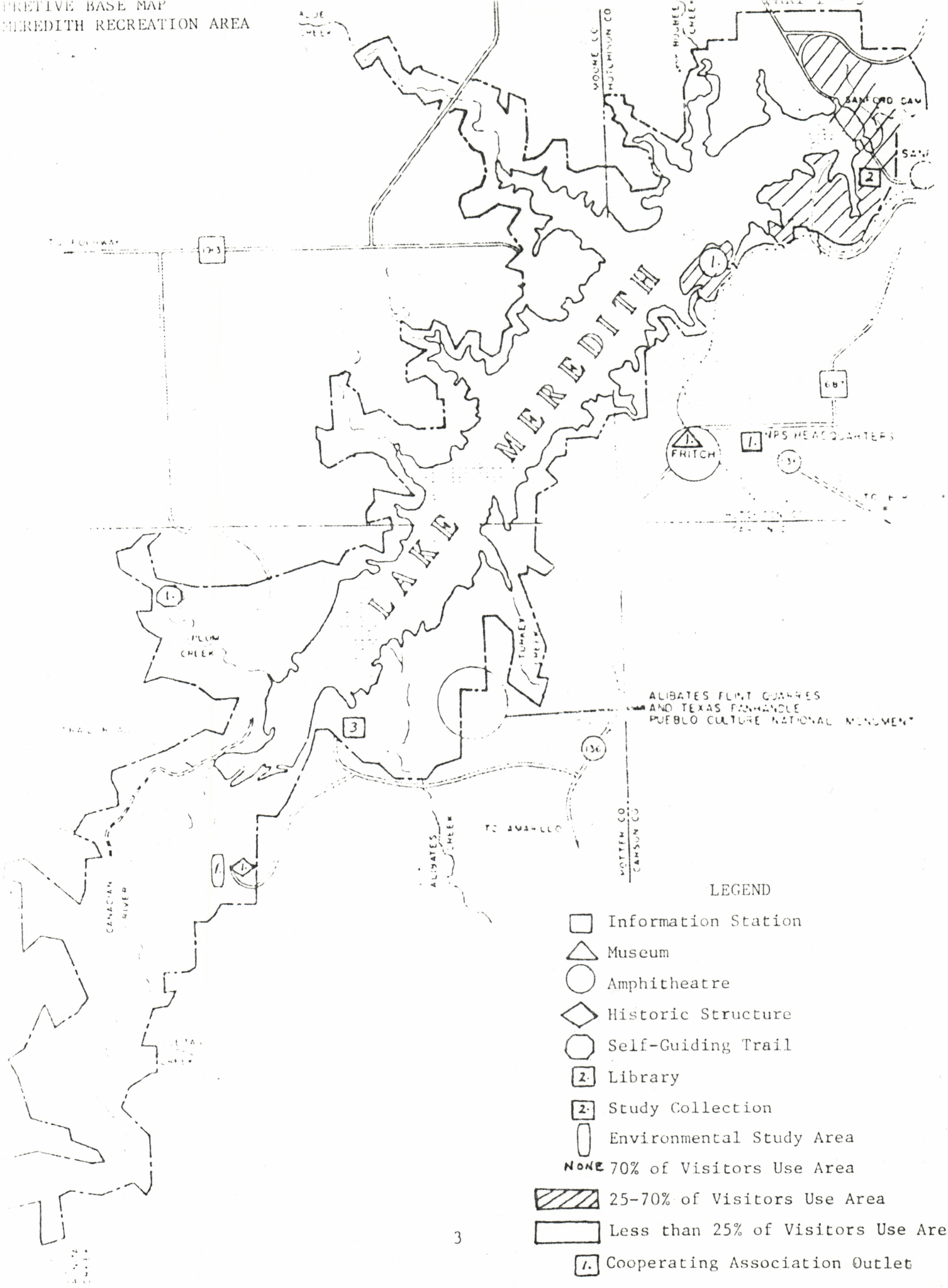
[2] Study Collections - Limited natural history study collections at Lake Meredith Recreation Area. Sizeable artifact collection at Lake Meredith Recreation Area District Ranger Station. (See Information Station for location).

B. SPECIAL PROGRAM SITES

1. Environmental Study Area.

(1) McBride Canyon Environmental Study Area - Available year around. Seldom used due to lack of personnel to coordinate with area schools.

PRETIVE BASE MAP
MEREDITH RECREATION AREA



SITE LOCATION MAP
Fig. 1.

HUNTING LOCATIONS

RIFLE, SHOTGUN & BOW HUNTING

SHOTGUN & BOW HUNTING

CLOSED TO ALL HUNTING

PRIVATE LAND CLOSED TO HUNTING OR BY PERMISSION ONLY



THIS SIGN WITH RED SLASH INDICATES AREA CLOSED TO HUNTING









2 KILOMETERS

1 MILE

PAVED ROAD

UNPAVED ROAD



ANALYSIS OF PERSONNEL FUNDING BASE 79 FY

A. NPS - INTERPRETATION EMPLOYEES AND BUDGET

Work Years Permanent - 1 Number of Positions - 1 - J7545-07
Work Years Temporary - .25 Number of Positions - 1

Total Work Years Available - 1¼.

Total Operating Budget - $24,390.

% Devoted to Personnel Compensation and Benefits - 90
% Devoted to Other - 10

B. NON-NPS EMPLOYEES AND PROGRAM FUNDS AVAILABLE

1. VIP Program - intermittent, infrequent assistance - no funds.
2. Cooperating entities - City of Fritch Museum Hostesses. 1 work/year.
3. YCC - Infrequent interpretation assistance.

C. PERMANENT NPS EMPLOYEE

Employee is active in off-site interpretive programs of varied nature. He also serves as roving interpreter during high visitation months. The seasonal interpreter will work 1980 on roving interpretation in the high visitor use areas of the lake, June thru August.

