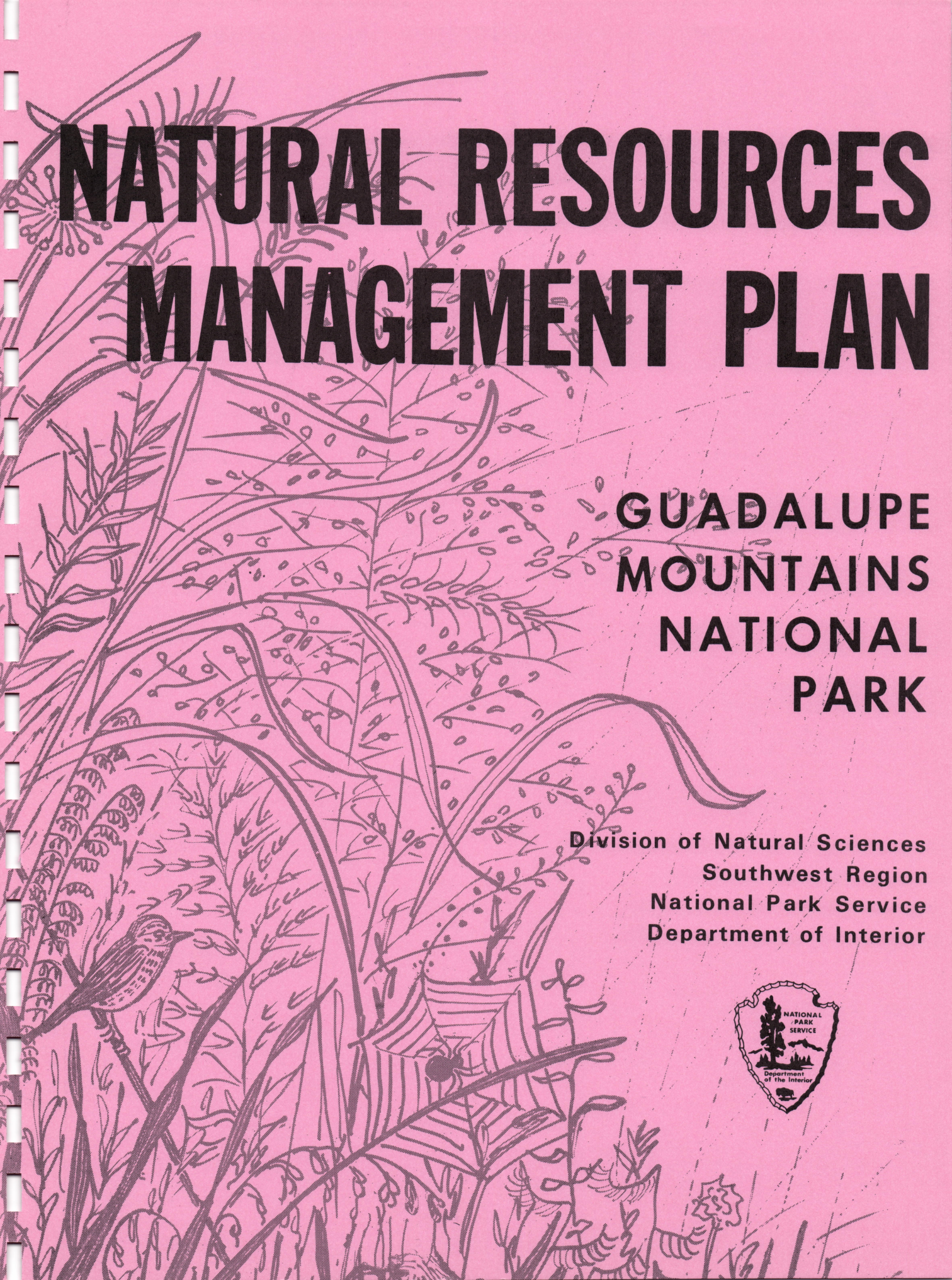
NATURAL RESOURCES MANAGEMENT PLAN

GUADALUPE MOUNTAINS NATIONAL PARK

Division of Natural Sciences
Southwest Region
National Park Service
Department of Interior



NATURAL RESOURCES MANAGEMENT PLAN

FOR

GUADALUPE MOUNTAINS NATIONAL PARK

January
1975

Prepared by: Guadalupe Mountains National Park 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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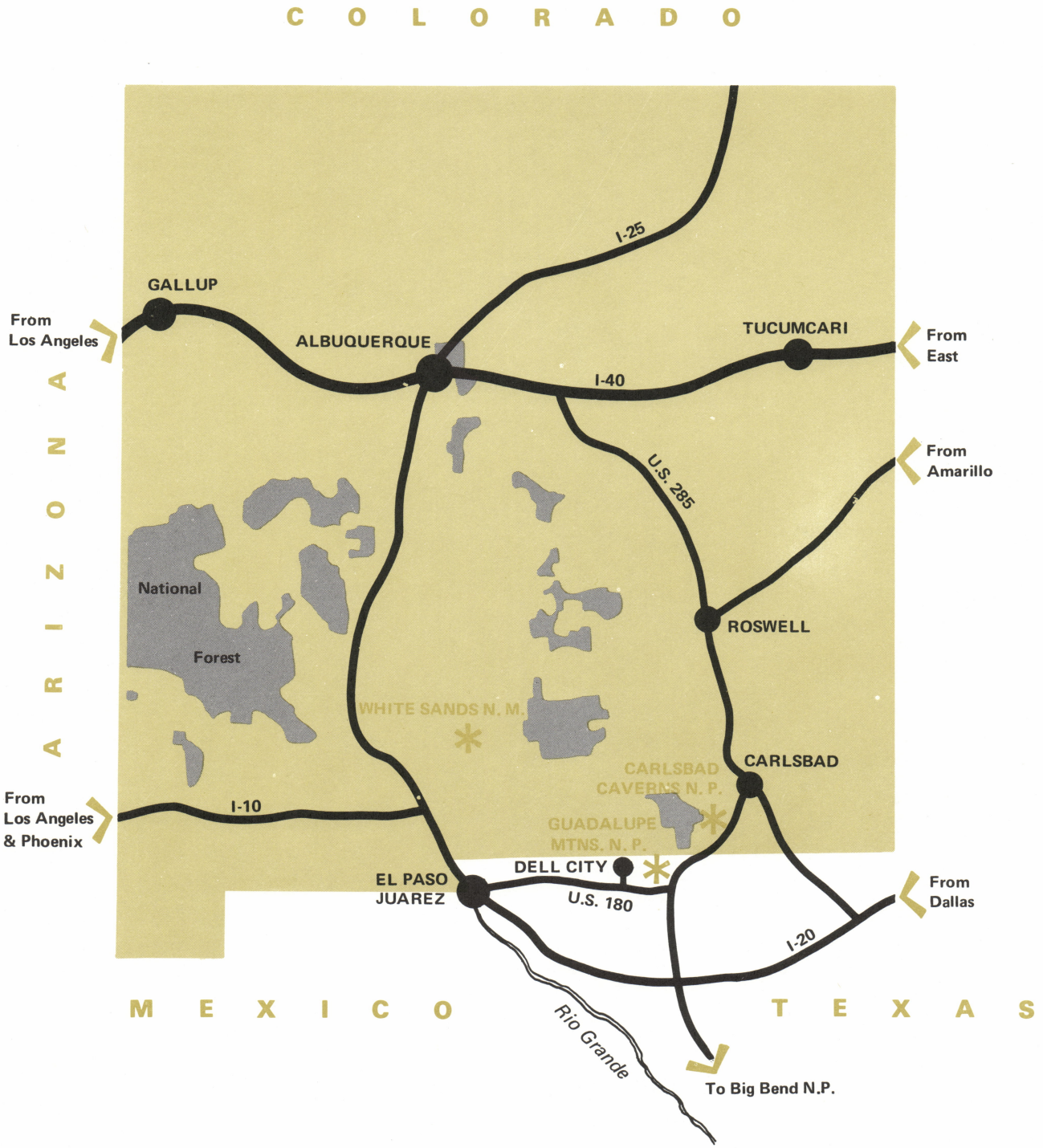

