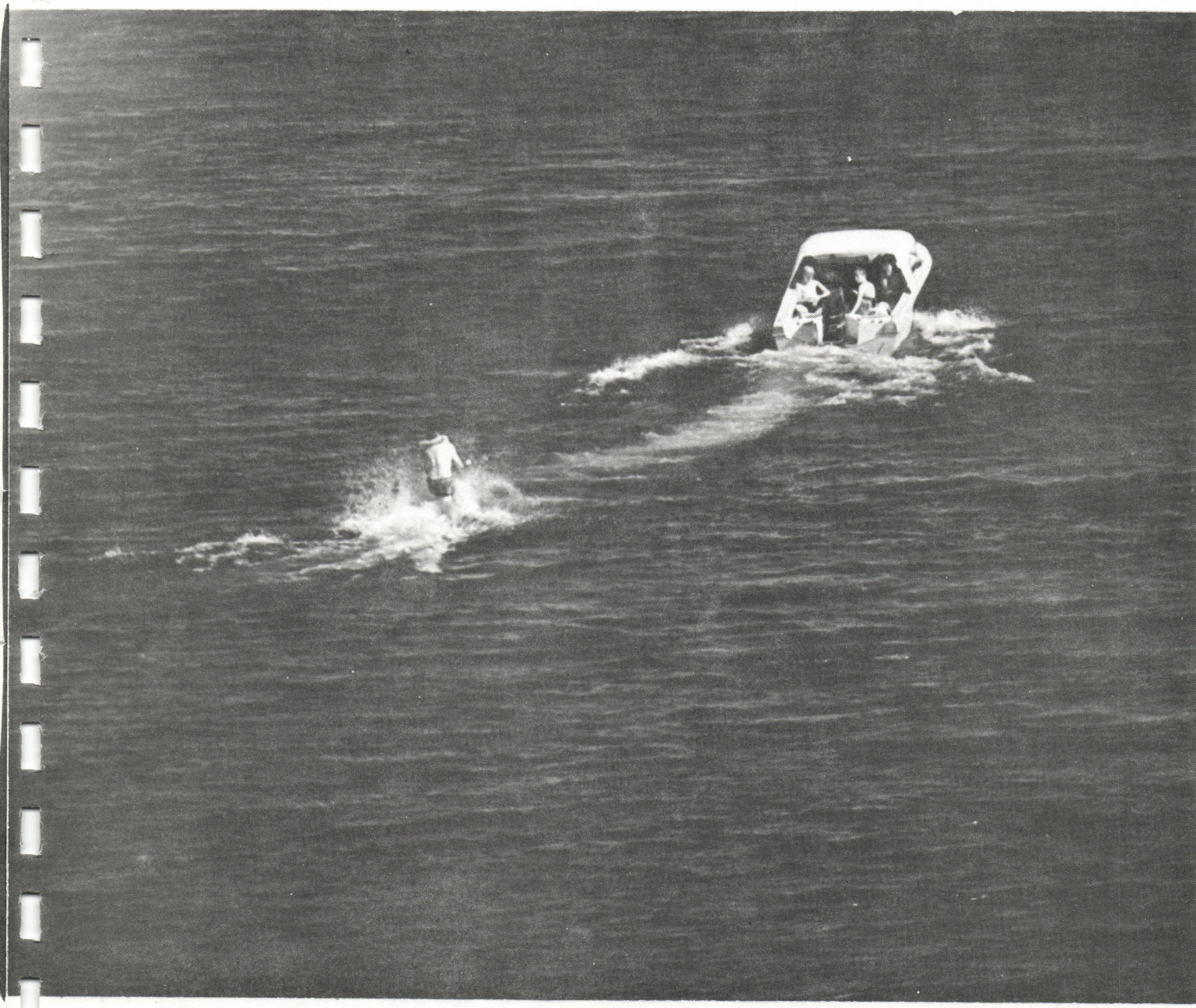
Fig. 1. BOATING AND WATER SKIING ARE FAVORITE ACTIVITIES AT LAKE MEREDITH. NPS Photo (Mang).



NATURAL RESOURCES MANAGEMENT PLAN

FOR

LAKE MEREDITH RECREATION AREA
TEXAS

December
1974

Prepared by: Lake Meredith Recreation Area Staff and Southwest Region Office of Natural Science

Reviewed by: Southwest Region Offices of History, Archeology, Planning, Maintenance, Interpretation, and Resources Management

Approved for Implementation by: _____
Regional Director, Southwest Region

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NATURAL RESOURCES MANAGEMENT PLAN

A Natural Resources Management Plan is a strategic planning document and a key factor in good management and preservation of the resource.

This plan is a set of project statements which include proposed action for implementation as well as 5-year programming sheets for maintenance and research actions. Other sections of the plan serve as an introduction and a set of guidelines. Project statements are determined on the basis of approved Management Objectives and Land Classification. Management Constraints and Completed Research serve as guidelines for projects. The Plan serves the Superintendent in two ways: (1) as a manual for maintenance activities that will preserve the environment or achieve an environmental status quo to comply with Park Service Standards, and (2) a set of research projects and priorities that are designed to obtain additional information for management and interpretation.

I. MANAGEMENT OBJECTIVES

STATEMENT FOR MANAGEMENT AND PLANNING

A. Purpose of the Park

Lake Meredith Recreation Area was created to provide a variety of land and water-based recreational activities for the visitors to the area. The National Park Service administers the area for these purposes.

B. Management Category

Recreational

C. Management Objectives

General Management:

1. The operation of the recreation area will be on a year-round basis and twenty-four hours a day.

2. Management of the area will be vested in a superintendent with a staff that possesses knowledge of and experience in the various fields of operation that dictate administration of the area. Due to

the isolation from other Service areas and the potential for growth to a large park, the area will not be included in a cluster or group.

3. Fees will be adopted for the various uses of the area as developments occur.

4. Close liaison will be maintained with the Canadian River Municipal Water Authority (CRMWA) and the Bureau of Reclamation because of their vested interest in the recreation area.

5. Protection for visitors, resources, and developments will require quarters within the area.

6. Administrative headquarters for the park will be located where convenient for on-site operations and visitors' needs.

7. Contracts and/or agreements will be established with local governments for accomplishing certain of the essential services connected with maintenance and physical protection requirements.

8. Consultation and cooperation with other Federal, State, and local agencies will be effected to develop suitable zoning and sanitation standards for lands adjacent to the recreation area.

9. An effective research program will be developed to provide facts on which the visitor use, resource use, and resource management programs can be based.

Resource Management:

1. Cooperative relationships will be established with the petroleum industry and State regulatory agencies to develop standards on petroleum production that will improve the environment, remove pollution and safety hazards, and aid in the administration of the area.

2. The entire grazing program will be evaluated to determine its scope. The recommendations of the Soil Conservation Service will be obtained in managing grazing.

3. Management of the fish and wildlife resources will be done in close cooperation with the Texas Parks and Wildlife Department.

4. Once research and survey requirements are met concerning the historical and archeolgical resources of the area, management of them will evolve around what will be used for public display.

5. Native vegetation will be fostered whenever possible to provide a stable ground cover to assist in erosion control.

6. All development will be planned and implemented with the basic fact that Lake Meredith is first and foremost a municipal water supply.

7. Management should be continually aware of the presence of prehistoric and historic sites so that routine maintenance and con-

struction jobs involving disturbance of the ground will not destroy sites that we are charged with preserving.

Visitor Use:

1. The second basic purpose for the construction of the Canadian River Project was to provide for the recreational needs of the people who visit the reservoir. The newness of Lake Meredith Recreation Area and new concepts in recreation activity make this park a logical place to be innovative in the experimentation with differing types of visitor use.

2. Action of the Board of Directors of the Canadian River Municipal Water Authority has allowed the retention of all water that can be impounded up to the limits of the maximum conservation pool. This factor must be considered in the planning for any permanent facilities.

3. The desirability of having private campgrounds in the vicinity of the reservoir should be investigated.

4. The maximum number of access points to the lake will be developed to prevent concentration of visitors at a few locations.

5. Temporary facilities must be developed to provide for adequate visitor use during the time period when the lake is achieving the maximum conservation pool.

6. The creation of the recreation area in an area so devoid of such sites has attracted visitors of all ages and types. Development of recreational facilities must include consideration of the elderly and those with physical handicaps.

7. Cooperation with the Panhandle Regional Planning Commission will be affected in developing the recreation area to achieve compatability with other plans for recreational use.

Interpretation:

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.