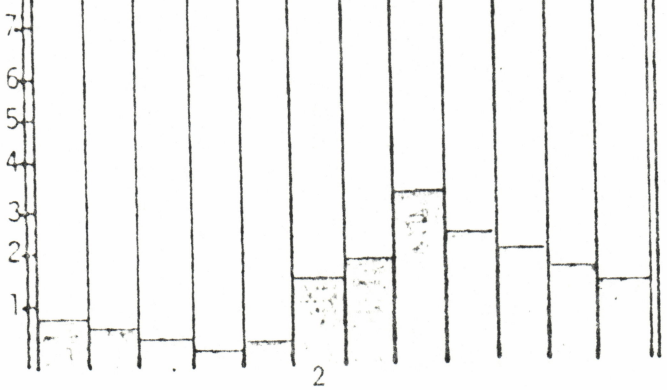
The museum hostesses are paid by the City of Fritch and operate the museum as follows:

MONDAY - CLOSED ALL DAY
SUNDAY & TUESDAY - 2:00 PM to 6:00 PM
WEDNESDAY-SATURDAY- 10:00 AM to 6:00 PM

C. PERSONAL SERVICES PROFILE COMPARED TO VISITATION WORKLOAD

Position	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Comments
Interpretive Specialist GS 9													A GS 3, Park Aid, is paid by Interpretation, but does no interpretive work.

Visitation profile
Hundred
(in Thousands)



SUMMARY OF INTERPRETIVE PROGRAM CONSTRAINTS

THEMES, OBJECTIVES, INTENDED AUDIENCES AND EXPECTED RESULTS

A. AREA'S INTERPRETIVE THEMES

1. Recreation Safety - Recreational use of Lake Meredith can be enjoyed in the fullest, in a safe manner, with little chance of accident or injury.

2. Importance of Water to Man - Water has always been a limiting factor in man's struggle for existence. The Indians could not survive here without this valuable resource, and neither can we.

3. Petroleum Industry - Today, we are independent on oil and gas for the survival of our economy. Past cultures were as dependent on the Alibates Flint as we are on petroleum products. The Lake Meredith Recreation Area is in the center of a great petroleum producing area, and the many wells we see around the lake are signs of our affluent society.

4. Cattle Ranching - Just as the Plains Indians were dependent on the buffalo, modern Americans are dependent on cattle ranching as a major source of food. The Texas Panhandle was one of the early ranching locations in our country, and the history is part of the resources of Lake Meredith.

5. Hunting - In primitive peoples, hunting is a means of survival. In modern society, hunting is a recreational means of relieving the tensions of modern day life, and getting back to nature.

6. Conservation of Natural Resources and the Natural Scene - Though Lake Meredith is an area where people congregate, it is also an area where natural values often take precedence over man-made values. Because of this, certain areas of the lake are restricted in the types of activities which are congruent with good conservation practices. Indian artifacts cannot be removed from the area. A limited amount of rock can be taken. Hunting and fishing are strictly controlled. Oil and gas company activities are monitored. Off-road vehicles are restricted in their areas of use. Each of these controls insures that we will still have both recreation and a recreation area in the future.

B. OBJECTIVES OF INTERPRETIVE PROGRAM

1. Provide information on recreational pursuits to encourage participation, to facilitate greater enjoyment and to develop a better understanding of the resource and its value.

2. Emphasize the recreation potential of the area, and the fundamental natural and historical values, where appropriate. Consideration should be given to interpreting the ranching and petroleum industries.

3. Establish suitable interpretive facilities at each major access point frequented by the greater number of visitors.

4. One or more environmental study areas should be established and maintained for year round use. The feasability of a permanent camp for Environmental Education should be investigated.

C. INTENDED AUDIENCES

1. Day use groups and individuals - many individuals use Lake Meredith on a one-day-at-a-time basis. These are users of the areas recreation facilities.

2. Overnight and week-end users - Coming in smaller numbers than day users, this is still an important group. They have more "down" time and may be more receptive to special programs than day users.

3. Special Groups - Many groups request a SPECIAL USE PERMIT, and, thereby, identify themselves as potential targets for special programs.

4. Off-Site Groups - These are people in the surrounding area who visit the lake occasionally or even regularly, but have no time for programs when at the lake.

D. EXPECTED RESULTS

1. A knowledge of the National Park Service and its mission, and how Lake Meredith relates to the other units of the system.

2. Knowledge of SAFE RECREATIONAL PRACTICES and how they may be carried out at Lake Meredith.

3. Knowledge of conservation of Land and Water resources both at home and abroad.

4. Knowledge of the history of the Texas Panhandle, and particularly, that of Indians, Cattle Ranching and the Petroleum Industry.

E. SUMMARY OF INTERPRETIVE PROGRAM CONSTRAINTS

1. A built-in constraint to interpretation at Lake Meredith Recreation Area is the resistance many visitors exhibit toward traditional forms of interpretation. Several traditional interpretive methods have been tried and abandoned, because most visitors wish to come to the area, do their thing and do not have the time or desire to attend interpretive programs. Other than traditional forms of interpretation should be tried.

2. Lack of developed campgrounds, visitor centers and other centralized visitor contact points makes interpretation difficult.

3. Insufficient funds for seasonal interpretive personnel is a constraint.

OVERVIEW OF PROPOSED INTERPRETATION AND VISITOR SERVICES PROGRAM

1. Attended Stations (Fixed Stations)

   A. Lake Meredith Recreation Area Headquarters Information Station - This is a primary contact point for Lake Meredith Recreation Area. Park brochures are disseminated from this point, and all requests for information, by mail, are routed to this point.

   Objective - To disseminate information on recreational activities around Lake Meredith Recreation Area.

   Target Audiences - Family groups and individual visitors.

   Period of Operation - 8:30 AM to 5:00 PM Monday thru Friday, year round.