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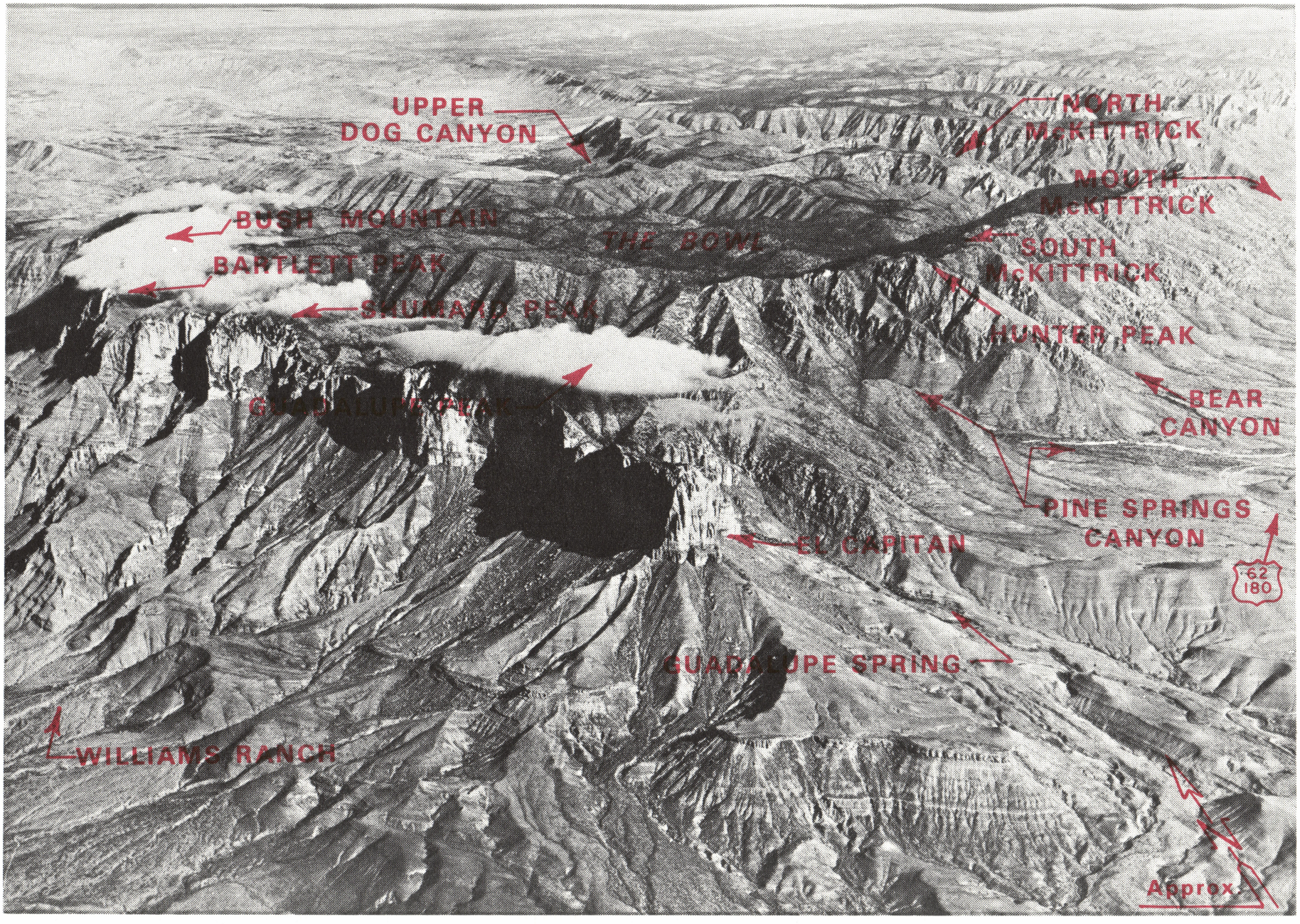


GUADALUPE MOUNTAINS
NATIONAL PARK, TEXAS

Photo courtesy of
Muldrow Aerial Surveys Corp.

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

To achieve the purpose for which Congress authorized the park, planning for the management and development of the park will be guided by the following objectives.

Visitor Use

The features which justified the establishment of the park, its exceptional scientific values and outstanding scenery, should be made available to the public through a variety of educational and inspirational experiences. Accordingly, all visitors should be offered the following opportunities:

To see the Permian reef where it is exposed in cross section at the mouth of McKittrick Canyon.

To go to the top of the escarpment near The Bowl in order to see into McKittrick Canyon.

To observe the relict forest.

To reach a strategic high point such as Guadalupe Peak where a 360-degree view provides an extraordinary perspective of the park.

The mode or modes of access must be convenient and within the physical capabilities and financial means of the majority of visitors. Consideration should be given to the many potential wilderness opportunities elsewhere within the park for hiking, riding, and climbing.

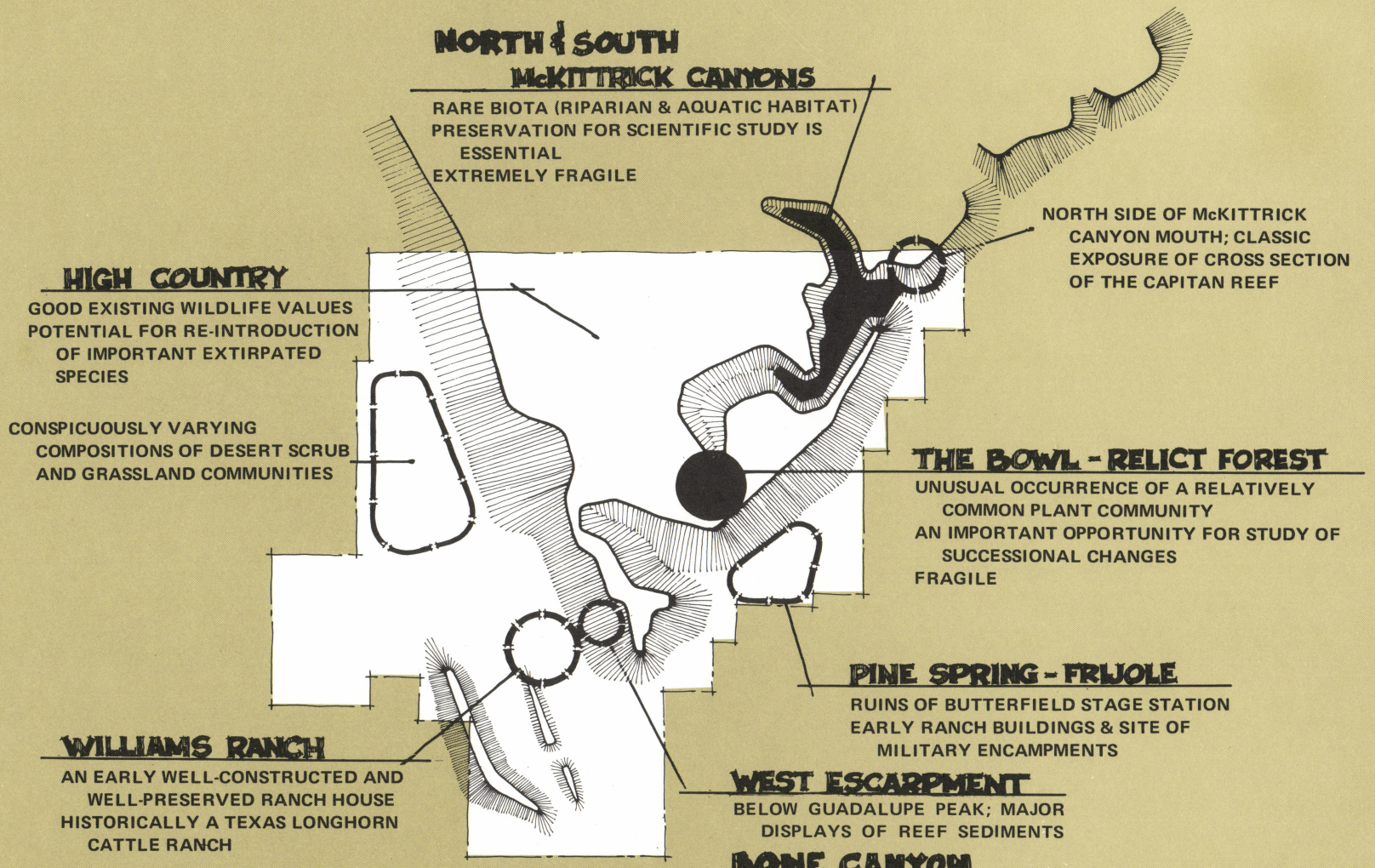
Interpretation will tell the geologic story of the Permian reef and describe the unique ecosystems that are of special interest. These several stories could logically be connected by revelation of the delicate ecological balances which are particularly significant in this park. Interpretation of the historical values such as the Indian use of the area, the story of the Butterfield Trail, and ranching operations, should be included and probably related to the harsh - by human standards - environment.

To further the purpose for which the park was authorized, the Service should seek appropriate means to facilitate the use of park resources by visiting scientists and students.

Visitor use of the park will be seriously impeded until motels, restaurants, and campgrounds become available within a convenient distance. Because it contains no existing facilities, this park offers an excellent opportunity for an enlightened approach to meeting essential visitor needs while maintaining a regard for park values.

Resource Management

In those areas where competent scientific authority recommends that the paramount value consists of rare or unique species or ecological assemblages, a Research Natural Area may be proposed and designated. In such designated



SCIENTIFIC & INTERPRETIVE VALUES

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MILES

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sites there shall be no development or conflicting use introduced until it is conclusively demonstrated that such proposed development or use will have no significant adverse effects upon the locale's life-forms and their inter-relationships. Such areas presently known to exist are found in localized sites in North McKittrick Canyon, South McKittrick Canyon, and The Bowl.