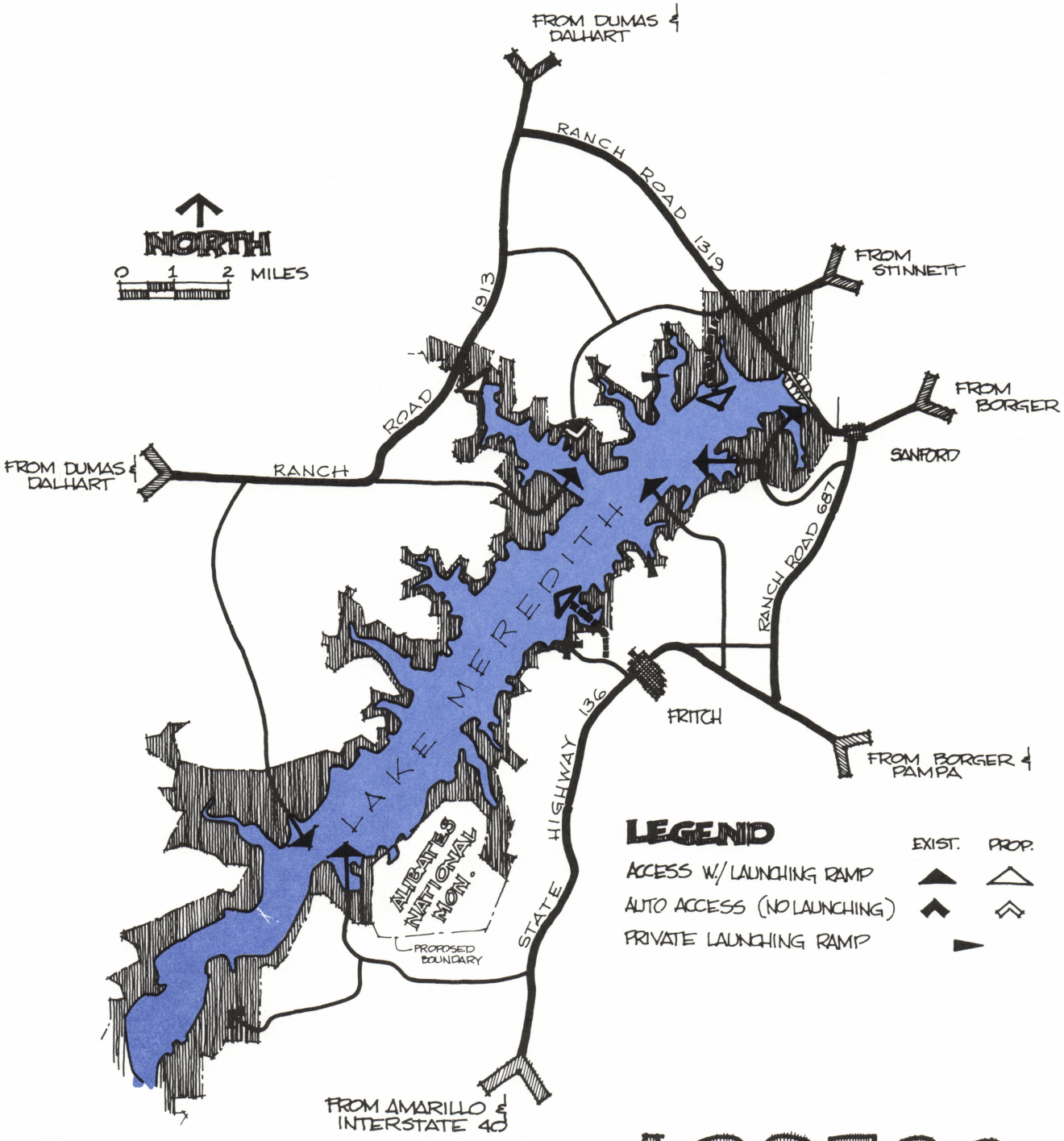
2. Interpretation should emphasize the recreation potential of the area, but should also capitalize on the fundamental natural and historical (including prehistoric) values where appropriate. Consideration should be given to interpreting the ranching and petroleum industries.

3. Establish suitable interpretive facilities at each major access point to the recreation area in a location offering good visual orientation and where there will be exposure to the greatest number of visitors.

4. The location of the recreation area where the environment has been constantly exploited is an ideal location for the development of one or more Environmental Study Areas available for use year-round. The feasibility of establishing a permanent camp for environmental education should be investigated.

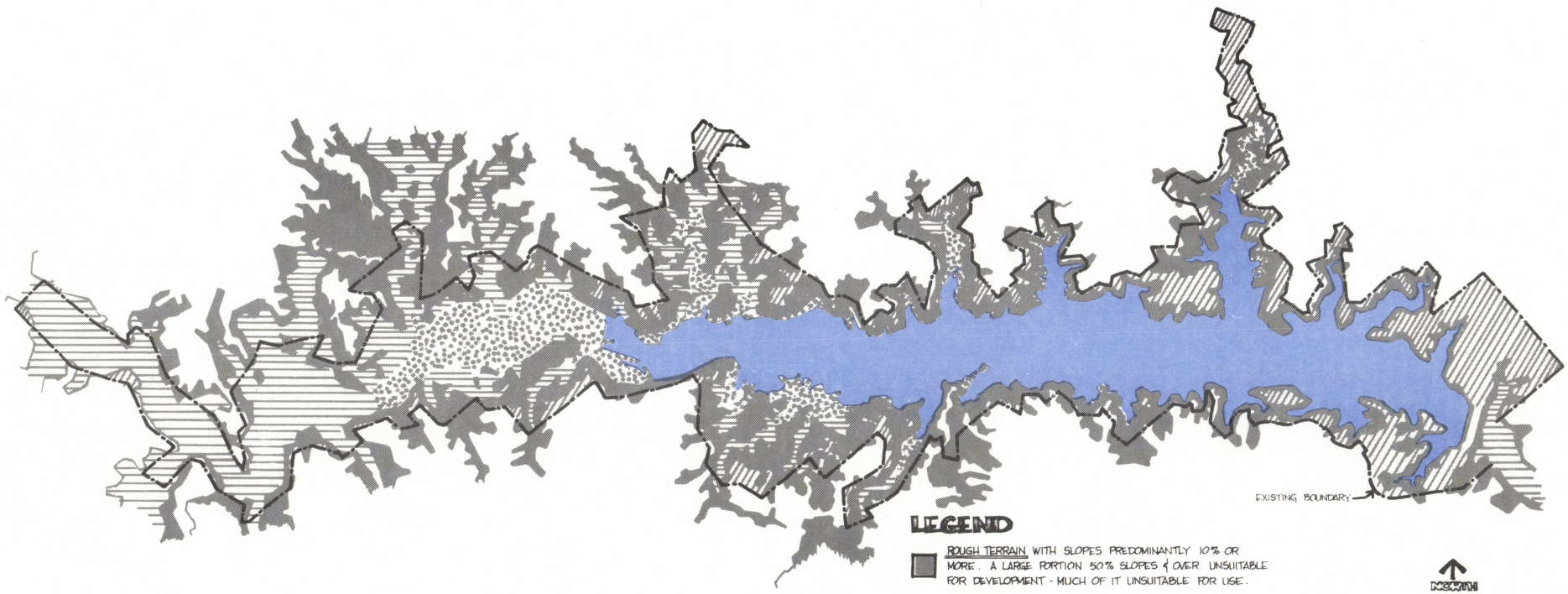


THE TEXAS PANHANDLE REGION



ACCESS

PART of the GENERAL DEVELOPMENT PLAN



LEGEND

ROUGH TERRAIN WITH SLOPES PREDOMINANTLY 10% OR MORE. A LARGE PORTION 50% SLOPES & OVER UNSUITABLE FOR DEVELOPMENT - MUCH OF IT UNSUITABLE FOR USE.

TERRAIN WITH SLOPES PREDOMINANTLY LESS THAN 10%.

CAP ROCK - HIGH LEVEL, RELATIVELY STABLE. NO DEVELOPMENT WITHIN 500' OF CANYON RIM.