   B. Lake Meredith Recreation Area District Ranger Station Information Station - Purpose - The primary purpose is to serve Lake Meredith Recreation Area. A secondary purpose is to serve as a point to disseminate information on Lake Meredith Recreation Area.

   Objective - To disseminate information on all aspects of recreation at Lake Meredith Recreation Area.

   Target Audiences - Family groups and individual visitors.

   Period of Operation - On an intermittent basis, only when Rangers on duty are conducting routine business at the Ranger Station.

2. Conducted Tours

   A. Nature Walks

   Purpose - To provide special interest groups including school children with a program of their choice on Plants, Animals, Indians and early history and geology.

   Objective - To instill a sense of belonging to nature to individuals who are usually city/man oriented.

   Target Audiences - School groups, garden clubs, study clubs, Boy Scouts, Girl Scouts and other interested groups.

   Period of Operation - Year round as needed. Nature walks vary in length from 45 minutes to four hours, and may occasionally include demonstrations.

   B. Alibates Tours

   (As an aid to Alibates Flint Quarries National Monument, the Interpretive Specialist leads occasional, off-season tours into the monument).

3. Presentations (Demonstrations) - None.

4. Non-Personal Services

A. Library

Purpose - To provide a storehouse of knowledge and information on Lake Meredith Recreation Area and the surrounding area. Primary subjects include Indians, Ranching, Nature Study, Recreation Use, Environmental Education and Conservation.

Objective - To enable employees to better interpret the recreation area, and carry on their jobs in a professional manner.

Target Audiences - Employees and "Special" need visitors.

Period of Operation - Year round and by special request. Open 8:30 AM thru 5:00 PM on request with park service personnel in the area.

B. Study Collections

The information given for libraries would be identical for study collections.

C. Audio-Visuals

Purpose - To provide information for off-site talks, and to house movies dealing with the National Park Service and Conservation.

Objective - To enhance the interpretive program by providing quality programs.

Target Audiences - Mainly off-site program users, but also occasionally on-site groups as requested.

Period of Operation - Year around as requested.

5. Outreach

A. Off-Site Programs

Purpose - To enhance the visitor use of Lake Meredith Recreation Area, provide interpretation and give water safety information.

Objectives - To provide safety information and other special programs for visitors who may not otherwise have this data available to them.

Target Audiences - Off-site groups, pre-arrival groups and special interest groups.

Period of Operation - Year around by special request.

6. Administration and Support

A. Financial mangement, material management, program management, personnel management

Purpose - To provide operation of the area within guidelines.

Objective - To carry out the objectives listed in PART I - 7B.

Period of Operation - Year around as needed.

7. General Overview

As in most recreation areas, conventional interpretive programs have not worked. Our primary contacts have been made by off-site programs in the surrounding area. We get many requests each year for boat safety programs, natural history programs, and programs on the National Park Areas, around the country. Another popular program has been nature walks, both off-site and in areas around the recreation area. This year, we have constituted a limited roving contact program, which may prove to be a success, if fully developed, in future years.

The Lake Meredith Aquarium and Wildlife Museum is also a good potential contact site. This facility was made possible through National Park Service funds, and in a sense, we are responsible for seeing that good interpretation is carried out at this site.

PART II - 2

Relationships of Activities to Themes, Objectives, Audiences and Expected Results

ACTIVITIES	THEMES					OBJECTIVES				AUDIENCES					EXPECTED RESULTS					
	Recreation Safety	Water and Conservation	History	Hunting	Recreational Pursuits	Natural & Historic	Interpretive Facilities	Environmental Study Areas		Day Use	Overnight & Week-ends	Special Groups	Off-Site Groups		National Park Service	Safe Recreational Practices	Conservation	History		
. Attended Stations																				
a. LAMR HDQTRS.	x			x	x		x			x	x				x	x				
b. LAMR DIST. RGR.STA.	x			x	x		x			x	x				x	x				
. Conducted Tours																				
a. Nature Walks		x				x		x		x	x	x	x				x	x		
b. Alibates Tours			x							x		x						x		
. Presentations																				
. Non-Personal Services																				
a. Library	x	x	x	x	x	x				x		x			x	x	x	x		
b. Study Collections		x		x		x				x		x					x			
c. Audio-Visuals	x	x	x	x	x	x	x	x			x	x	x		x	x	x	x		
. Outreach																				
a. Off-Site Programs	x	x	x	x	x	x		x				x	x		x	x	x	x		
. Administration and Support																				

1

PART III - 1 & 2

ACTIVITY	(A) Work years programmed	(B) Actual work years	Total cost budgeted	Actual total cost	Projected Accomplishment/Comments	Actual Accomplishments/Comments
Attended Stations	79FY					
Bates Canyon Info. Sta.					Bates Canyon Info. Sta. to be manned by personnel funded by ALFL	Same
LAMR HDQTRS Info. Sta.	.28	.28	2706.	2706.	For seasonal Park Aid. To man Info. Sta. Sat.-4PM to 6PM. Sunday 9:30 AM to 6PM, along w/other duties. Station manned week-days by personnel funded from accounts other Interpretation.	Same
LAMR Dist. Ranger Sta. Info. Sta.					Manned intermittently by an aggregate of I & RM employees	Same
Lake Meredith Aquarium and Wildlife Museum Info. Sta.					None Planned in 1979	The Interpretive Specialist experimented as a roving interpreter. Part of the experiment involved assisting the museum hostesses intermittentl
Conducted Tours					None Planned in 1979	The Interpretive Specialist experimented as a roving interpreter. Some conducted tours and presentations were given. This will be enlarged through a Seasonal Interpreter in 1980
Presentations						
Non-Personal Services	.20	.20	4087.	4087.		
Outreach	.30	.30	6130.	6130.	Live talks, to schools, clubs, organizations, meetings, conventions fairs and radio and TV appearance.	60+ off-site programs presente Some given by staff funded by
Administration & Support	.50	.50	10215.	10215.		other than Interpretation.
TOTAL	1.28	1.28	23138.	23138.		