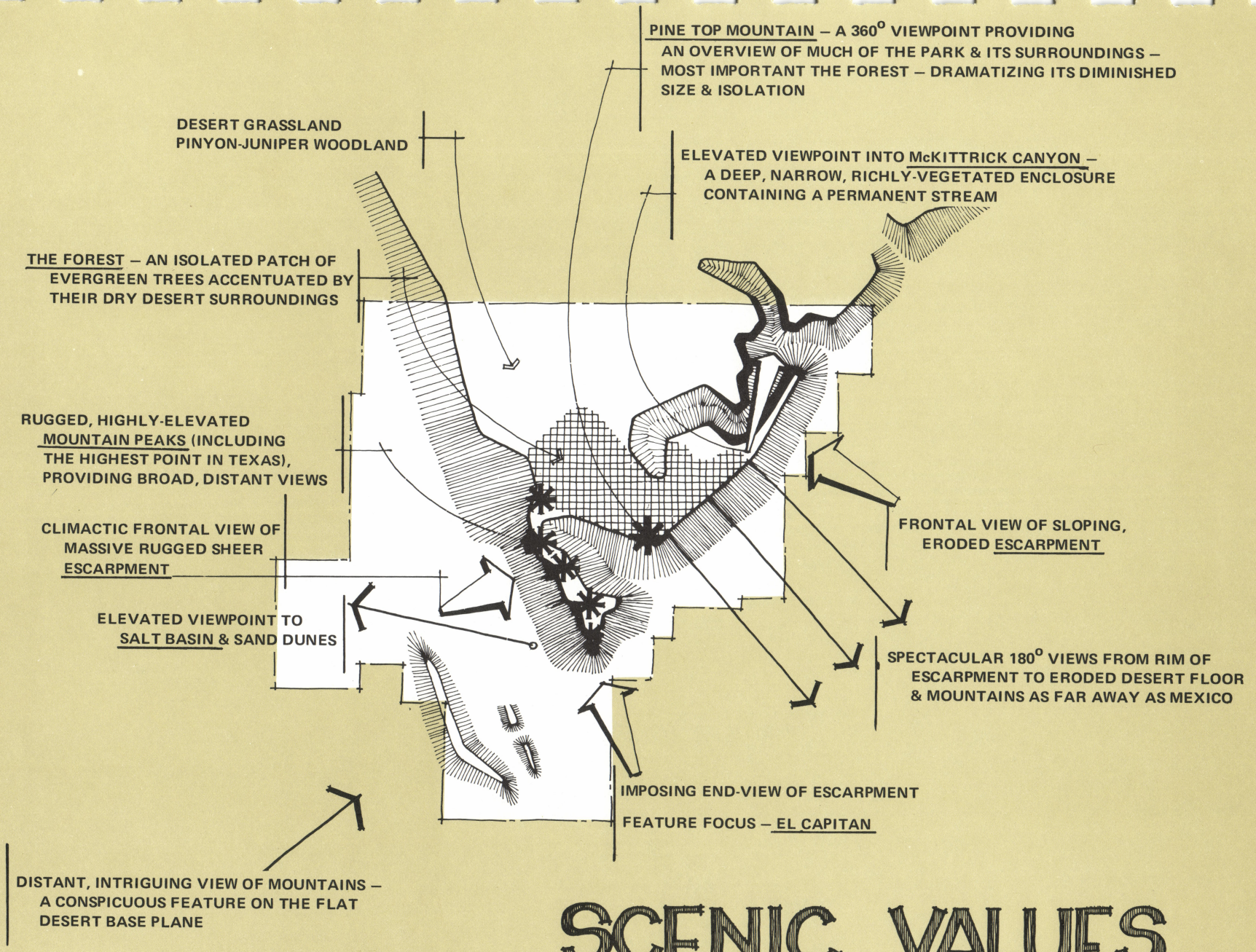
Isolated pockets of moisture-loving plants, such as at Smith Spring and elsewhere around springs and seeps, must be perpetuated and protected from encroachment by park developments. The water needs of native plants and animals in these isolated communities must be satisfied before water is drawn for park development. In this regard, where pumping is proposed for a location some distance from important park resources, its indirect effect on the level of the water table and on springs should be carefully studied.

Congress sought to protect the natural values of South McKittrick Canyon by including it in the park. The same concern was expressed for North McKittrick Canyon; Congress, however, left the upper portion within Lincoln National Forest, with the recommendation that there be very close cooperation between the Forest Service and the National Park Service in preserving, as nearly as possible, its natural condition for scientific study, and for the visitors' benefit. It is generally agreed that these canyons cannot stand heavy use. To assure that the intent of Congress is carried out and that pristine conditions prevail, water sources must be protected and non-native plants and animals controlled or removed. Development must be consistent with the wilderness atmosphere. Vigorous efforts will be made to enter into a cooperative agreement with the U.S. Forest Service on the management of North McKittrick Canyon.

The relict forest in The Bowl is highly prized by ecologists and other students of the natural sciences who caution that heavy visitor use could be destructive. The forest is a fire subclimax community which would lose its present characteristics if fire were completely excluded. This small area should be managed to ensure its value as a biological benchmark for scientific study and as a living museum exhibit for the edification of the layman.

The open landscape, characteristic of much of the park, is particularly susceptible to visual intrusions and the vegetation of this arid land is easily scarred and slow to heal. These conditions require the greatest care in the placement of structures and the conservation of the soil and plant cover. In this connection, there is a consensus that the escarpments, which are visible for long distances, should be protected from development which would mar the prospect from the surrounding base areas. Likewise, the view from the escarpment top should be conserved; the outlying desert and the backcountry are the prominent features of the landscape as seen from the park's high points.

To the extent that is ecologically feasible, the area should be restored to its prominence as a wildlife habitat. In this regard, the reestablishment of desert bighorn and harlequin quail, among other species, should be considered. Some species will be encouraged, and others, such as mule deer, may



SCENIC VALUES

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require population controls to achieve ecological balance. Toward the end of the habitat restoration process, human encroachments should be neutralized to the extent practicable.

Representations of the aquatic ecosystem and terrestrial ecosystem in certain portions of McKittrick Canyon, with the relicts of the Pleistocene, are suitable for designation as research natural areas. Similarly, some part of the limber pine, Douglas fir, and ponderosa pine forest in The Bowl might qualify for the same designation.

Archeological and historical resources, including cavalry encampment sites and the environs of the Williams Ranch, should be protected and considered for appropriate stabilization or restoration. The Butterfield Stage Station site should be preserved and interpreted.

General

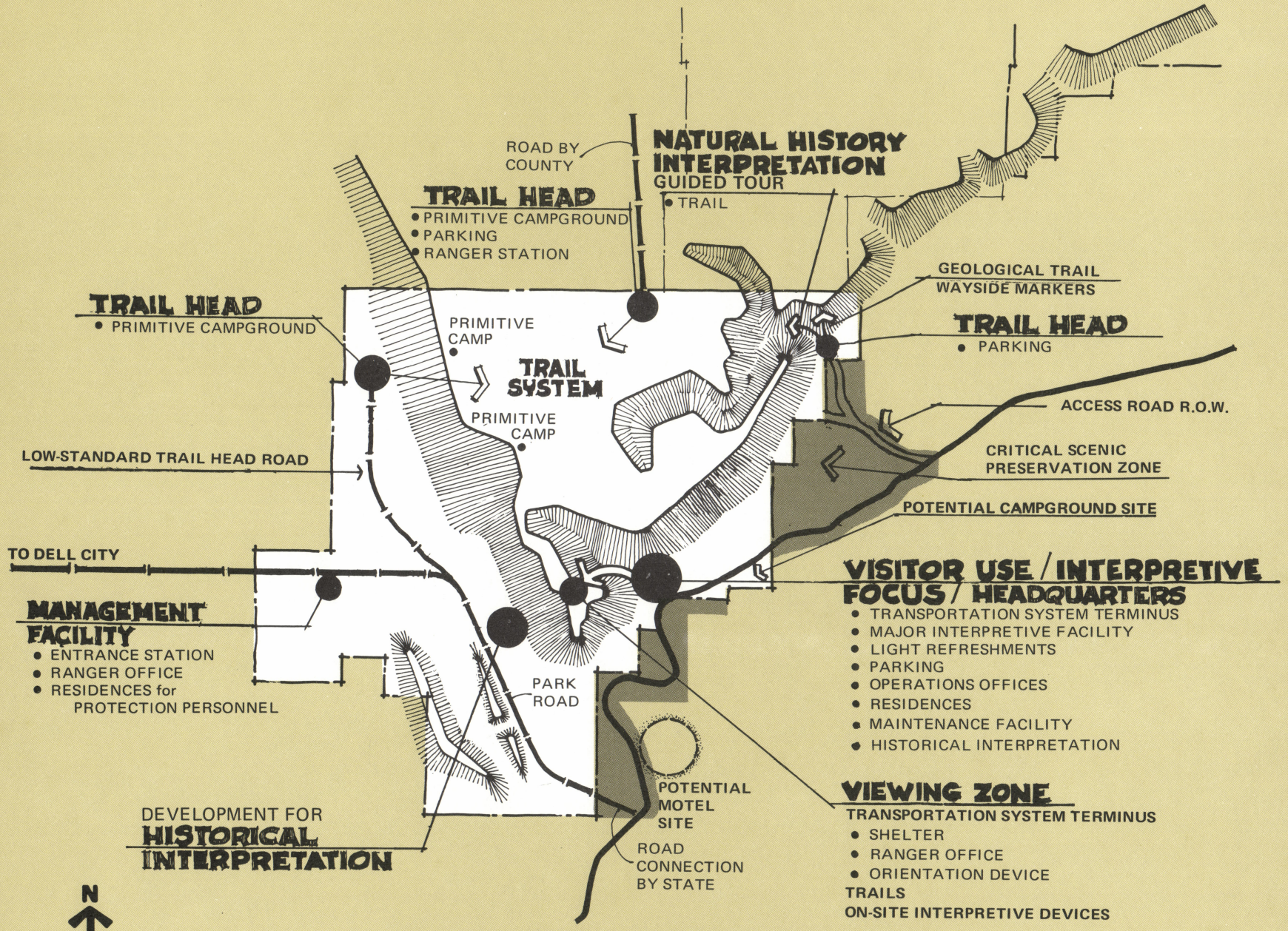
Guadalupe Mountains National Park will be managed for use and enjoyment on a year-round basis. Because the park is traversed by a U.S. highway, visitor interest may be extended over a long period of the day during vacation periods.