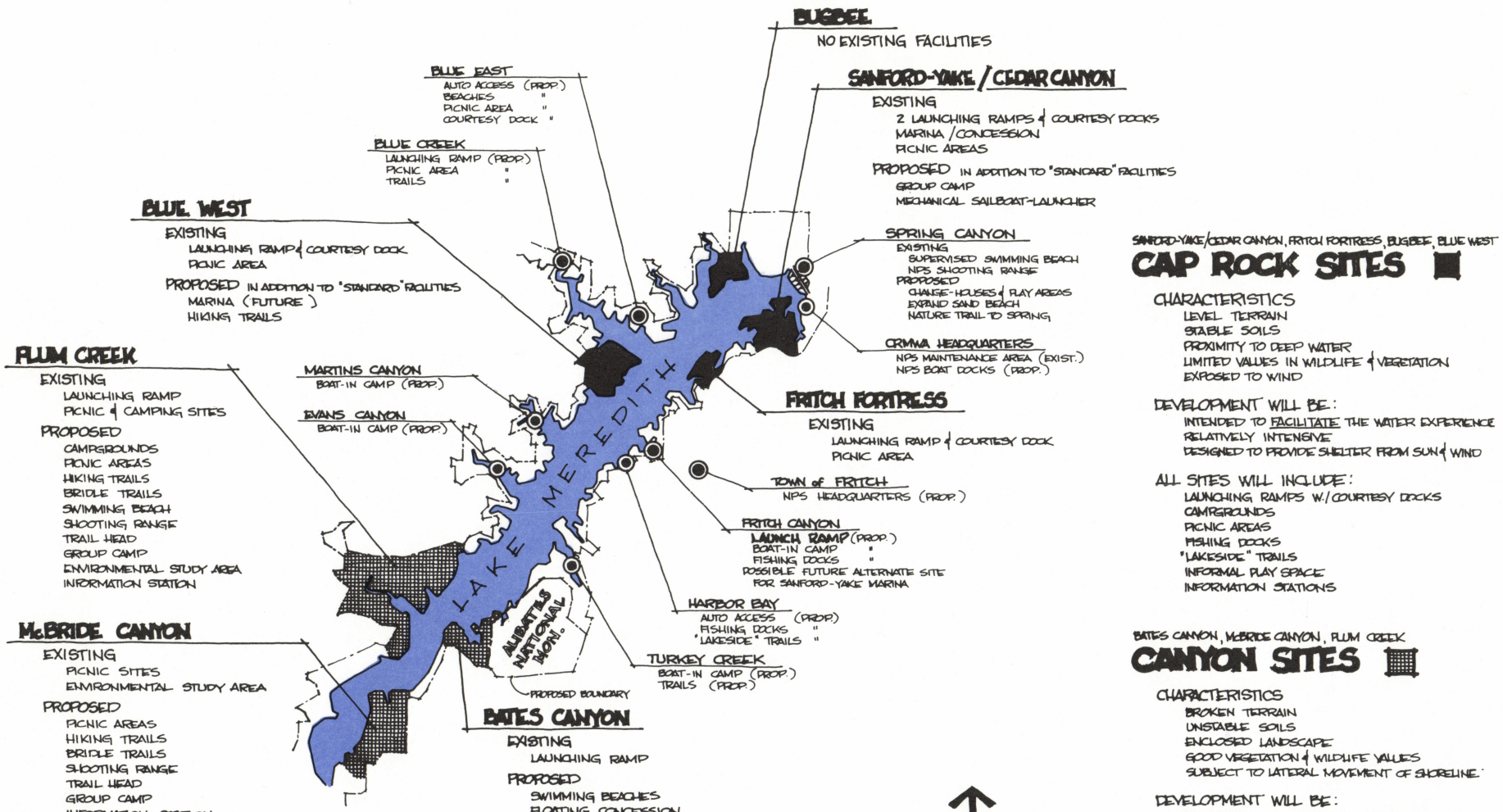
BOTTOMLAND - SHORELINE LIMITS CALCULATED FROM MAX. CONSERVATION POOL (2941.3)

BOTTOMLAND - TO BE INUNDATED, BUT PRESENTLY USABLE. CALCULATED FROM EXIST. LEVEL FEB. 1972 (APPROX. 2909)

NORTH

0 2000' 4000' 8000' 11.6'

TOPOGRAPHY



SANFORD-YAKE/CEDAR CANYON, FRITCH FORTRESS, BUGBEE, BLUE WEST

CAP ROCK SITES

CHARACTERISTICS
- LEVEL TERRAIN
- STABLE SOILS
- PROXIMITY TO DEEP WATER
- LIMITED VALUES IN WILDLIFE & VEGETATION
- EXPOSED TO WIND

DEVELOPMENT WILL BE:
- INTENDED TO FACILITATE THE WATER EXPERIENCE
- RELATIVELY INTENSIVE
- DESIGNED TO PROVIDE SHELTER FROM SUN & WIND

ALL SITES WILL INCLUDE:
- LAUNCHING RAMPS W/ COURTESY DOCKS
- CAMPGROUNDS
- PICNIC AREAS
- FISHING DOCKS
- "LAKESIDE" TRAILS
- INFORMAL PLAY SPACE
- INFORMATION STATIONS

BATES CANYON, McBRIDE CANYON, PLUM CREEK

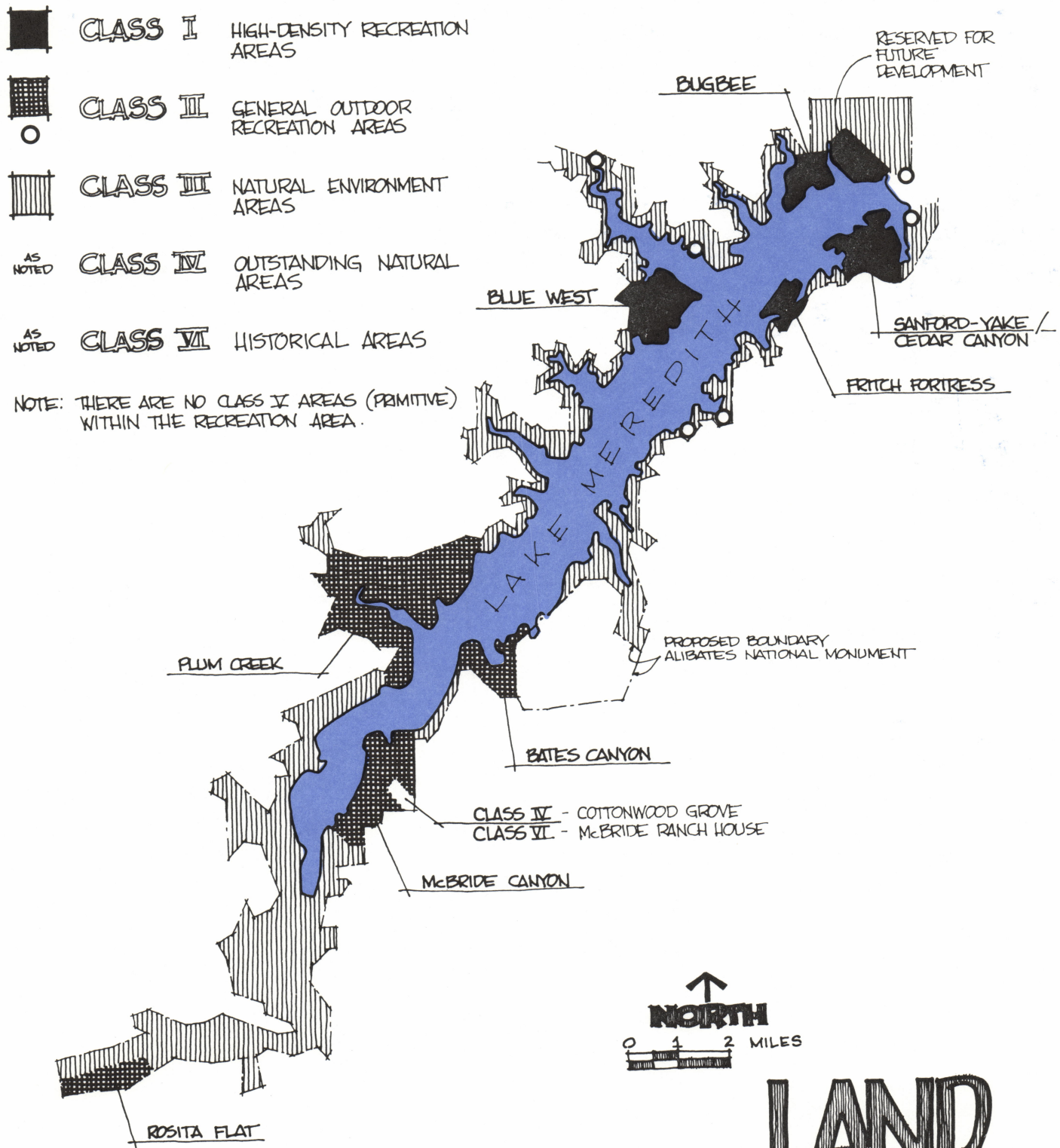
CANYON SITES

CHARACTERISTICS
- BROKEN TERRAIN
- UNSTABLE SOILS
- ENCLOSED LANDSCAPE
- GOOD VEGETATION & WILDLIFE VALUES
- SUBJECT TO LATERAL MOVEMENT OF SHORELINE