PART III - 1 & 2

PRODUCTIVITY SCALE FOR PERSONALIZED SERVICES

LAKE MEREDITH RECREATION AREA

ATTENDED STATIONS	CONDUCTED TOURS DEMONSTRATIONS	OUTREACH OFF-SITE PROGRAMS	PRODUCTIVITY RANGE AND DEFINITION
Attended stations are either manned by other agencies (City of Fritch) or are manned as secondary result of other duties ie. LAMR H. Q. and District Ranger Stations. Therefore, a productivity scale is meaningless.	Experimental only in 1979.	80 per program  24 per program	Counter Productive Range: Increased potential for resource damage or visitor safety problems; Reduced quality of service; Reduced ability to communicate effectively with entire audience; Reduced potential for achieving program objectives
			Optimum Level: Single program capacity based on the nature of the resource, type of program, ability to communicate effectively w/entire audience
		*16 per/program	Productive Range: Non-damaging to the resource base. Able to maintain program quality and safety standards. Able to communicate effectively with entire audience. Able to achieve program objectives.
		7 per program	Minimum Level - 30% of optimum level
			Under Productive Range: Ineffective use of capital and manpower when measured against other park and servicewide needs
		0 per program	

*Designates existing level

FIRE MANAGEMENT PLAN

LAKE MEREDITH NATIONAL RECREATION AREA

Appendix H

Water Resources Management Profile

for

Lake Meredith Recreation Area

and

Alibates Flint Quarries National Monument

Recommended by: John C. Higgins 2-1-83

Superintendent, Lake Meredith Recreation Area and Alibates Flint Quarries National Monument — Date