Guadalupe Mountains and Carlsbad Caverns National Parks will both be administered by the Carlsbad Caverns superintendent and his staff. Adequate headquarters must be located to serve both parks effectively and must be convenient for the work force. The site must not intrude on the park scene.

The U.S. Highway 62-180 right-of-way through the park is managed by the Texas Highway Department. It is important that this route be maintained as though it were a park road in order to provide an appropriate visual experience for travelers through this section of the park.

South of the park, U.S. 62-180 passes through an exceptionally scenic stretch with dramatic views of El Capitan. This section includes a State roadside rest and picnic area and a State interpretive marker. It is probably the most interesting part of the drive through the region. This impressive approach to the park should be protected from incompatible development.

The park's relationship to Carlsbad Caverns National Park, Lincoln National Forest, and Bureau of Land Management lands should be recognized and considered in the light of planned developments for these other areas.



GENERAL DEVELOPMENT

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II. LAND CLASSIFICATION

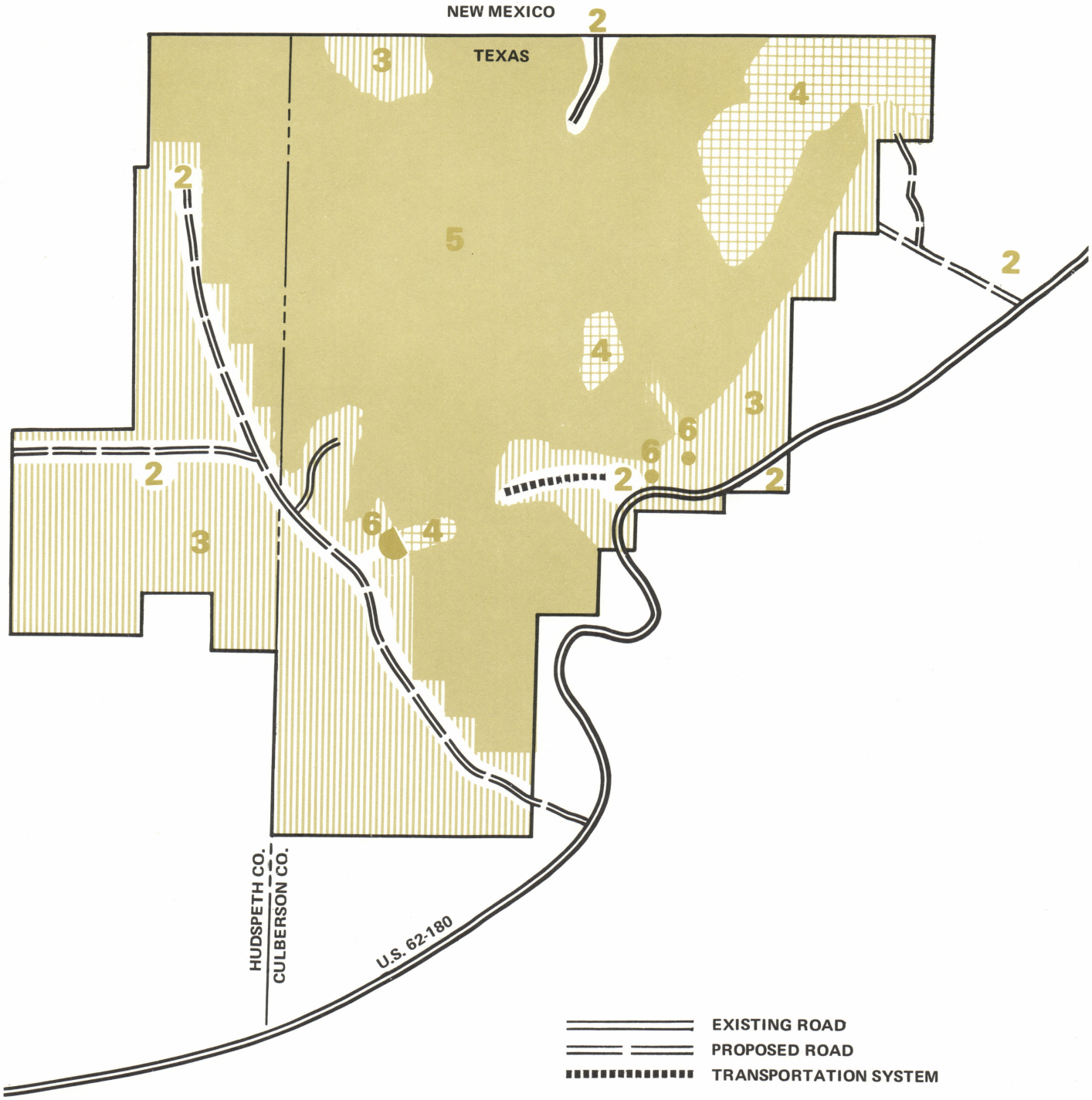
Class II lands, approximately 7 percent of the park, include roads, potential campground sites, operations facilities, and visitor-use facilities. Class II acreage will be reduced following developed-area studies.

Class III lands are those open landscapes, largely in view of roads and other developments, that buffer Class IV and V lands from the high-density use of Class II areas. Class III land is generally arid, supporting succulent, shrub, and grassland communities. Its maintenance in a natural condition is important to the park visitor's experience.

The relic forest of The Bowl, Bone Canyon, and the lower portions of North and South McKittrick Canyons have been designated as Class IV lands to emphasize their significance for research and educational purposes. Additional features will probably be selected for Class IV designation after further evaluation.

The Williams Ranch house, Frijole Ranch house, and Butterfield Stage Station are designated as Class VI. Additional sites will be considered for this classification following research.

Class V lands include the major portion of the Guadalupe high country where hiking, horseback riding, nature study, and mountain climbing are the appropriate activities. The proposed and traditionally active use of this primitive mountainous area is of particular importance in this region of the country where four-wheel-drive vehicles and other vehicles are penetrating and scarring much of the canyons, mountains, and desert flats.



LAND CLASSIFICATION

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III. ANNOTATED MANAGEMENT CONSTRAINTS

1. Act of October 15, 1966 (H.R. 698) authorizing establishment of Guadalupe Mountains National Park, stating reasons, purposes and lands to be included.

2. Memorandum of Understanding between the National Park Service and the New Mexico Department of Game and Fish, dated May 23, 1972. This is applicable because GUMO is adjacent to lands under the jurisdiction of the Department.

3. Memorandum of Understanding between the National Park Service and the Texas Parks and Wildlife Department.

4. Constraints contained in the Wilderness Act of 1964 will be effective over all lands which may be designated wilderness areas.

5. Cooperative Agreement between the State of New Mexico and the Federal Agencies of the Departments of Agriculture and Interior with Fire Responsibilities, dated May 1968. This agreement authorizes fire suppression aid (i.e. slurry drops, manpower) from the Lincoln National Forest.

6. Constraints contained in the acts concerning various historic and archeological sites and the executive orders having to do with inventory and protection of such sites, will influence their management.

IV. NATURAL RESOURCE MANAGEMENT PROGRAM

For the purpose of clarity, all of the 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

Natural Science RSP-WRP Research Program - 1974

Number	Project Title	Status
RSP		
1a	Relictual Plant Communities	Partially Completed, 1968
2	Entomological Survey	Partially Completed, 1968
3a	Population Dynamics and Ecology of Ungulates	In Progress since 1969
4	Small Vertebrates of The Bowl Ecosystem	Approved 1968
5	Limnology of McKittrick Canyon Stream	In Progress since 1968
6	Occurence, Ecological Distribution and Relative Abundance of Bats	Completed 1973
7	(Renumbered: GUMO-N-99)	
8	Human Use Capacity at Selected Areas Proposed for Development	Approved 1969
9	Natural Ecologic Conditions	In Progress since 1969
10	Range Recuperation from Livestock Use	In Progress since 1969
11	Research Natural Areas	Not approved
12	Breeding Avifauna of Woodland Communities	In Progress since 1972
13	Resource Inventory and Appraisal (10-238 PG145)	In Progress since 1973
99	Basic Ecosystem Survey	In Progress since 1969
--	Mollusk Survey	In Progress since 1974
--	Paleovertebrate Study	In Progress since 1974
WRP		
None		