DEVELOPMENT WILL BE:
- INTENDED TO ACCOMMODATE A VARIETY OF USES
- DISPERSED
- SUBSERVIENT TO NATURAL LANDSCAPE CHARACTER

GENERAL DEVELOPMENT

II. LAND CLASSIFICATION



LAND CLASSIFICATION

III. SPECIAL RESOURCES MANAGEMENT CONSTRAINTS

The major constraint is described within the March 15, 1965, Memorandum of Agreement between the Bureau of Reclamation and the National Park Service for Administration of Certain Areas of the Sanford (Lake Meredith) Reservoir for Public Recreational Use - Canadian River Project, Texas. The explanatory statement says that the Park Service will "assume primary responsibility for public recreational use of available land and water areas of the Canadian River Project." The Bureau will be responsible for administration of the water level, dam, and all "oil and gas leases or other mineral leases on any of the lands in and adjacent to the Sanford Reservoir."

There also is a Memorandum of Understanding Concerning Wildlife Resources in National Recreation Areas between the Service and the Texas Parks and Wildlife Department. The Service recognizes State's rights to manage fish and wildlife, including the necessity for the state to review all wildlife control plans of the Service. Other mutual agreements are discussed.

IV. NATURAL RESOURCE MANAGEMENT PROGRAM

Actions included in the project discussions will be divided into four types and designated in each action statement. The four types of actions are:

I. Those Actions Whose Implementation Will Have A Significant and Measurable Effect on the Environment or Are Highly Controversial.

II. Those Actions Which Will Continue Existing Maintenance

III. Those Actions Which Will Initiate New Maintenance

IV. Those Actions Which Entail Research

NATURAL RESOURCE MANAGEMENT PROGRAM

Current (1973) Natural Science RSP-WRP Program

Number	Project Title	Status
RSP		
N-1	Research on Walleye Perch	In progress by Texas Parks and Wildlife
N-2	Water Quality and Limnology	Continuing project supported by CRMWA
N-3	Herpetology of County and Lake Area	Field work completed, no report
N-4	Recreation Potential at Lake Meredith	Completed, Master Plan
N-5	Avifaunal Changes at Lake Meredith	Approved only
N-6	Mammal Survey at Lake Meredith	Approved only
N-7	Population Studies of Game Animals	Approved only
N-8	Lake Riparian Woodlands and Ecology	Approved only
N-9	Vegetation Changes Since 1800	Approved only
N-10	Lake Meredith Shore Erosion	Approved only
N-11	Vegetative Survey	Approved only
N-12	Resource Management Plan	Underway by Service
WRP		
1:65	Water Quality Study of Lake and Tributaries	Approved only

1. Project: Incomplete Natural Resources Basic Inventory

An inventory of natural resources is required by Natural Science Studies Activity Standards. Such an inventory is fundamental to planning for wise resource management. While such information has been assembled in this area, the inventory is not yet complete.

Action (Research)

Initiate research and studies of the area's natural resources, to produce species lists of biotic resources and maps of abiotic resources. Begin to assemble ecosystem map with data available and add natural science data as they become available.

Research

Several studies are needed to provide the park with a basic natural resources inventory. They are:

A. A species list of all vascular plants and all significant nonvascular plants denoting those species that are considered rare and/or endangered or of unusual size or of visitor and scientific interest.

B. Prepare a list of known fungi and bacteria in the park area.

C. A species list of all vertebrates, e.g., fish, amphibians, reptiles, birds, and mammals, and all invertebrates that are considered rare and/or endangered or of high visitor or scientific interest.

D. An inventory of all significant geologic features and processes, e.g., caves and rock systems.

E. An inventory and distribution map of major soils found within the area.

F. An inventory of all the hydrological features, e.g., perennial and intermittent streams, ponds, groundwater, and other water resources of the area.

G. Continue the water quality study of the reservoir and tributaries into the lake.

2. Project: Control of Exotic Plants

Salt cedar (Tamarix sp.) and Russian thistle (Salsola kali) are common exotics in the recreation area. Salt cedar is a threat to other phreatophytic vegetation and Russian thistle is a visual intrusion. Removal of Russian thistle is already a practice at campgrounds and picnic sites of the area.

Action (Continue Maintenance)

Continue control of exotics in most frequently used areas through normal maintenance, i.e., removal by hand-labor. Investigate the success the Western Region has had in killing salt cedar.



Fig. 2. RUSSIAN THISTLE, AN EXOTIC PLANT, THRIVES ALONG THIS ERODED BANK. LaMe Photo.

3. Project: Maintenance of Trees and Shrubs at Visitor Use Areas

High winds damage cottonwoods, junipers, elms, mulberries, and other plant species. Regular maintenance care is required to preserve shade trees and to eliminate safety hazards. Some irrigation and treatment for pests is also required for these trees.

Action (Continue Maintenance)

Continue park maintenance of trees and shrubs, including landscape planning, and coordination of services by the National Park Service Tree Crew. This project may tie in to Project 2: Control of Exotic Plants.

4. Project: Abandoned Roads, Scarred Right-of-Ways, and Random Roads

In the past, random land use by vehicles has established roads throughout the area, some of which are no longer in use. Numerous high-pressure gas lines in the area have right-of-ways remaining with the gas companies. Both of the above situations have caused scars on the land, and some of these scars have resulted in erosion. In some cases, the eroded area has then invited further use by visitors, and scarring has increased. Gas companies' drivers are also inclined to establish new roadways in a random manner.

Action (New Maintenance)

Identify roads that are not used and which do not serve a necessary purpose. Work out an agreement with gas companies and ranchers, where necessary, to refrain from using these roads. Bar visitors from the roads through the use of barricades and signing. Obliterate and reseed scars where possible. Discourage further establishment of random roads. Explain program and seek help through education of the public by interpretive programs and other public relations.



Fig. 3. SPARSELY VEGETATED LAND IS EASILY SCARRED AS THESE MOTORCYCLE TRAILS SHOW. NPS Photo (Mang).

5. Project: Control of Exotic Animals

Dog packs occasionally roam the area and may threaten the safety of area visitors.

Action (New Maintenance)

Initiate comments within interpretive programs to alert visitors to possible dangers from exotic animals. Instruct visitors to deposit all refuse in trash receptacles and refrain from burying garbage, to not attract dogs and other animals into visitor-use areas. Instruct visitors to keep household pets under physical restraint at all times. When a stray animal is captured, attempt to find the owner. If the owner cannot be found, turn the animal over to proper local government authorities.

6. Project: Vegetative Cover and Effects of Grazing

A century of grazing within the recreation area has resulted in considerable change in the ecosystem. Evidence suggests that continued cattle grazing (six grazing permits are extant) is harmful to the natural vegetation and is undesirable in view of the limited acreages involved and the heavy visitor use.

Action (Research)

Livestock are currently being excluded from areas of high visitor use since their presence is an intrusion on the scene and is not compatable with the usual visitor use. It is hoped that grazing can be completely eliminated in the future.

Research

As soon as possible, research will be initiated to study vegetative dynamics and establish benchmarks as required by Natural Science Studies Activity Standards. If research so advises, restoration action will be taken. In addition, this study should determine the area's vegetation composition and dominance and should include a vegetative map. A continuing study should determine appropriate productivity, stand composition, succession, biomass, water and nutrient needs, and other ecological parameters. These data will then provide a basis for monitoring ecological systems and changes.



Fig. 4. IN SOME PARTS OF THE AREA, GRAZING HAS BEEN CONTINUOUS FOR OVER 100 YEARS. LaMe Photo.

7. Project: Lack of Data on Use of Fire as a Management Tool

Drying of vegetation after the annual rainy season often results in an abundance of dead grass and herbs which constitute a hazard to visitors use areas. Seventeen lakeside fires occurred in 1970. Occurrence of a large fire is not likely unless under the impetus of a strong wind. Controlled burning may be a useful technique for range management at Lake Meredith at certain times of the year. However, not enough is yet known to put any plan for controlled burning into effect.

Action (Research)

Initiate research into the use of fire as a management tool for Lake Meredith Recreation Area.

Research

A fire study should be correlated with a climatic study and include the following:

For each ecosystem under consideration --

Under what conditions of climate, slope, fuel, time of year, etc., do fires usually occur?