Approved by: (Sgd) Jack Neckels FEB 9 1982

Acting Regional Director, Southwest Region — Date

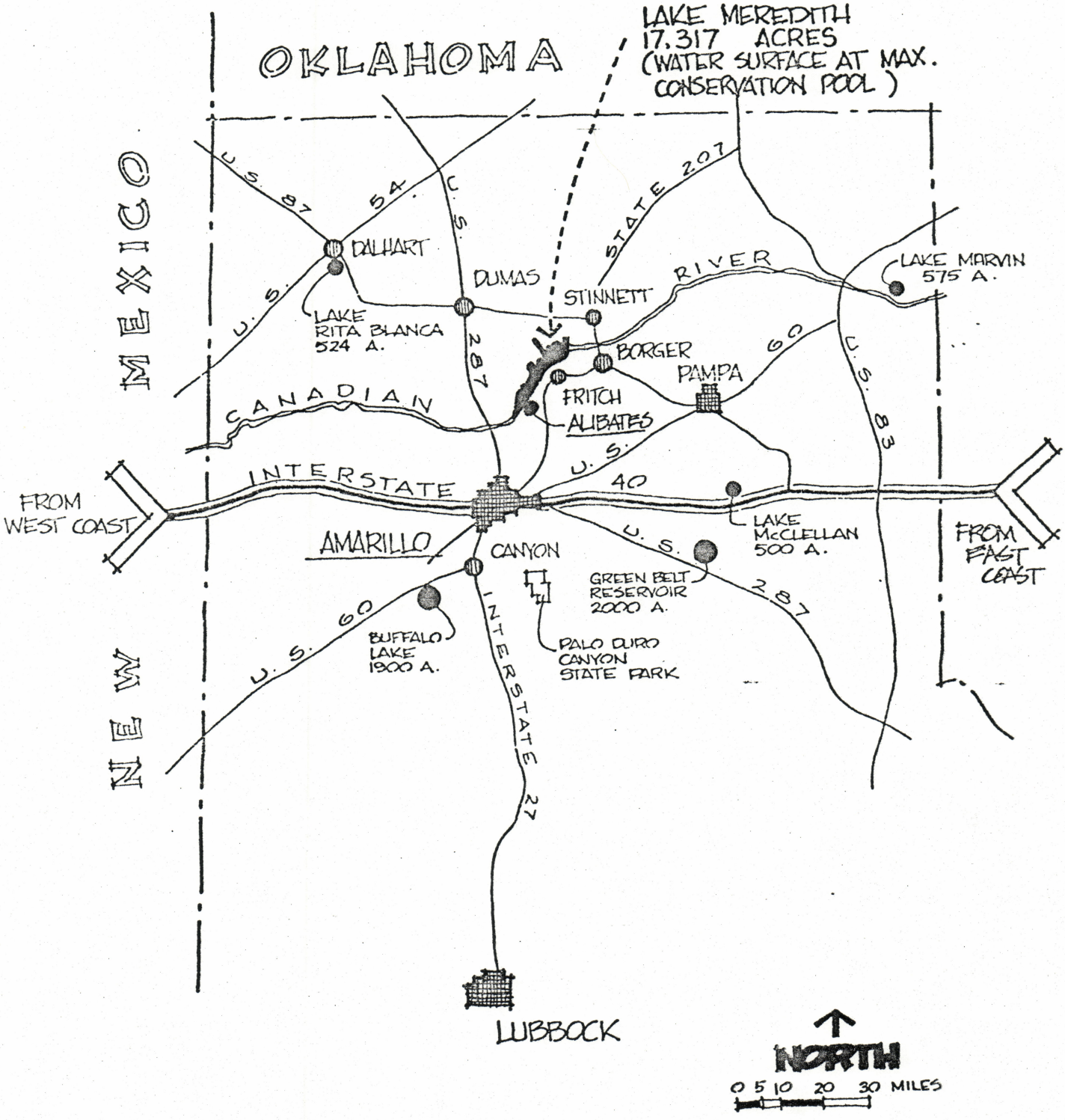


Figure 1: THE TEXAS PANHANDLE REGION

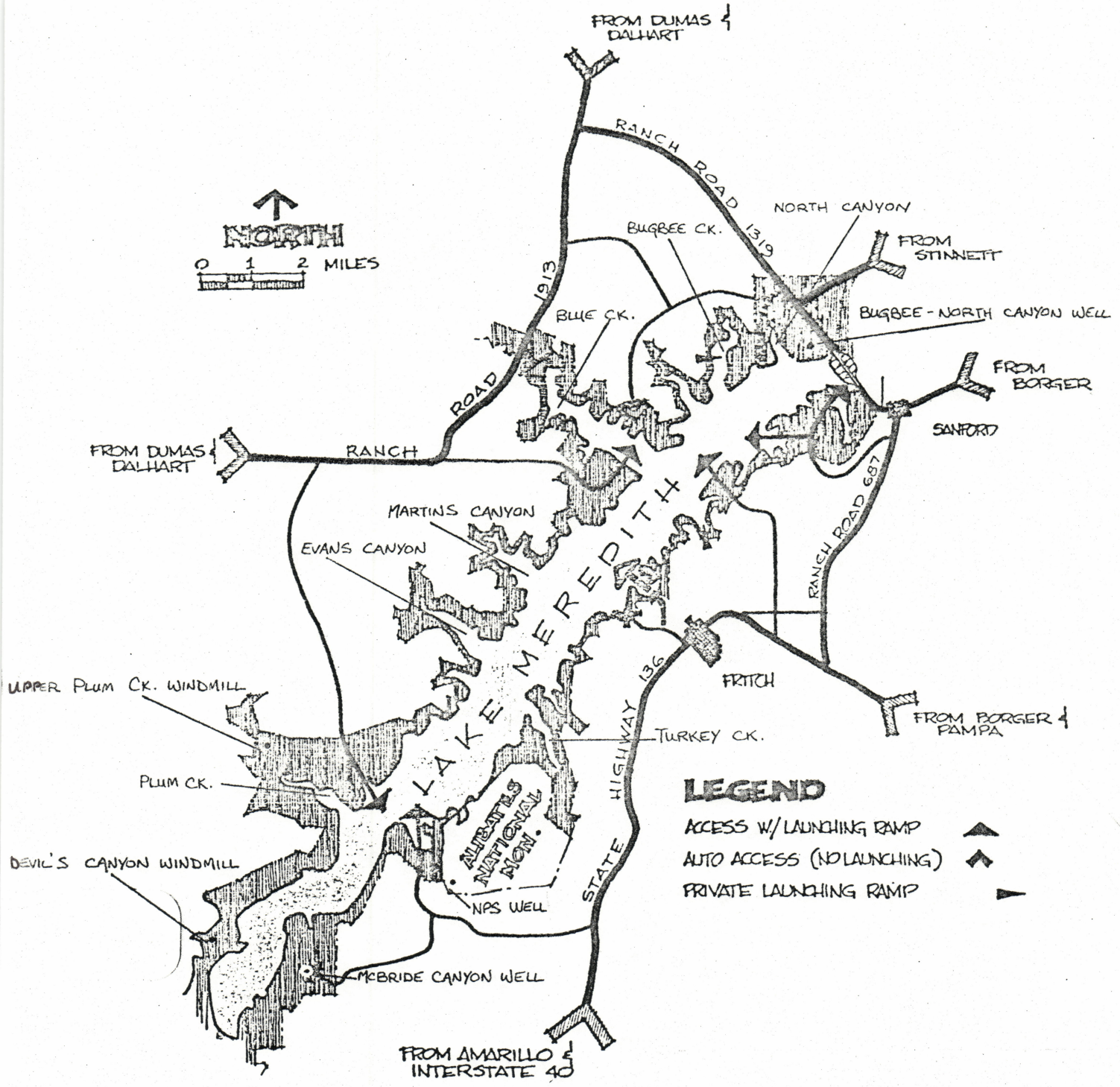


Figure 2: **Lake Meredith Recreation Area**

and

Alibates Flint Quarries National Monument

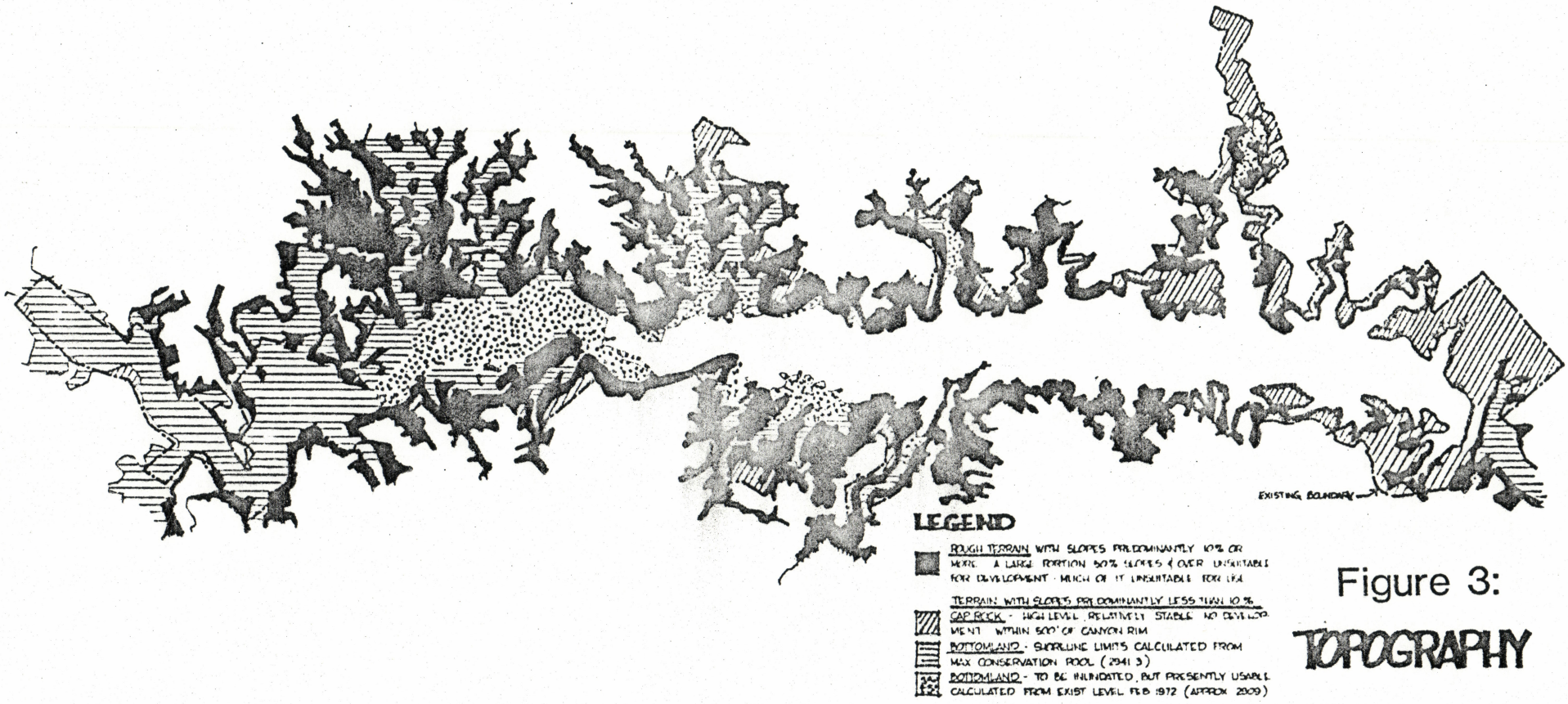


Figure 3:

TOPOGRAPHY

I. Physical Description of the Resource

1. Physiography: Lake Meredith Recreation Area is located in the Canadian River Basin in the high plains of Texas (Arkansas-White-Red, Region II, ASA 05 + 06). The lake is a man-made impoundment behind Sanford Dam on the Canadian River encompassing a maximum 21,640 acres (control storage) of lake surface; the recreation area includes the lake and 23,311.3 acres of land to provide campsites and lake access. Alibates Flint Quarries National Monument is located on the southeastern shore of the lake, south of the Canadian River. The land surface is nearly flat and slopes to the southeast approximately 8 to 10 feet per mile (Cronin, 1958). In the vicinity of Lake Meredith, this flat surface has been downcut by the Canadian River and its tributaries, causing canyons, or "breaks", some of which are now being filled by Lake Meredith.

   All groundwaters are within the Great Plains physiographic province.

2. Climate: The climate is semi-arid, with approximately 20 inches of annual precipitation, 70% of which falls between April and September (Cronin, 1958). Summers are hot with frequent strong steady breezes, resulting in a high evaporation rate. Approximately 60 to 65% of lake volume is estimated to be lost to evaporation in this region (NPS, 1982).

3. Hydrogeology: Permian rocks outcrop in breaks and bluffs along the Canadian River and its tributaries, and in several small areas on upland surfaces near streams. The Permian formations are made up of sandstone, red shale, gypsum, anhydrite and salt, with the Alibates Dolomite Lentil near the top of the Permian sequence.

   The Alibates Dolomite Lentil contains Alibates Flint of Permian Age. It is found at Alibates Flint Quarries National Monument and at Lake Meredith Recreation Area, especially in the Bates Canyon to Plum Creek areas. It appears that the flint may have been formed by more than one method. It possesses physical properties, which made it highly desirable to prehistoric man and it was used by him almost continuously for 12,000 years.

   The Pliocene Ogallala Formation rests unconformably on the Permian strata. It is composed of beds and lenses of sand, silt, clay, and gravel, with caliche in many places as a secondary deposit. Eight to ten miles north of the Canadian River, the Ogallala is several hundred feet thick, but near the river it is eroded down to between 0 and several feet thick.