1. Project: Inventory of Flora

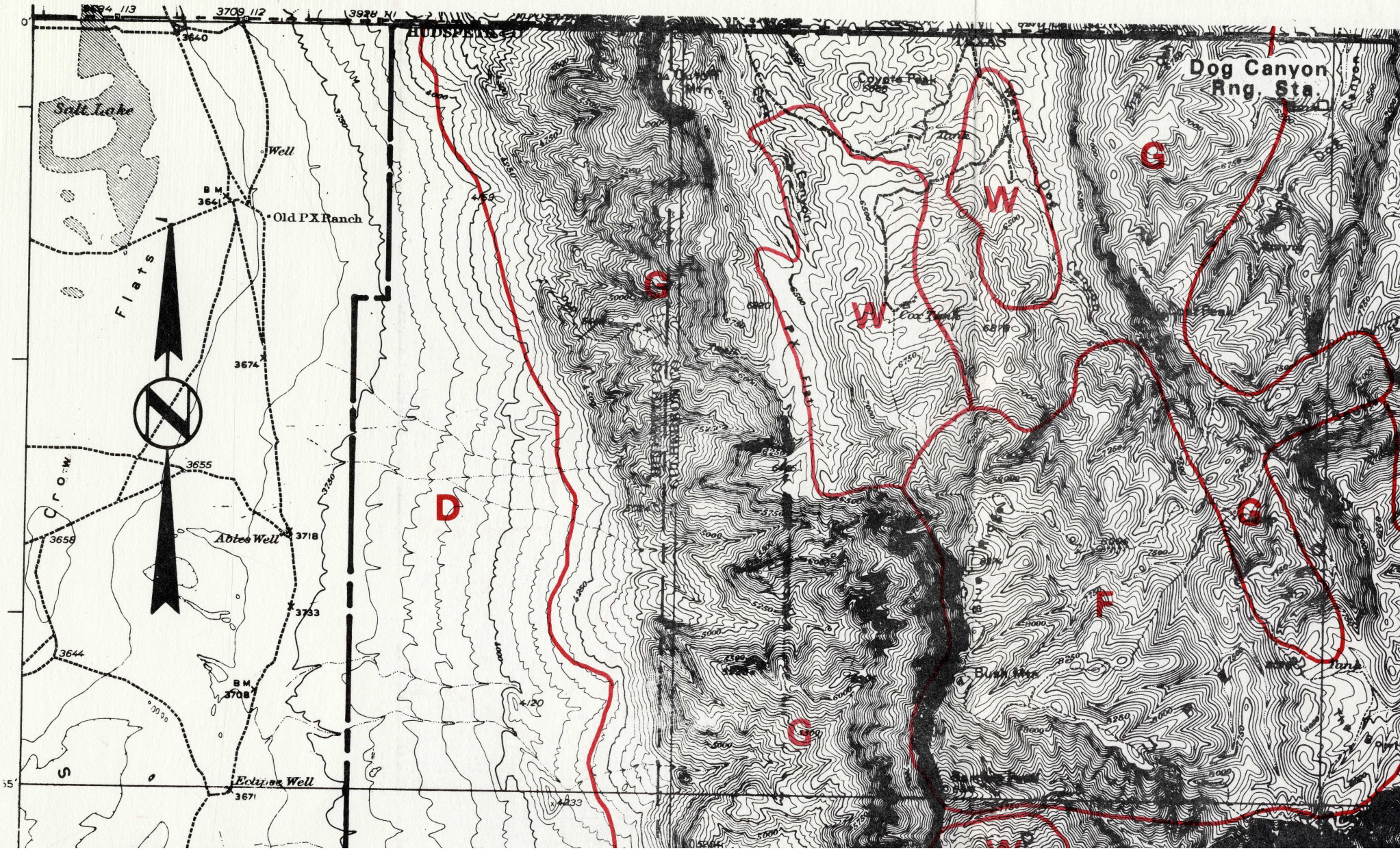
A species list of all vascular plants and all significant native non-vascular plants, denoting those species which are considered rare and/or endangered or of unusual size or of visitor and scientific interest, is required to formulate sound management plans, contribute to interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Continue ongoing research. Consolidate available information from several sources into one list and revise it as additional information is received.

Research

There is currently a contract with Texas Tech University to inventory and submit an appraisal of vascular plants in the Guadalupe Mountains National Park. Knowledge of autotrophs is basic to all other biologically related management problems.


Salt Lake
Well
B M
3641
Old PX Ranch
Flats
3674
3655
Crow
3658
Abbes Well
3718
3733
3644
B M
3708
Estrose Well
3671
HUDSPETH CO.
TEXAS
Dog Canyon
Rng. Sta.
Coyote Peak
6629
Tanks
Cox Tank
6880
6818
6750
Bush Mts.
6233
4120
4658
G
W
D
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PX Flats

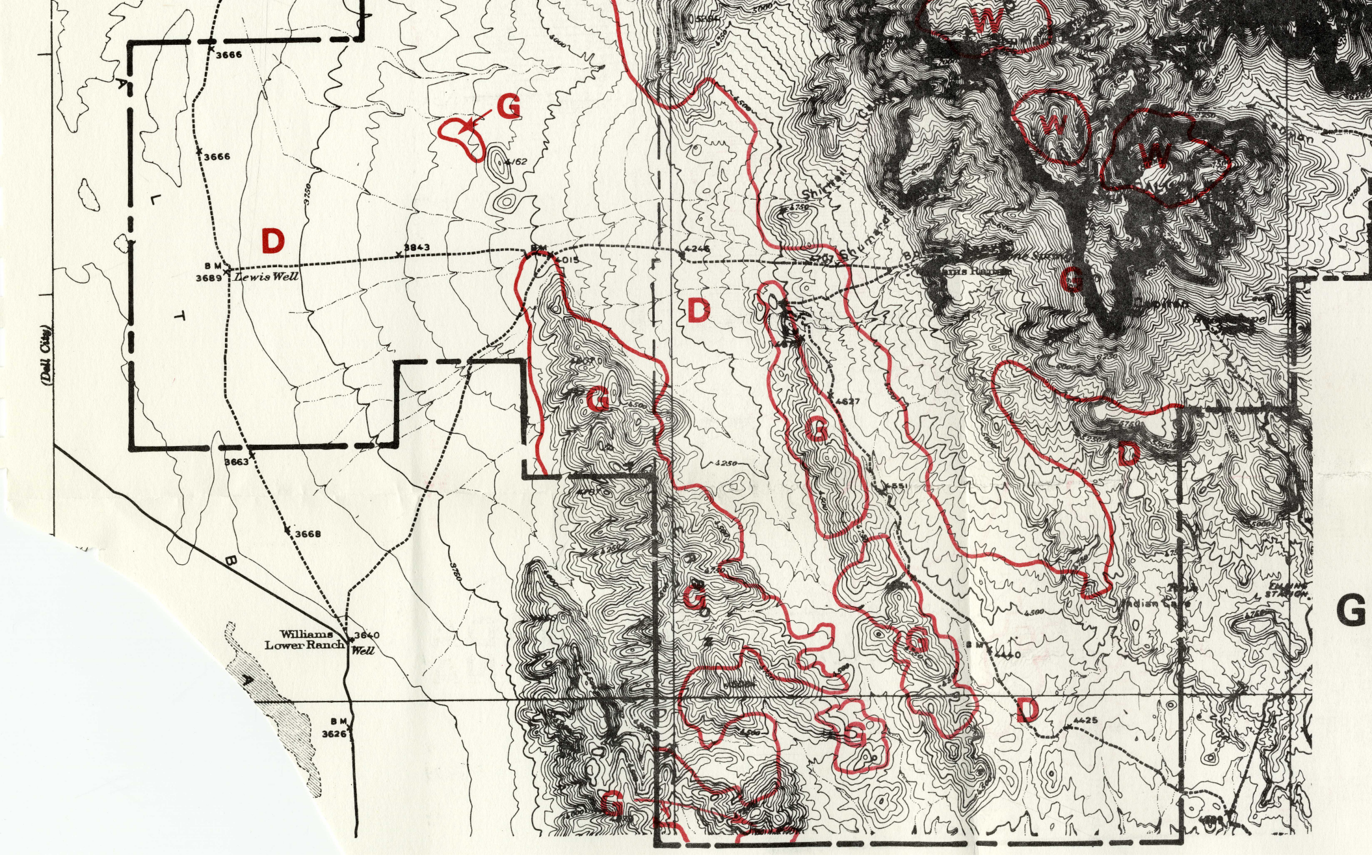
(Dall City)
3666
3666
3843
BM 3689
Lewis Well
3663
3668
Williams Lower Ranch Well
3640
BM 3626
4162
4015
4246
4627
4551
4425
BM 4440
Indian Cave
D
G
W
Shinnery
Shinnery
Shinnery
B
A
L
T

Fig. 1. FLORA IN GUADALUPES INCLUDES RELICT AND RARE SPECIES SUCH AS THIS FAXON YUCCA IN MCKITTRICK CANYON. GUMO Photo.

2. Project: Inventory of Fauna

A species list of all vertebrates; e.g., amphibians, reptiles, fish, birds, and mammals, and of all invertebrates which are considered rare and/or endangered or of high visitor or scientific interest is required to formulate sound management decisions, contribute to interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Continue ongoing research project.

Research

A. Continue the survey of small mammals through contract research with Texas Tech University.

B. Provide field assistance, when appropriate, to collaborators and independent investigators currently inventorying bird and molluscan species within the park.

C. Encourage contributions from independent investigators or contract for the preparation of a complete list of amphibians and reptiles.