Are periodic fires a normal part of the ecosystem, i.e., are they required for the maintenance of that ecosystem or for a particular vegetative type within the ecosystem?
If so, what is the periodicity of such fires?
What special adaptations are present in such an ecosystem?

In a fire adapted ecosystem, can there by too much fire?

What is the fire behavior -- crown, surface, etc. -- in the ecosystem?

Can wildfire smoke, heat, etc., damage neighboring plant communities?
If so, do the benefits outweigh the disadvantages?

What are the economic considerations of fighting and of not fighting natural fires?

8. Project: Control of Noxious Flies at Public Swimming Beach

During summer months, visitors are bothered by biting deer flies (Chrysops sp.) at Spring Canyon swimming beach. These flies, potential vectors of disease, breed in swampy areas where water seeps under the face of the dam; they are attracted to the Spring Canyon swimming area.

Action (Continue Maintenance)

U.S. Department of Interior approved use of Malathion for this problem in 1972. Following consultation with officials at the Canadian River Municipal Water Authority (CRMWA), and assurances that the action constituted no hazard downstream, Malathion was applied at night when visitors were not present. The action was taken during July and August when deer fly infestation is at its peak. This procedure will continue when necessary.

Fig. 5. VISITORS AT SPRING CANYON SWIMMING BEACH ARE OFTEN BOTHERED BY BITING DEER FLIES. NPS Photo (Mang).



9. Project: Control of Animals that may be Hazardous to the Public

Some of the resident animals such as rattlesnakes and skunks are attracted to human use areas and may threaten the safety of visitors.

Action (Continue Maintenance)

Since the rattlesnakes and skunks native to the area are predominately nocturnal in habit, only a minute percent of the population is ever encountered by the area's day-use visitation. Problem animals will be trapped and removed to more remote locations, and incorporate a program of reptile identification and conservation into interpretive programs. Failure to remove any considerable number of rattlesnakes from heavily used areas could create an unnecessary hazard to the area visitor. No action will increase the probability in injury and resulting liability and the likelihood of disease within the subject wildlife.

10. Project: Faunal Factors

Considerable data must be obtained if the area's wildlife is to be managed in the most effective method to conform with Service mandates and comply with Natural Science Studies Activity Standards.

Hunting is permitted in designated areas within the recreation area, subject to state and federal regulations. Seasons are established on deer, turkey, dove, quail, certain ducks, geese, and sandhill cranes. Hunting activity is increasingly heavy and, during deer and turkey seasons, has already exceeded the carrying capacity of the area's resources. Animals, including resident populations, seek refuge on adjacent ranchlands or they are shot.

Action (Continue Maintenance and Research)

Initiate research; continue documentation of out-of-ordinary faunal sightings; and continue cooperative activities with State and Federal wildlife management agencies. Broaden cooperative programs with Texas Parks and Wildlife Department to survey deer and turkey populations. Determine a hunting carrying capacity or game potential for the recreation area. Explore the possibilities of a permit system consistent with existing laws and manpower requirements. Encourage reduced publicity by Texas Parks and Wildlife on the area's game potential.

Research

A faunal study should include data gathering and analysis of distribution and abundance of animal species, population dynamics, migration, and immigration, and should be programmed in conjunction with faunal inventory IC.

11. Project: Decimation of Wildlife

Although both the Park Service and Texas Parks and Wildlife oppose unnecessary killing of animals, there is considerable poaching. Careless and wanton killing of wildlife exists throughout the recreation area. A heronry (great blue heron) has become established in Big Canyon since construction of Lake Meredith, and that heronry may be endangered. Bobcats, turkeys, and other species need protection.

Action (Continue Maintenance)

Increased patrols in Big Canyon and in other wildlife locales is necessary. Disseminate information through interpretive programs and the news media on regulations that cover protection of wildlife and penalties for killing or injuring them. Establish a preferred practice or attitude against killing of animals and communicate this preference to hunters and visitors.

12. Project: Water Resources Analysis

A thorough analysis of the water resources of the recreation area is necessary prior to sound management and decision making and to comply with requirements of the basic natural resources needs for a Basic Ecosystem Survey, NEPA-1969, and Water Quality Acts.

Action (Continue Maintenance and Research)

Initiate research and continue to monitor water resources at strategic localities and to utilize the importance of H_2O in a dry land as an important interpretive theme. Define the intended use of each watershed so water quality standards for each stream can be determined. This study should be programmed in conjunction with I,F.

Research

A water resource study should analyze at least three basic questions:

1) what are the major sources of fresh water (including potability)?;

2) what are the functions of fresh water in the ecosystem (runoff amounts, use by and importance to the basic faunal system, etc.)?; and

3) what are the threats of potential water deficiencies, pollution of water, etc.?



Fig. 6. N.Y.C. WORKER FISHES FOR LITTER IN ANNUAL CLEANUP CAMPAIGN. LaMe Photo.

13. Project: Ecosystem Analysis

The lack of complete analysis of the area's ecosystem may limit planning and decision making. This study must be made to comply with Natural Science Studies Activity Standards.

Action (Research)

Initiate research study.

Research

This all-inclusive study involves all phases of the area's natural resources and therefore is a final step in a comprehensive analysis. An ecosystem analysis involves the measurement of primary energy input into the system and energy flowthrough, including the nutrient and mineral cycles of the ecosystem.

14. Project: Depletion of Flint and Petrified Wood

Regulations state that in recreation areas it is permissible to collect small quantities of pebbles or small rocks by hand for personal use. This is a problem, since Alibates Flint is strongly desired by rockhounds and other visitors. There are deposits of petrified wood in the recreation area which are also sought by visitors. These are non-renewable resources which must be protected to the extent of present regulations.

Action (Continue Maintenance and New Maintenance)

1. Since Alibates National Monument will preserve a large amount of flint, a policy of conserving, but not preserving, flint in the recreation area will initially be followed. Continue to limit visitors to one handful of flint in accordance with existing regulations. Digging or breaking up of boulders for flint will not be permitted.

2. Continue working with, and maintaining rapport with, local rockhound clubs for their cooperation and assistance.

3. Establish study plots where the rate of depletion of flint and petrified wood can be observed through a series of photographs.

Fig. 7. MULTICOLORED FLINT FROM ALIBATES FLINT QUARRIES NATIONAL MONUMENT, ADJACENT TO LAKE MEREDITH. Texas Highway Department Photo.



15. Project: Adverse Effects of Chemical Pollutants from Adjacent Lands

The area's flora and fauna are subject to detrimental effects from activities on adjacent private lands; wind-blow herbicides, local stock spraying, and combined runoff onto parks lands and into the lake (the quality of the lake water is the responsibility of CRMWA). Adjacent ranchers are aerially spraying herbicides (2,4,5-T and Tordon) on grazing lands to kill mesquite. Average wind velocity in this locality is 12.5 mph, (20 km/hr) with frequent prolonged velocities up to 30 mph (48 km/hr).

It seems likely that these chemicals are entering the lake through runoff and are entering the food chain of park wildlife. Several species may be threatened. Golden and bald eagles and osprey winter and/or migrate through the area, and fish are a recreational resource as well as a food source.

Action (Continue Maintenance and Research)

Continue cooperation with CRMWA in combatting infiltration of hazardous or teratogenic materials into the lake, and seek cooperation of ranchers so spraying will take place when there are no winds or when they will carry chemicals away from the park. Investigate (through Regional Office assistance) potential problems that may develop from spraying of chemicals on adjacent lands. Maintain a continuing file on water quality studies performed under the auspices of CRMWA so data will be available as further effects of chlorinated phenoxyacetic (2,4,5,-T type) herbicides on humans become known. It may become necessary to take steps to cause the cessation of spraying at a later date.

Research

Cooperate with local and state institutions in studies on the effects of sprays and fertilizers on resident and migratory wildlife.

16. Project: Adverse Effects of Neighboring Real-Estate Development

Private lands on the downriver end of the lake have become targets for real-estate development, with three developments underway. Some visual impact is already present. Ingress and egress is blocked in some places where public-use potential exists. Septic tanks at these developments may be a threat to water quality of the lake.

Action (Continue Maintenance)

Support any moves by CRMWA seeking county zoning to insure orderly development on lands around the lake and maintenance of water quality for recreational use. To promote the idea of zoning, maintain friendly relationship with officials of the three counties whose lands are part of the recreation area.