   Quarternary alluvial deposits fill the channels which have been incised into the Ogallala. The Ogallala Formation is topped with Quarternary aeolian sand and silt, and Quarternary terraces line the Canadian River and its tributaries.

The Permian rocks yield small amounts of water ($\pm$ 5 gpm) from pockets of fine sand or solution conduits. The water quality is variable and is often very poor (Cronin, 1958). The Quarternary alluvium contains water but wells in these deposits are susceptible to flooding and to pollution by improper disposal of oil field brine or sewage (Cronin, 1958).

The Ogallala formation is the Panhandle's most important water-bearing strata. This porous sand strata long has supplied the region with water for farming, ranching, commercial, and domestic uses. The Ogallala is being pumped at a rate in excess of its recharge so as to lower the water table an average rate of 2-3 feet per year, according to scientists at the Southwestern Great Plains Research Center, Bushland, Texas. Artificial recharge from playa lakes is under study, but, even if instituted, has been termed a "stopgap" measure. Because of the shallow depths of the Ogallala at Lake Meredith the closest potentially productive well site is one-half to one mile away where the formation is approximately 50 feet thick. (NPS files, 1970).

4. Soils: According to the small-scale soils map of Potter County, the Lake Meredith area falls in a region of the Potter-Mansker soil association. Potter soils are described as "grayish-brown to pale brown calcareous sandy loam to clay loam surface, 4 to 10 inches thick over white or pinkish-white caliche several feet thick, semi-hard in upper part becoming soft and chalky below. Gently sloping to hilly (2 to 20% slopes)." Potter soils fall in Hydrologic Group C, permitting close to the maximum amount of surface runoff from precipitation.

   Mansker soils are "dark grayish-brown friable loam to clay loam surface, 6 to 12 inches thick, over brown to very pale brown friable granular clay loam with small $CaCO_3$ (calcium carbonate) concretions in lower part. Strongly calcareous throughout with nearly white thick horizons of $CaCO_3$ at 12 to 20 inches. Slopes from 1 to 5%." Mansker soils fall in Hydrologic Group B, indicating moderate permeability and less surface runoff than from Group C soils. In the Potter-Mansker soil association, roughly 40% of the soils are Potter, 30% Mansker, and 30% "other". (SCS, 1960).