D. Encourage contributions from independent investigators or contract for the preparation of species lists for invertebrates, especially arthropods.

3. Project: Inventory of Microorganisms

A substantial species list of the microflora and microfauna in the park area is needed in order to formulate sound management decisions, contribute to interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Initiate research project.

Research

Work is ongoing on this subject in Carlsbad Caverns National Park in Carlsbad Caverns. Studies should be initiated to identify microorganisms of importance to other projects listed in this plan.

A. Identify those species of microorganisms having symbiotic relationships with other biota of the park.

B. Identify those species present in water supplies or of importance to limnological studies.

C. Identify those species which may be of importance to the survival of rare or relict plant species.

D. Identify those species of importance to vegetation and ecosystem analysis.

E. Identification and study of mycorrhiza may prove helpful in explaining the distribution of certain plant populations.

F. Identify those species which may have been or are of importance in geological and/or soil development processes.

4. Project: Data Analysis

The results from many research projects are necessary to formulate sound plans for the management of park resources. Information from all areas of investigation should be organized and easily accessible to Service personnel when needed. All pertinent information should be stored in computer accessible form. To remain viable, this system for information retrieval must be added to and updated as results from research projects become available. With the system being developed for the park by Texas Tech personnel, information requested by the user can be retrieved in either a detailed description for a specific portion of the park or in terms of a map containing the pertinent information.

Action (Research)

A. Store all pertinent information for the management of the park's resources in computer accessible form.

B. Make arrangements for access by field personnel to relevant data stored in computer form.

Research

A. Continue the contract with Texas Tech University for developing the proposed computer program.

B. Continue research activities as outlined in other projects contained in this Resource Management Plan and add information from these studies as it becomes available.

5. Project: Inventory of Significant Geologic Features and Processes

Documentation and study of the caves in the park is needed to increase knowledge of processes of speleogenesis, to formulate sound management plans for the safety of the park visitors, to preserve the resource, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Continue the ongoing research.

Research

A. Continue the reconnaissance for caves. Methods may include ground reconnaissance, gravity survey, and remote aerial sensing.

B. Continue the program of cave surveying, mapping, and geological reconnaissance in cooperation with the Cave Research Foundation.

C. When caves are discovered to hold significant hazards for human life or health, or when they contain outstanding natural science resources, these caves will be gated and locked.

D. Continue the accumulation and interpretation of cave dwelling organisms. Research by the Cave Research Foundation and various Universities is ongoing and deals with both paleonenvironments and extant organisms.

E. Investigate caves which may be of significance to the archeological, anthropological, or paleological interpretation of the area.

Fig. 2. LIMESTONE ESCARPMENT, SEEN FROM MOUTH OF MCKITTRICK CANYON, IS IDEAL PLACE TO STUDY CAVE FORMATION. GUMO Photo.

6. Project: Soils Inventory and Analysis

An inventory and distribution map and textural and chemical analysis of major soil types found within the park are required to formulate sound management decisions, contribute to interpretive and management needs, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Initiate research. Investigate the possibility of contracting this research with the Soil Conservation Service.

Research

A soils study should include an analysis of the texture and chemical composition, erosion potential, and related geological features. A soils map should be prepared to illustrate the various soil types and areas which may offer an unstable building base.

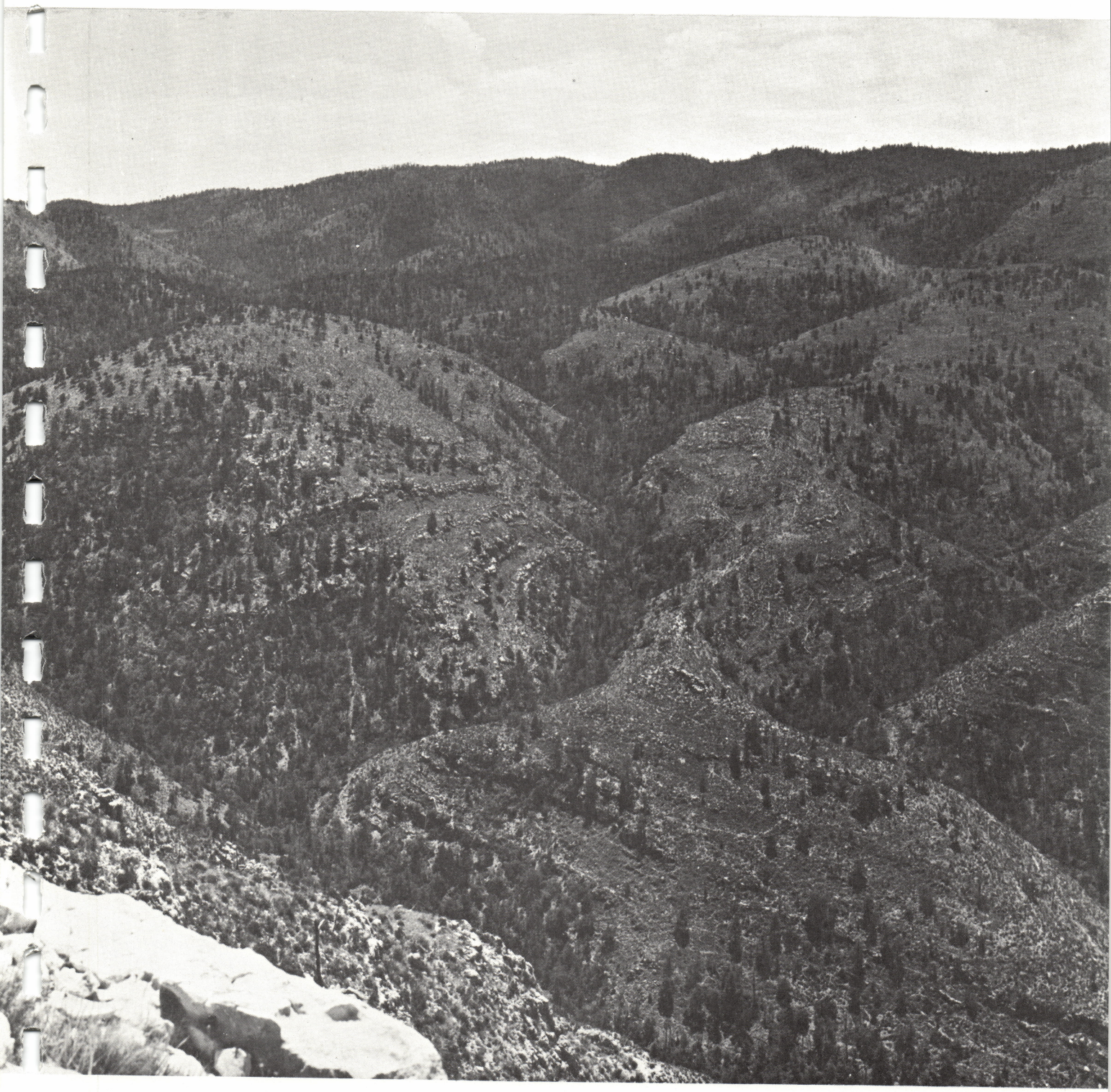

Fig. 3. VIEW SOUTH FROM LOST PEAK TO BLUE RIDGE SHOWS ROCKY, THIN SOILS. GUMO Photo.

7. Project: Inventory of Hydrologic Features

An inventory of all water resources within the park is required to formulate sound development and wildlife management plans, contribute to interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Continued Maintenance)

A. Maintain water resources map current as new sources are discovered or the status of old sources changes.

B. Continue to monitor the quality and quantity of water resources at strategic localities.

C. Stress the importance of water in semi-arid lands as an interpretive theme. Consideration should be given to runoff amounts, plant and animal adaptations, and the importance of water to wildlife habitats.

8. Project: Climatological Study

Basic natural resources data are needed for formulation of sound management planning and decisions, to fulfill interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Initiate research to develop long-term chronology of climate and continue to maintain climatological records within the park.

Research

A. Initiate research to determine the long-term chronology of climate in the area. Methods required to develop the chronology will include tree-ring analysis of cores and sections, and radio carbon dating of fossils.

B. Continue meteorological study of conditions for proposed tram route.

C. Extend the meteorological study to other areas of the park, e.g., The Bowl, William's Ranch, and McKittrick Canyon, as equipment and instruments for monitoring temperature, relative humidity, precipitation, wind velocity and direction, and short-wave radiation become available.

9. Project: Water Resources Analysis

A thorough analysis of the water resources in the park is necessary as a basis for sound management decisions, contribute to interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Research)

Initiate research. This study will be associated with studies 7 and 14.

Research

Establish a routine limnological analysis at selected spring and stream localities to monitor the presence of certain "indicator" species and for changes in community composition, water chemistry, and physical properties.

Fig. 4. THE SCARCITY OF WATER RESOURCES MAKES THIS STREAM IN SOUTH MCKITTRICK CANYON UNIQUE. GUMO Photo.

10. Project: Ecology of Fire

The present wildfire burning zone in the park consists primarily of the low desert country. It may be desirable to include other communities in this category to aid in the restoration and preservation of the park in its native state. However, little is known concerning either the short or long term effects of wildfire on any of the park's vegetative communities, and these should be investigated for both present and proposed wildfire burning zones. Rare plant species and isolated relict plant associations are found in the interior mountain and canyon communities. Fuel accumulation in many of these communities is such that the potential for an extensive wildfire is greater than any time during the past 65 years. The role of prescription burns to maintain these communities should be investigated. Research from this study will contribute heavily to projects 13, 14, and 15 and should be applicable with only slight modification to other areas in the Chihuahuan Desert Region.