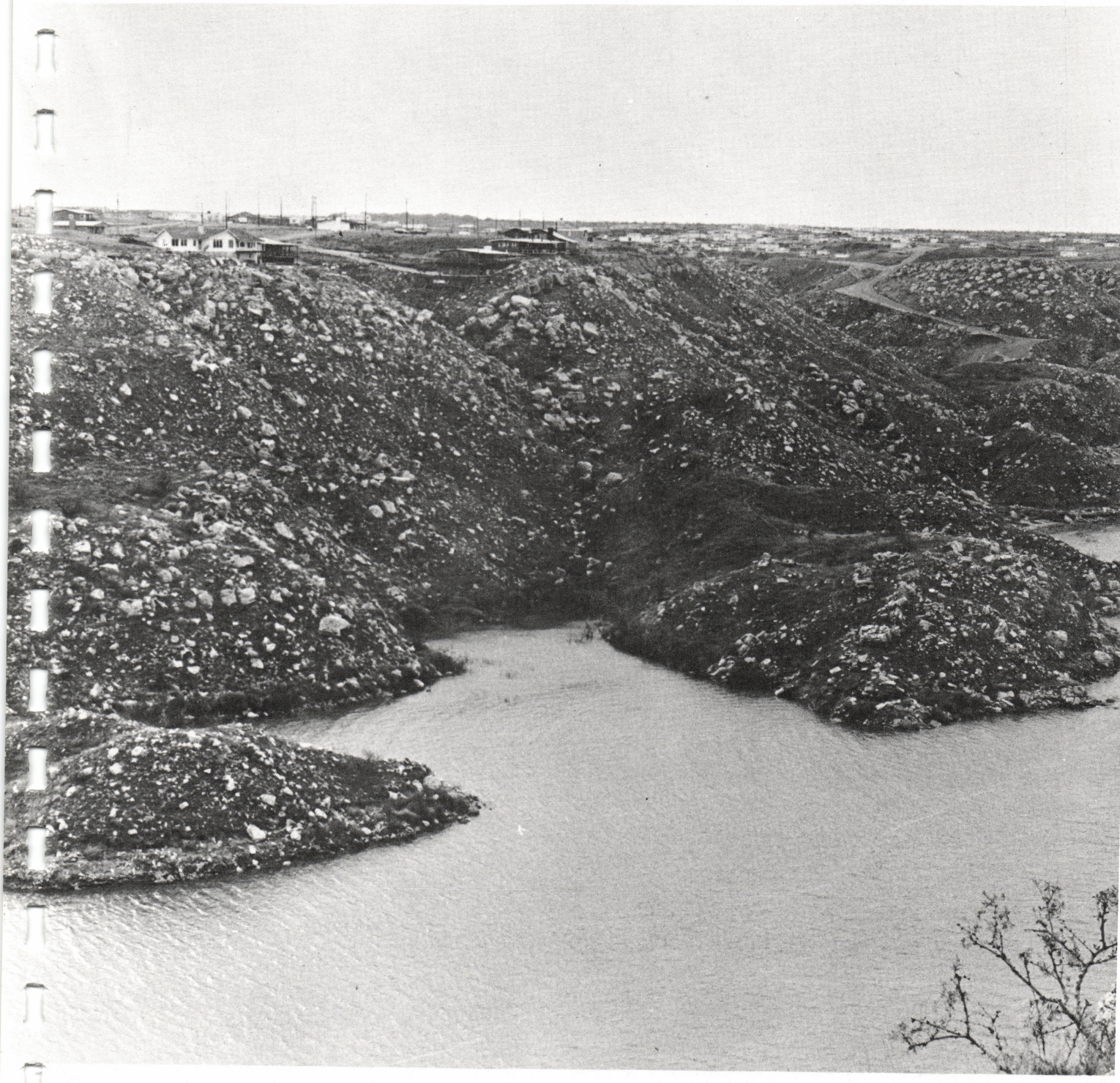


Fig. 8. REAL ESTATE DEVELOPMENT EXTENDS TO EDGE OF LAKE IN MANY PLACES. LaMe Photo.

17. Project: Protection of Harbor Facilities from Wave Action

Storms are frequent in the area, sometimes producing winds that reach velocities of 80 mph (129 km/hr.). Wave action is generated rapidly during these storms and poses a threat to permanent harbor facilities in various developed areas where these facilities are installed. This wave action also is a threat to existing interim facilities.

Action (Continue Maintenance and Research)

Continue safety precautions at developed areas. Initiate research and discussions with the Corps of Engineers and/or the Bureau of Reclamation about the water hydraulics of the situation.

Research

Through research and planning, devise an experimental model of a breakwater to protect a Lake Meredith harbor area. Use results of this model installation as basis for decisions on future installations.

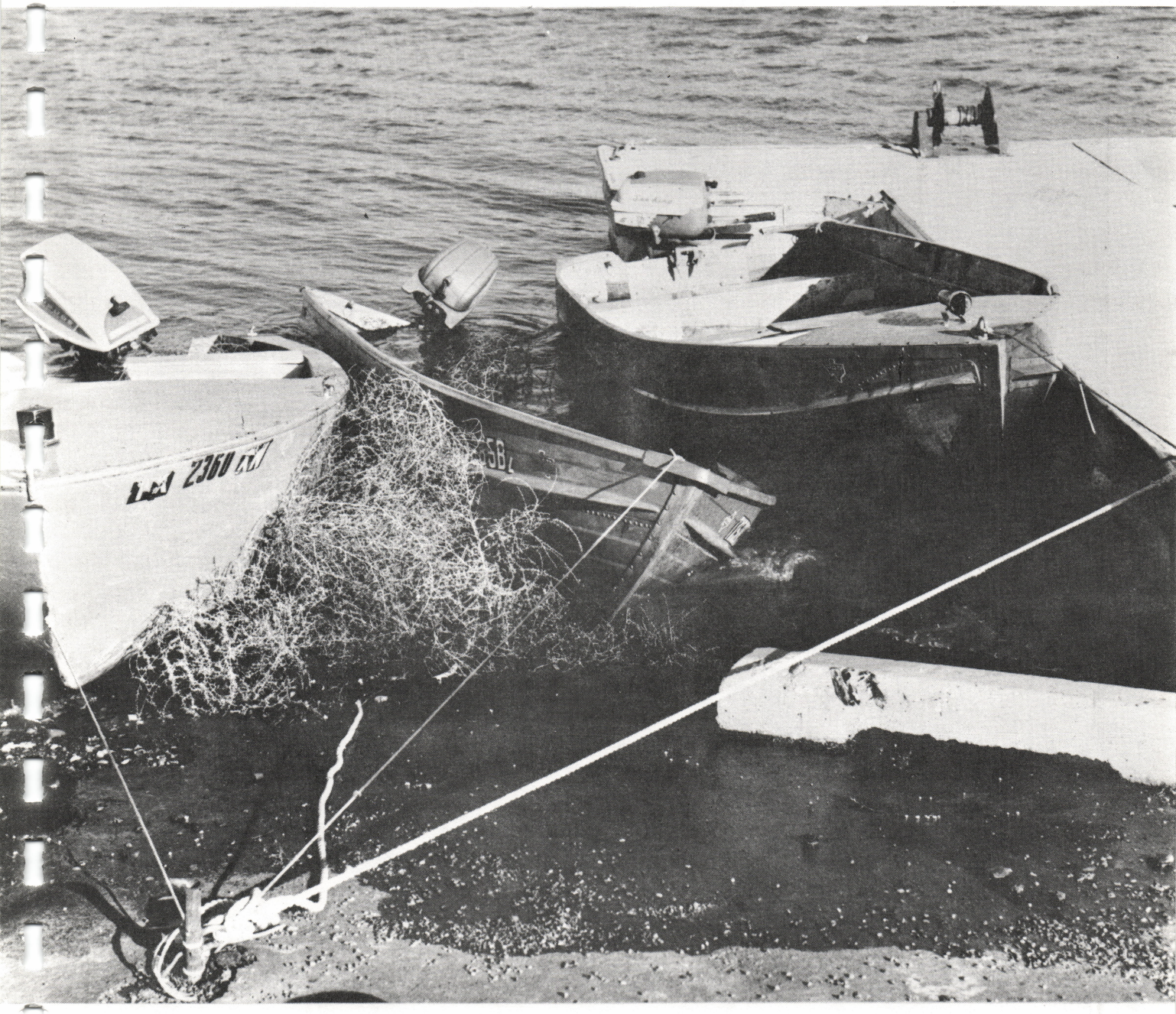


Fig. 9. TRASHED BOATS SHOW EFFECTS OF WAVE ACTION DURING RECENT STORM. LaMe Photo.