5. Water Quantity:

   a. Surface Waters: A single reported flow measurement of 50 gpm was made on Bugbee Creek in May 1967. Blue Creek was measured at the same time and was flowing about 1200 gpm, reflecting runoff from a recent rainfall (NPS).

      Lake Meredith design capacity at top of control storage is 1,408,000 acre feet of water; maximum storage at Conservation

Pool is 864,400 acre feet of water. The lake's primary purpose is to supply water to 11 North Texas cities. The prime life of Lake Meredith has been estimated to be 60 years and the lake is expected to be useful for another 150 to 300 years as a supplementary water source for the region.

b. Groundwaters

Two test wells were drilled at Lake Meredith Recreation Area in 1973 (see Figure 2) to explore for a water supply for recreation area facilities (Lake Meredith was rejected as a drinking water source because of poor water quality, and other surface water was of insufficient quantity). The McBridge Canyon well (#UU 05-27-401) was drilled 441 feet into the Quartermaster Formation of the Permian rocks and yielded an average of only 2 gpm. The Bugbee-North Canyon well (#PJ 06-20-201) characteristics are unknown.

Neither well proved to be an adequate water source, so arrangements were made with Phillips Petroleum Company to provide water at Sanford Yake, with the City of Fritch to provide water at Fritch Fortress. Each site is equipped with a 100,000-gallon storage tank. There have been irregularities in the water supply from the Phillips Petroleum line to Sanford Yake. The City of Fritch system provides more consistent service to the Fritch Fortress Site.

Test drilling was conducted at the Alibates Unit in 1966. The first hole was abandoned after 10 feet; the second was drilled 429 feet into the Permian formations, just off of Park Service property, and struck water at 331 feet below ground surface. The well was capable of producing 5 to 7 gpm. However, water quality was too poor for the well to be useful as a source of drinking water. At present, no water is available at the site.

6. Water Quality: Bugbee Creek, Blue Creek: Unknown.
Lake Meredith: Water in the lake has been highly mineralized since the lake began to fill, and the chemical constituents have continued to increase (Cooper, 1970). Several theories have been advanced to explain this. One hypothetical source of the minerals is the leaching and solution of the geological formations in the lake bed and walls (Cooper et. al, 1971). Another theory is that there is leakage from a New Mexican aquifer between Ute Dam and the state line, with pressure from an artesian well forcing water into the Lake Meredith system (Brown, 1977). Artesian salt water wells have been identified in New Mexico by CRMWA and the Bureau of Reclamation and shown to flow into the Canadian River, increasing its salinity.

Inflow to the lake has been lower and evaporation higher than predicted, causing concentrations of dissolved solids to increase. The Bureau of Reclamation is investigating this situation. Inflow of pesticides and herbicides to the lake is another source of chemicals, one that is being monitored by the Canadian River Municipal Water Authority (CRMWA) and the State of Texas. Finally, siltation in the lake has an effect not only on water quality but on lake volume; and Cooper (1970) has pointed out the connection between heavy runoff and great increases in coliform bacteria and plankton concentrations. Lake Meredith water requires coagulation, sedimentation, filtration, chlorination and demineralization to render it potable (NPS, 1972).

Water quality at the McBride Canyon well is extremely poor, with total dissolved solids (a measure of chemical concentration) over 7 times higher than the EPA recommended ceiling for drinking water.

At Sanford Yake and Fritch Fortress the water supplies are consistently in compliance from the standpoint of chemistry. It has, however, been recommended that the Park Service chlorinate the water on site (Bowman, 1982).

7. Water as it supports the park's purposes:

The primary purpose of Lake Meredith is to provide municipal and irrigation water for the region; the secondary purpose is as a water-based recreation resource. However, recreation is the primary reason for NPS involvement at Lake Meredith Recreation Area. Other purposes for water are to maintain the riparian ecosystem around the lake and tributary creeks within park boundaries, and to provide water for drinking and sanitation purposes for park visitors.

Demand for water for visitors and staff is projected to increase from 16.8 million gallons per year in 1975 to 20.2 and 24.6 million gallons by 1985 and 2000 respectively.

8. Floodplain Identification and Management:

Flood hazard at Lake Meredith and Alibates has not been studied by NPS. The Flood Hazard maps for Potter County (prepared by the U.S. Department of Housing and Urban Development, Federal Insurance Administration) indicate that the entire periphery of the lake is subject to flooding. However, the greatest potential for flood hazard to park visitors is from isolated flash floods along side drainages or from flooding on the Canadian River above Lake Meredith. Rising lake levels present little hazard to area visitors, in that rises occur quite slowly. The only NPS facilities

threatened by rising lake levels are courtesy docks, portable restrooms, picnic tables, and garbage cans, all of which can be moved. Fluctuating lake levels do present problems for the Marina concession facility. A floodplain study is recommended for the purpose of delineating the areas within the parks that would be flooded by the 100-year and 500-year storm.

II. Management of Water Resource and Legal Aspects

1. Water Rights: By resolution passed by CRMWA on September 13, 1965, NPS isentitled to use no more than 350 acre feet per year from Lake Meredith for domestic and irrigation requirements. In addition, NPS holds a riparian right to an unspecified amount of water from McBride Canyon well water. Time of priority claimed is December 29, 1950 (65 Stat. 1124).

2. Administration:

Lake Meredith: CRMWA
Bureau of Reclamation
Corps of Engineers
Other?

each responsible for what aspects?

Groundwater: Texas Water Rights Commission
(Groundwater Conservation District No. 3)

Water Quality:

III. Water Resources Problems, Lake Meredith

The following projects have been identified in the Resources Management Plan for Lake Meredith, to address water-related problems:

LAMR-N-9: Lake Meredith Shore Erosion.

LAMR-N-11: Natural Resources Basic Inventory.