Action (Research)

This study is currently underway using National Park Service personnel.

Research

A. An attempt must be make to assess the relative effects of climate, livestock grazing, and fire in determining the vegetative associations present in the park today.

B. Continue research to determine successional patterns in communities burned by wildfire.

C. Document the effects of small experimental burns conducted under various climatic conditions for use in writing prescriptions for burns to achieve management objectives and to supplement successional data.

D. Continue to assess the effects of fire on individual species.

E. Continue research aimed at determining the limits of controlling environmental gradients that selected species can occupy and initiate research into the energy budgets for various habitat types before and after burns. Using this information, the long-term response of a given species to fore can be predicted. This research is especially important to those relict species occurring in tension zones.

F. Initiate research to determine the effects of fire on seed viability and germinability of selected species through controlled environment studies of water and temperature relations.

11. Project: Human Intrusion on Ecosystems

The trail system in the park utilizes extant roads and game and stock trails to minimize the number of man-made intrusions on the landscape. There are a variety of other human activities which may lead to deterioration of the environment.

Action (Research)

There are several research projects ongoing which are designed to mitigate the effects of man's activities in the park. Both Texas Tech University and NPS staff are currently accumulating data which will help to acertain areas of damage and methods of restoration to both soils and vegetative communities.

Research

A. Continue research to establish plots and transects for monitoring trailside and backcountry campsites.

B. Continue research to monitor the distribution of small mammal populations as an indicator of impact in areas of human use.

C. Study the feasibility of monitoring the park's ecosystem by remote sensing.

D. Initiate research to determine the effect of man's use of horses in the park. Areas of investigation should include the influence of stock use on introducing exotic vegetation to the parks plant communities, and the effect on native vegetation and trail maintenance.

E. Initiate program to stabilize erosion resulting from existent roads within the park and investigate possible means to eliminate the "crown effect" on proposed roads.

F. Continue restoration efforts at sites denuded of vegetation by human activities.

G. Seek the assistance of county, state, and private interprise toward the location of camping and lodging facilities on private lands outside of the park.

H. Interpret man's impact on the environment, such as the sheet erosion and gullying in the desert lowlands.

I. Locate visitor use developments to minimize changes to the resource.

Fig. 5. ROAD TO RANGER STATION IN BACK COUNTRY SHOWS HEAVY EROSION CHARACTERISTIC OF THIS FRAGILE ENVIRONMENT. GUMO Photo.

12. Project: Vegetation Analysis

A comprehensive analysis of plant communities found in the park is required to formulate sound resources management plans, contribute to interpretive and research needs, and to comply with Natural Science Studies Activity Standards. Information from this study is especially needed for communities in which rare and/or isolated relict species occur.

Action (Research)

Continue Research activities. Data which will assist in the completion of this project are being gathered by Texas Tech University and NPS scientists.

Research

Initiate research to determine water relations and mineral nutrition requirements of species and composition, productivity, biomass, and succession in stands of the park's plant communities, once communities have been identified.

13. Project: Faunal Factors

The distribution and abundance of species, population dynamics, and migratory patterns for faunal populations are required to formulate sound resource management plans, contribute to interpretive needs, and to comply with Natural Science Studies Activity Standards.

Action (Research - Continue Maintenance)

Continue to read and establish, where necessary, deer and elk pellet group transects for population estimates. In addition, the big game browse survey transects must be read at time intervals which are sufficient to indicate range conditions.

Research

A. Initiate research to determine migratory range of deer and elk populations in the Guadalupe Mountains.

B. Explore the feasibility of monitoring the fluctuations in certain small mammal populations or in their distribution patterns as indicators of changing environmental conditions.

C. Initiate research needed to determine and maintain compatable predator-prey ratios.

D. Initiate research to determine the feasibility of reintroduction of certain extirpated species to the park's ecosystem.

14. Project: Ecosystem Analysis

The lack of complete analysis of the area's ecosystem may limit planning and decision making. This study must be made in order 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 is therefore 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. This project, in all probability, will never be completed since processes within an ecosystem are dynamic and new data will be added to the analysis as they become available. A computer program should be developed to aid in this analysis.

Fig. 6. THE WILLIAMS RANCH HOUSE ON THE WEST SIDE OF THE GUADALUPES REMAINS TO SHOW THE FAILURE OF A HUMAN ATTEMPT TO FIT INTO THIS HIGHLY SELECTIVE ECOSYSTEM. GUMO Photo.

15. Project: Insect and Disease Detection

Portions of Guadalupe Mountains National Park contain vegetative types which include various forest tree species. One of the more important areas, The Bowl, contains a unique forest of ponderosa pine, Douglas fir and limber pine. Any of these forested areas can be expected to contain endemic populations of various insects and disease pathogens. In order to prevent epidemic situations from occurring, it is necessary to closely monitor the insect and disease conditions on the forested land.

Species known to be affected at the present time include ponderosa pine (Pinus ponderosa) infected with southwestern dwarf mistletoe (Arceuthobium vaginatum), redberry juniper (Juniperus pinchotii) with a rust infection, Douglas fir (Pseudotsuga menziesii) infested with Douglas fir beetle (Dendroctonus pseudotsugae) and a budworm (probably Choristoneura sp.), and pinyon pine (Pinus edulis) stem infestation by a species of Dioryctria. Other insects and diseases found in the Southwest which pose a potential threat to trees in the park include western gall rust (Peridermium harknesii), the western pine beetle (Dendroctonus brevicomis), the round-headed pine beetle (D. adjunctus), the red turpentine beetle (D. valens), the engraver beetle (Ips confusus), Douglas fir dwarf mistletoe (Arceuthobium douglasii), and several species of needle-cast fungi.

Action (Continued Maintenance)

In cooperation with the adjacent national forest, all forested areas should be closely monitored both by aerial survey and ground inspection. Any suspected outbreaks should be investigated by specialists from the U.S. Forest Service, Office of Forest Insect and Disease Management.

Research

None needed other than to determine survey methods.

Fig. 7. PONDEROSA PINE AND MADRONE AROUND OLD PRATT STONE CABIN IN MCKITTRICK CANYON ARE SPECIES THREATENED BY INFESTATION AND BROWSE DAMAGE, RESPECTIVELY.
GUMO Photo.

V. PROGRAMMING SHEETS AND RESEARCH PRIORITIES

Includes

Maintenance

Research

RESEARCH

ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 '74 NPS M.Y.	Year 1 '74 Cost/ $1000	Year 2 '75 NPS M.Y.	Year 2 '75 Cost/ $1000	Year 3 '76 NPS M.Y.	Year 3 '76 Cost/ $1000	Year 4 '77 NPS M.Y.	Year 4 '77 Cost/ $1000	Year 5 '78 NPS M.Y.	Year 5 '78 Cost/ $1000	Date Submitted 10-237 10-238
	1	N1	Inventory of Flora		7.0		3.0							
	2	N10	Fire Ecology Study	Guad.		Guad.		Guad.		Guad.		Guad.		
	3	N2	Inventory of Fauna		6.0		6.5		6.5		3.0		3.0	
	4	N8	Climatological Data	DSC		DSC		DSC	2.5					
	5	N5	Inventory of Significant Geological Features		3.9		5.0		3.0					
	6	N12	Vegetative Analysis		2.6		2.0		2.5					
	7	N13	Faunal Factors		3.0		5.0		7.0		24.0		15.0	
	8	N4	Data Analysis		2.5		3.5		3.5		5.0		5.0	
	9	N11	Human Intrusion on Ecosystem								10.0		5.0	
	10	N6	Soils Inventory and Analysis								7.5		5.0	
	11	N9	Water Resources Analysis								5.0			
	12	N3	Inventory of Microorganisms											
	13	N14	Ecosystem Analysis											

MAINTENANCE

ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 '74 NPS Cost/ M.Y. $1000	Year 2 '75 NPS Cost/ M.Y. $1000	Year 3 '76 NPS Cost/ M.Y. $1000	Year 4 '77 NPS Cost/ M.Y. $1000	Year 5 '78 NPS Cost/ M.Y. $1000	Date Submitted 10-237 10-238
		N15	Insect and Disease Detection	USFS	USFS	USFS	USFS 1	USFS	
		N7	Inventory of Hydrologic Features						

VI. OVERVIEW

The following is a review of all actions proposed within the Guadalupe Mountains National Park Natural Resources Management Plan, and outlined within the four categories described within the Management Program.

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 #7 - INVENTORY OF HYDROLOGIC FEATURES: An inventory is required for proper park management and to fulfill Park Service standards. The area will continue to monitor quality and quantity of water sources and maintain proper records and water resources map.

2. Natural Science Project #13 - FAUNAL FACTORS: The park staff will continue to read and maintain elk and deer transects and conduct big game browse surveys.

3. Natural Science Project #15 - INSECT AND DISEASE DETECTION: The park staff will continue to cooperate with the adjacent National Forest for monitoring the forests for insect and disease detection.

III. THOSE ACTIONS WHICH WILL INITIATE NEW MAINTENANCE.

There are no projects that will require the initiation of new maintenance.