18. Project: Possible Oil and Gas Exploration in Development Areas

Mineral rights were not acquired by the Bureau of Reclamation when lands for Lake Meredith were purchased. Oil and gas exploration are continuing and may be expected to increase, since the area has been one of the world's largest gas fields. Existing wells in development areas cannot be removed until they stop producing, but oil and gas exploration or installation of new wells will be an intrusion.

Action (Continue Maintenance)

Establish liaison with the involved oil and gas companies so the National Park Service will be informed of drilling plans. Oil and gas companies will be made aware of National Park Service concern for development areas, even though construction has not yet begun. Slant drilling from outside park boundaries will be encouraged.

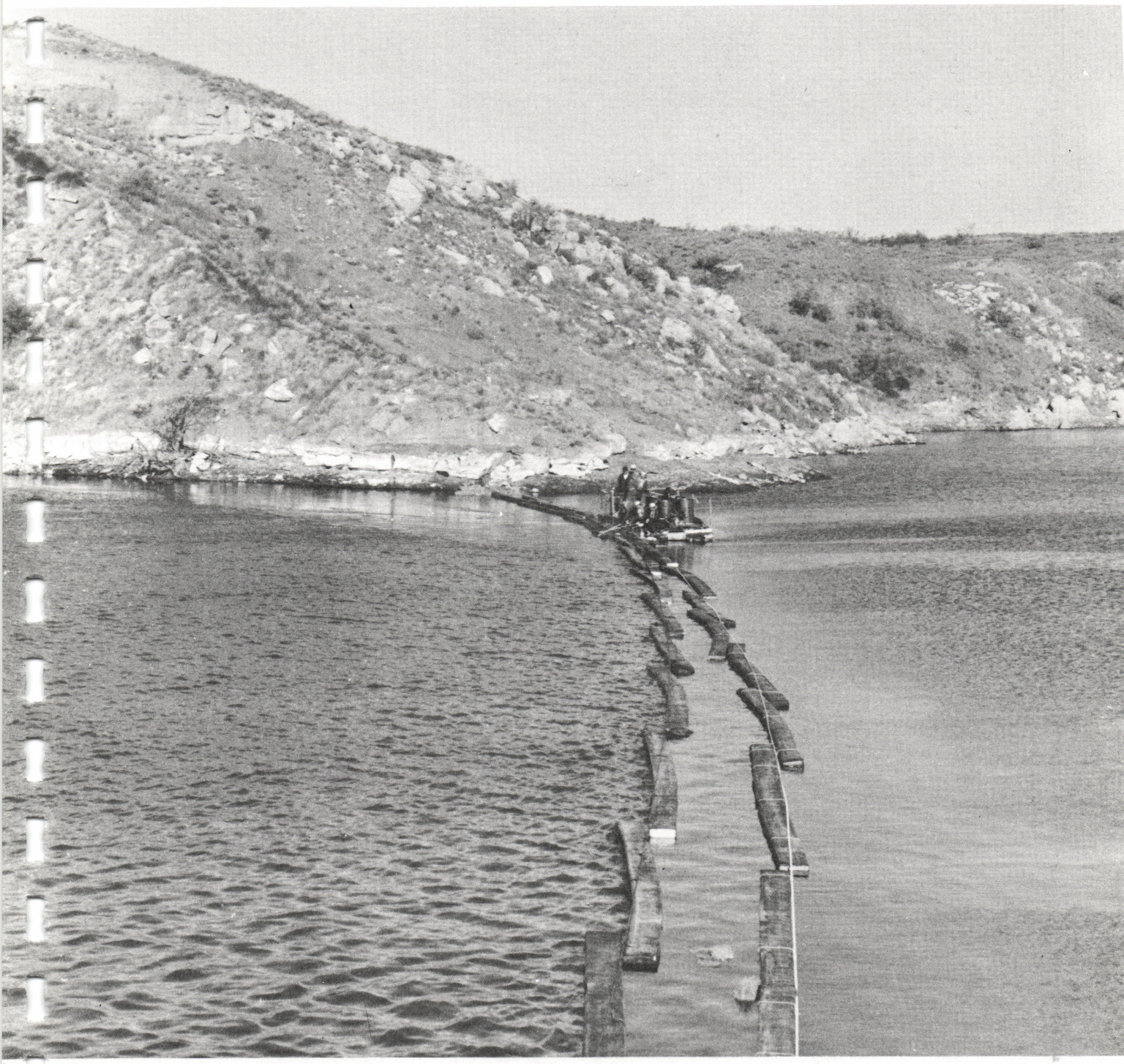


Fig. 10. LOG DAM LIMITS EFFECTS OF OIL SPILL. LaMe Photo.

V. 5-YEAR PROGRAMMING SHEETS

FOR

MAINTENANCE

AND

RESEARCH

MAINTANENCE
ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 NPS M.Y.	Year 1 Cost/ $1000	Year 2 NPS M.Y.	Year 2 Cost/ $1000	Year 3 NPS M.Y.	Year 3 Cost/ $1000	Year 4 NPS M.Y.	Year 4 Cost/ $1000	Year 5 NPS M.Y.	Year 5 Cost/ $1000	Date Submitted 10-237 10-238
		N2	Control of Exotic Plants	.1	.2	.1	.3	.1	.3	.1	.4	.1	.4	
		N3	Maint. of Trees and Shrubs/Visitor Areas	.4	1	.5	1.5	.5	1.5	.6	2	.6	2	
		N4	Aband. Roads, Right-of Ways, Random Roads	.1	.2	.2	.4	.1	.2	.1	.2	.1	.3	
		N5	Control of Exotic Animals	.05	.1	.1	.5	.1	.2	.1	.2	.1	.3	
		N8	Control of Noxious Flies	.03	.2	.03	.2	.03	.2	.03	.2	.03	.2	
		N9	Control of Hazardous Animals	.01	.05	.01	.05	.01	.05	.05	.06	.01	.06	
		N10	Faunal Factors	.02	.1	.02	.1	.02	.2	.02	.2	.02	.3	
		N11	Decimation of Wildl.	.02	.1	.02	.1	.02	.2	.02	.2	.02	.3	
		N12	Water Res. Analysis	.01	.05	.01	.05	.01	.05	.01	.06	.01	.06	
		N14	Depletion of Flint and Petrified Wood	.02	.1	.04	.2	.04	.2	.04	.4	.1	.2	
		N15	Adverse Effects of Chem. Pollutants/Adj. Lands	.01	.05	.01	.05	.01	.05	.01	.06	.01	.06	
		N16	Adverse Effects of Neigh. RealEstate Development	.01	.05	.01	.05	.01	.05	.01	.06	.01	.06	
		N17	Prot. Harbor Facilities from Wave Action	.01	.05	.01	.05	.01	.05	.01	.06	.01	.06	
		N18	Oil/Gas Exploration	.01	.05	.01	.05	.01	.05	.01	.06	.01	.06	

RESEARCH
ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 NPS M.Y.	Year 1 Cost/ $1000	Year 2 NPS M.Y.	Year 2 Cost/ $1000	Year 3 NPS M.Y.	Year 3 Cost/ $1000	Year 4 NPS M.Y.	Year 4 Cost/ $1000	Year 5 NPS M.Y.	Year 5 Cost/ $1000	Date Submitted 10-237 10-238
	1	1F	Inv. Hydrological Features		1		1		1					1/74
	2	12	Water Resources Analysis		3		3		3					1/74
	3	1E	Inv. and Distr. of Major Soils				2.5							1/74
	4	1A	List of Vasculat and Sign. Nonv. Plants						3.5		3.5			1/74
	5	1C	List of Vertebrates						3		3			1/74
	6	1D	Inv. Sign. Geologic Features											1/74
	7	1B	List of Known Fungi and Bacteria											1/74
	8	17	Protection of Harbor Facilities											1/74
	9	6	Vegetative Cover and Effects of Grazing											1/74
	10	10	Faunal Factors											1/74
	11	13	Ecosystem Analysis											1/74
	12	7	Fire as A Management Tool											1/74

VI. OVERVIEW

The following is a review of all actions proposed within the Lake Meredith Recreation Area Natural Resources Management Plan, and outlined within the four categories described within the Management Plan.

I. THOSE ACTIONS WHOSE IMPLEMENTATION WILL HAVE A SIGNIFICANT AND MEASURABLE EFFECT ON THE ENVIRONMENT

No such actions are planned. Each project included in the Resource Management Program was considered on its own merit, and in every case, those actions planned do not have a significant and measurable effect on the environment. All of the actions fall into categories II., III. or IV.