LAMR-N-11f: Hydrologic Features.

11g: Water Quality.

LAMR-N-14: Abandoned Roads-Scarred Right-of-Ways (erosion implications).

LAMR-N-22: Water Resources Analysis - addressed in large part by this Water Resources Profile.

LAMR-N-25: Adverse Effects of Chemical Pollutants from Adjacent Lands. 2, 4, 5-T and Tordon are sprayed on adjacent lands to kill mesquite. Wind-drift and runoff threaten park lands, fauna and flora, as well as lake water quality. Plans exist to cooperate with CRMWA and ranchers, to get them to spray only under proper wind conditions. Lake quality will also be monitored, and lake-user-interests may collaborate on legal action if biocide levels become excessive.

LAMR-N-26: Neighboring Real Estate (other agencies inspect septic tanks to ensure that there is no leaching into the lake; but land use must also be monitored to forestall problems associated with a change in land use.)

LAMR-N-27: Protection of Harbor facilities from Wave Action.

LAMR-N-28: Oil and Gas Exploration. The lake area is threatened by spills, by erosion of access roads (see LAMR-N-14) and by improper disposal of reject water from oil and gas wells.

LAMR-N-W-1: Investigate Slope Failures Around Lake (approved by Regional Director for FY 83). The Bureau of Reclamation reported the following situations:

1) A slump near the intake structure of the dam has moved 3 to 8 inches since 1975.

2) A new crack roughly 1½ inches wide and 25 feet long has formed about 7 feet back from the cliff edge, 80 feet north of the west end of the main scarp.

3) Numerous other minor slope failures exist around the lake. Most do not imminently threaten the dam or any access roads or visitor facilities. However, a slump at the parking lot fill at Sanford-Yake does represent a potential hazard to the Marina area.

Periodic inspeciton of all sites which show past or potential slope failures is advised.

LAMR-W-2: Connect Sanford Yake to City of Fritch Water System. The Phillips Petroleum Company distribution system is made up of different sizes of pipe and has a number of users, resulting in fluctuations in pressure (Bowman, 1982). It is recommended that the Sanford Yake site be connected to the City of Fritch system which serves Fritch Fortress.

LAMR-W-3: Provide chlorination units at Fritch Fortress and Sanford Yake. (Maintenance).

IV. Water Resources Problems, Alibates

The Alibates Resources Management Plan lists the following projects which touch on water issues:

ALFL-N-1: Completion of National Resources Basic Inventory:

A. Soils

B. Hydrologic features

ALFL-N-2: Climatic Factors and Analysis

Install weather station for temperature, precipitation and humidity. Compare with data collected at Borger, Texas and CRMWA headquarters at Lake Meredith.

ALFL-N-3: Soil Structure

In coordination with ALFL-N-1E, analyze chemical composition, erosion potential and related geological features.

ALFL-N-11: Gas and Oil Extraction and Development - relates to LAMR-N-28.

ALFL-N-12: Adverse Effects of Neighboring Real Estate Development - relates to LAMR-N-26.

ALFL-W-1: Availability of water for development at Headquarters and Visitor Use Area. Geo-Hydrologic and Economic study of alternatives required.

ALFL-W-2: Test Drilling for water into the Dakota sandstone aquifer which underlies the entire park area, estimated depth 1500 feet.

V. References Cited:

Alibates Flint Quarries National Monument Staff, 1981. Resources Management Plan for Alibates Flint Quarries National Monument.

Bowman, C.R., 1982. Report on Survey of Environmental Health Facilities, Lake Meredith Recreation Area, Texas. Internal NPS report in files of NPS, SWRO, Santa Fe, New Mexico 87501.

Brown, D.L., 1977. Canadian River Directors to Ponder Dispute. Lubbock Avalance-Journal, 4/10/77.

Cooper, W.A., 1969. Water Quality and Limnology of Lake Meredith: Annual Report, 1969. W.A. Cooper, Ph.D. West Texas State University, Department of Biology, Canyon, Texas.

Cooper, W.A., R.S. Hestand III, and C.E. Newton, 1971. Chemical Limnology of a Developing Reservoir (Lake Meredith) in the Texas Panhandle. In: Texas Journal of Science Vol. 23, No. 2, November 1971.

Cronin, J.G., 1958 (?). A Summary of the Occurrence and Development of Ground Water in the Southern High Plains of Texas.

Division of Natural Sciences, Southwest Region, National Park Service, 1981, Resources Management Plan, Lake Meredith Recreation Area.

NPS Internal Memorandum from Team Manager, SW Team, DSC to Director, SWR, 11/29/72.

NPS, 1982. Alibates Flint Quarries National Monument General Management Plan, Section D: Hydrology Report.

Rettman, P.A. 1967. Water supply for Bugbee Creek, Blue East and Blue West Recreation Sites, Lake Meredith, Texas. U.S. Geological Survey report prepared for NPS; not for publication or distribution.

SCS, 1960. Generalized Soil Map of Potter County, Texas. Compiled by Billy Chance, SCS, in cooperation with Texas Agricultural Experiment Station.

U.S. Department of Housing and Urban Development (HUD), 1977. Flood Hazard Boundary Map, Potter County, Texas. HUD Flood Insurance Administration.

Determination

It is determined that none of the actions outlined above significantly affect the natural environment nor cause controversy.

NO ENVIRONMENTAL ASSESSMENT WILL BE PREPARED.

Recommended by: Garland Moore — Jan. 21, 1983
Hydraulic Engineer, Southwest Region — Date

Concurred by: John C. Higgins — 2-1-83
Superintendent, Lake Meredith Recreation Area and Alibates Flint Quarries National Monument — Date

Concurred by: (Sgd) Jack Neckels — FEB 9 1982
Associate Regional Director, Park Operations, SWR — Date

Approved by: (Sgd) Jack Neckels — FEB 9 1982
Acting Regional Director, Southwest Region — Date