II. THOSE ACTIONS WHICH WILL CONTINUE EXISTING MAINTENANCE

1. Natural Science Project # 2 - CONTROL OF EXOTIC PLANTS: Salt cedar (Tamarisk sp.) and Russian thistle (Salsola kali) are exotic plants which are a visual intrusion on the scene, and salt cedar is a threat to other phreatophytic vegetation. These exotics will continue to be removed by hand labor.

2. Natural Science Project # 3 - MAINTENANCE OF TREES AND SHRUBS AT VISITOR USE AREAS: High winds damage trees and other plants and periodic trimming and maintenance will be continued. These actions are necessary to preserve shade trees and eliminate safety hazards.

3. Natural Science Project # 5 - CONTROL OF EXOTIC ANIMALS: Dog packs occasionally roam the area and may threaten the safety of area visitors. This project includes the instruction of visitors on proper disposition of refuse, maintenance of pets under restraint, and providing for the return or disposition of stray animals in an acceptable manner.

4. Natural Science Project # 8 - CONTROL OF NOXIOUS FLIES AT PUBLIC SWIMMING BEACH: During summer months, visitors are bothered by biting deer flies (Chrysops sp.) at Spring Canyon swimming beach. In 1972 the U. S. Department of Interior approved the use of the insecticide Malathion to alleviate this problem. The Resource Management Plan calls for the use of this material when necessary to control these insects.

5. Natural Science Project # 9 - CONTROL OF ANIMALS THAT MAY BE HAZARDOUS TO THE PUBLIC: It is a standard practice of the National Park Service to capture and remove animals that may be hazardous to the public. Although animals like rattlesnakes and skunks are primarily nocturnal, those animals which pose a potential danger to the public will be removed to more remote locations.

6. Natural Science Project # 11 - DECIMATION OF WILDLIFE: Some poaching exists on the recreation area, and wildlife that is normally protected may suffer during hunting seasons. This project calls for two actions to alleviate the problem: 1) increase the number of patrols in Big Canyon and other areas of wildlife; 2) develop a visitor education program to inform the public about the desirability of maintaining wildlife, protection of wildlife, and penalities for illegal action.

7. Natural Science Project # 16 - ADVERSE EFFECTS OF NEIGHBORING REAL-ESTATE DEVELOPMENTS: This project is intended to support CRMWA in county zoning plans to insure orderly development of lands around the lake and maintain water quality. Liaison is planned with county officials of the three counties whose lands are part of the recreation area.

8. Natural Science Project # 18 - POSSIBLE GAS AND OIL EXPLORATION: This project is essentially a public relations oriented project in which liaison will be maintained between the NPS and gas and oil companies. It is hoped that this liaison will promote concern for ecological and esthetic values in further gas and oil development. The possibility of slant drilling from outside the park boundaries will be encouraged.

III. THOSE ACTIONS WHICH WILL INITIATE NEW MAINTENANCE

1. Natural Science Proposal # 4 - ABANDONED ROADS, SCARRED RIGHT-OF-WAYS, AND RANDOM ROADS: This proposal seeks to identify roads that are not in use and which do not serve a necessary purpose. Local ranchers and gas companies will be requested to refrain from using these roads and visitors will be excluded by the use of barricades and signs. Road scars will be obliterated and reseeded where possible. This program will be explained to the visitor and their aid enlisted by means of interpretive programs.

2. Natural Science Proposal # 14 - DEPLETION OF FLINT AND PETRIFIED WOOD: Lake Meredith regulations state that it is permissible to collect small quantities of flint for personal use. These are non-renewable resources which must be protected to the extent of present regulations. Three actions will be initiated to conserve this resource: 1) visitors will be permitted one handful of flint in accord with existing regulations, 2) the Park Service will continue to work with and maintain rapport with local rockhound clubs, 3) study plots will be established to determine the rate of flint and petrified wood loss.

IV. THOSE ACTIONS WHICH ENTAIL RESEARCH

1. Natural Science Project # 1 - INVENTORY OF NATURAL RESOURCES: This project calls for an inventory of natural resources and is

thought to be necessary for wise planning in the recreation area. This project will entail inventories and lists of the hydrological features, major soils, significant geological features and process, and plant and animal species.

2. Natural Science Project # 6 - VEGETATIVE COVER AND EFFECTS OF GRAZING: Project to eliminate livestock grazing, initiate research to study vegetative dynamics, and establish benchmarks to monitor recovery of vegetation and provide a warning system of future vegetative changes.

3. Natural Science Project # 7 - LACK OF DATA ON USE OF FIRE AS A MANAGEMENT TOOL: There is abundant evidence that fires have been a component of grassland ecology since long before the advent of the European. This project proposes to initiate research, primarily through library research and review of studies conducted elsewhere, to determine the role of fire in the Lake Meredith ecosystem, and to help determine if fire can be a useful tool in grassland management there.

4. Natural Science Project # 10 - FAUNAL FACTORS: This project calls for research on ways to better manage the local animal populations. It also addresses itself to a broader cooperative program with the Texas Parks and Wildlife Department ot monitor deer and turkey populations and help to determine hunter carrying capacity for the recreation area.

5. Natural Science Project # 12 - WATER RESOURCES ANALYSIS: This project calls for research on water sources, potential water deficiencies and pollution, and general accumulation of data on water as a natural resource.

6. Natural Science Project # 13 - ECOSYSTEM ANALYSIS: This is an all-inclusive analysis of all phases of the area's natural resources. This project cannot be completed until considerable more data is accumulated. Essentially, an ecosystem analysis involves the measurement of the primary energy input into the system and the energy flow of that system.

7. Natural Science Project # 15 - ADVERSE EFFECTS OF CHEMICAL POLLUTANTS FROM ADJACENT LANDS: This project entails strengthening relations with adjacent ranchers to assure that biocides used in the vicinity will be used in the least detrimental way possible. The Canadian River Municipal Water Authority (CRMWA) has the responsibility of monitoring the water quality in Lake Meredith, and the NPS will keep files on water quality data and cooperate with CRMWA and local and state institutions to investigate the effects of sprays and fertilizers on resident and migratory wildlife.

8. Natural Science Project # 17 - PROTECTION OF HARBOR FACILITIES FROM WAVE ACTION: This project calls for the development of an experimental model of a breakwater to protect a harbor area. Discussions with the Corps of Engineers and/or the Bureau of Reclamation are planned to utilize their expertise in this area.

DETERMINATION: It is determined that all actions above are maintenance and research in character and do not significantly effect the environment or cause controversy. Therefore, in accordance to the following paragraph of "Guidelines for the Preparation and Review of Environmental Assessments and Statements" (National Park Service, July 29, 1974, pg. 6).

> "Based on an overview of all actions affecting the environment, the Responsible Official may determine that many plans, projects, and operational decisions have negligible potential to cause controversial or significant environmental impact and therefore do not require preparation of environmental assessments."

No Environmental Assessment will be prepared.

Recommended by: Robert D. Warner Dec. 5, 1974
Chief Scientist, Southwest Region

Concurred by: John W. Henneberger December 10, 1974
Associate Regional Director, Professional Services

Approved by: [signature] 12/12/74
Regional Director, Southwest Region

VII. APPENDICES

APPENDIX A

CONSTRAINT DOCUMENTS

These documents are available either at the Southwest Regional Office or the Superintendent's Office at Lake Meredith.

APPENDIX B

COMPLETED RESEARCH

There are no completed manuscripts in natural sciences for Lake Meredith. Several research projects are underway, as per "Natural Resource Management Program" (RSP) listing.

The area does have a mimeographed bird checklist for the total area, and checklists of birds, mammals, and plants for McBride Canyon.

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1963 Field Trip, September 14, 1963, Alibates Flint Quarries, Alibates Indian Ruin, Santa Fe Trail, Sanford Dam. Unpublished Ms. Panhandle Geological Society.

APPENDIX C

COLLECTIONS AND LOCATIONS

None in natural sciences.

APPENDIX D

SPECIFIC MANAGEMENT PLANS

* INTERIM COOPERATIVE AQUATIC RESOURCES MANAGEMENT PLAN

SANFORD RECREATION AREA, TEXAS
1969

* Copy available at either Southwest Regional Office or Office of Superintendent of Lake Meredith.

APPENDIX E

ANNUAL REVIEW, CHANGES AND DATES

The Resource Management Plan will be reviewed annually by the Superintendent and the Regional Natural Resources Management Plan Coordinator. Necessary changes will be initiated at the area for approval of the General Superintendent and the Regional Director.