IV. THOSE ACTIONS WHICH WILL ENTAIL RESEARCH.

1. Natural Science Projects 1, 2, 3, 5, 6, and 7 - INVENTORIES: These projects call for inventories of natural resources not already inventoried and are thought necessary for wise planning in the park, and to fulfill natural science standards. These projects will inventory and list vascular and non-vascular plants, fauna, microorganisms, significant geologic features and processes, soils, and hydrologic features.

2. Natural Science Project #4 - DATA ANALYSIS: All of the data obtained through studies outlined within this plan should be computerized in such a fashion that they will eventually be available for use in the National Park Service Management Information System.

3. Natural Science Project #6 - SOILS INVENTORY AND ANALYSIS: This project will include the overall analysis of the soils as soils inventories are compiled. It entails the development of soils map for use in planning and management of the park.

4. Natural Science Project #8 - CLIMATOLOGICAL STUDY: This study is two-fold: it will continue the research on the climatology of the Guadalupe Peak area where the tramway has been proposed, and continue more extensive studies throughout the park. These data are important for management and interpretive purposes.

5. Natural Science Project #9 - WATER RESOURCES ANALYSIS: A thorough water resources analysis is necessary for sound management decisions and to comply with natural science studies activity standards.

6. Natural Science Project #10 - ECOLOGY OF FIRE: It is likely that the forests of the Guadalupe Mountains are dependent upon fires and that fires are necessary to retain the forest in its natural state. This study will investigate that thesis and formulate management practices toward that end. The project proposes to continue research to determine the role of fire as a management tool.

7. Natural Science Project #11 - HUMAN INTRUSION ON THE ECOSYSTEM: This project relates to others proposed to examine the floral and faunal resources and to develop short- and long-range carrying capacity programs for the areas of the park that are affected by human uses. It will also include assessments of damages and methods of restoration to natural conditions.

8. Natural Science Project #12 - VEGETATION ANALYSIS: This project will follow up the inventory of the vegetation and include a thorough analysis of the plant ecology. This project ties into the fire ecology study and is significant for park management and interpretation.

9. Natural Science Project #13 - FAUNAL FACTORS: Large ungulates and other fauna must be examined for potential impacts to the environment, and for a better understanding of their ecological positions within the Guadalupe Mountains ecosystem. The project relates to monitoring the environments, and is important for long-term warning systems.

10. Natural Science Project #14 - ECOSYSTEM ANALYSIS: This is an all-inclusive analysis of all phases of the area's natural resources. This project cannot be completed until considerably more data are accumulated. Essentially, an ecosystem analysis involves the measurement of the primary energy into the system and the energy flow of that system.

DETERMINATION: It is determined that all actions above are maintenance and research in character and do not significantly affect 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 Roland H. Wauer March 20, 1975
Chief Scientist, Southwest Region

Concurred in by Robert H Weaver
Acting Associate Regional Director, Professional Services

Approved by [signature]
Regional Director, Southwest Region

VII. APPENDICES

APPENDIX A

CONSTRAINT DOCUMENTS

Copies of these documents are available at either the Park Headquarters in the city of Carlsbad, New Mexico or at the Southwest Regional office in Santa Fe, New Mexico.

APPENDIX B

COMPLETED RESEARCH

GENERAL BIBLIOGRAPHY

FOR GUADALUPE MOUNTAINS NATIONAL PARK

I Flora
II Fauna
III Geology
IV Archeology/Paleontology
V History
VI General Interest/Other

I. FLORA

NOTE: The following bibliographies are located in the resource basic inventory file at the Southwest Regional Office:

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2. Published works pertinent to a Taxonomic Study of Vascular Plants of Carlsbad Caverns National Park and Adjacent Portions of the Guadalupe Mountains in New Mexico and Texas.

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Rickett, Harold William. 1970. Wild Flowers of the United States, Vol. 3. Publication of the New York Botanical Garden, McGraw-Hill Book Company, New York.

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Weniger, Del. Cacti of the Southwest. University of Texas Press, Austin and London.

II. FAUNA

NOTE: The following bibliographies are located in the Southwest Regional Office file:

1. Carlsbad Caverns Invertebrates
2. Carlsbad Caverns Bats
3. Carlsbad Caverns Birds
4. Carlsbad Caverns Mammals

The following checklists are also located in the Southwest Regional Office file:

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Musgrave, Paul N. 1935. A Synopsis of the United States and Canada, with Description of a New Species. Proceedings of the Entomological Society of Washington, Vol. 37, No. 7, Oct., pp. 137-145.

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III. GEOLOGY

NOTE: The following bibliographies are located in the Southwest Regional Office file:

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2. Carlsbad Caverns National Park - Speleology

IV. ARCHEOLOGY/PALEONTOLOGY

NOTE: The following bibliography is located in the Southwest Regional Office file:

1. Carlsbad Caverns Archeology

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Describes Wallace Pratt's McKittrick Canyon donation to the Park Service.

Conkling, Roscoe P. Notes on the history of the Pinery. Carlsbad Caverns and Guadalupe Mountains National Parks Library, 7 pp.

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The Guadalupe Ecosystem: An Approach to Basic Plant Ecological Research in the National Park Service. Abstract, Carlsbad Caverns and Guadalupe Mountains National Park Library, No. 582 Ge.

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Gehlbach, Frederick R. & J. Alan Holman. 1974. Paleoecology of Amphibians and Reptiles from Pratt Cave, Guadalupe Mountains National Park, Texas. The Southwestern Naturalist 19(2):191-197.

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A series of manuscripts describing the Permian reefs and associated deposits of the southern Guadalupe Mountains and the environmental conditions in which they were formed.

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A road log and guide book on the Capitan Reef Complex of the Guadalupe Mountains.

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Warnock, Barton H. Plant Communities of the Guadalupe Mountains in Texas and Nearby Carlsbad Caverns National Park.

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An inventory of the historic manmade structures of Guadalupe Mountains National Park.

APPENDIX C

COLLECTIONS AND LOCATIONS

Collections Outside Park

Botany:

1. Herbarium of Sul Ross University, Alpine, Texas.
2. Herbarium of Baylor University, Waco, Texas.
3. Herbarium of the University of New Mexico, Albuquerque.
4. Herbarium of Texas Tech University, Lubbock, Texas.

Arthropods:

1. University of Kentucky, Lexington. Specialized collections of Cave arthropods, mainly gathered by Dr. Thomas C. Barr, Jr. and James R. Reddell, of the Department of Zoology and the Institute of Speleology of that institution.

Herptofauna:

1. University of Michigan Museum of Zoology, Ann Arbor. Probably the most extensive representation.
2. University of Kansas, Museum of Natural History, Lawrence. Probably has the second largest holdings.
3. United States National Museum, Washington.
4. Texas Natural History Collection, University of Texas, Austin.

Birds:

No large holdings collected exclusively from within the area of the designated park are known. Perhaps the best collections for this area are those collected primarily from the immediate vicinity of present-day Guadalupe Mountains National Park and are now holdings of Louisiana State University and Texas A&M University. These comprise the 1938 and 1939 collections reported by Burleigh and Lowery in their paper, Birds of the Guadalupe Mountain Region of Western Texas (Occasional Papers of the Museum of Zoology, Number 8, LSU Press, August 20, 1940).

Also, collection by George Newman to be placed at Texas A&M University in 1975.

Mammals:

1. Collections by Vernon Bailey presumed to be in the collections of the old Bureau of Biological Survey.
2. Collections of the Natural History Survey, State of Illinois, University of Illinois, Champaign.

Collections in Park

(Stored in museum collection at Carlsbad Caverns National Park)

Ceramics - five potsherds in catalog; site samples from Archeological Site Survey are not yet cataloged.

Stone Specimens - approximatedly 237 specimens including fossils.

Stone Artifacts - nine arrowheads, scrapers, chips, plus those described in collection below (Pratt Cave).

Flora - six specimens collected - tree sections, etc.

Metal - nine specimens of historic nature; mule shoes, stove fragments, cartridges, etc.

Faunal - seven specimens, study skins and skulls.

Other Collections

In addition there have been 265 museum catalog cards (10-254) made out on the artifacts obtained in the 1965 excavation of Pratt Cave. These artifacts include chips, bone, shell, and mainly vegetal material - cord, string, woven material. These cards are in the Carlsbad Caverns National Park Catalog.

There are a number of uncataloged specimens of varying types that are at present in a museum case in the GUMO Area Manager's office.

Texas Tech is at present assembling significant herbal, faunal, and archeological collections in pursuit of their scientific studies in GUMO.

A significant archeological collection from the area of the Guadalupes may exist at the University of Nebraska or the University of Pennsylvania from the excavations of Bertrand Schulz.

The Houston City Museum contains some archeological specimens taken from Williams Cave before the establishment of the Park.

Tom Diamond, an El Paso lawyer, has assembled an extensive private collection of original historic documents, many of which are pertinent to the history of the Guadalupes.

APPENDIX D

SPECIFIC MANAGEMENT PLANS

I. Backcountry Management Plan

II. Interim Public and Administrative Use Policy

III. Cave

IV. Fire

V. Deer - Ungulate

VI. Archeological Management Plan

VII. Historical Management Plan

I. BACKCOUNTRY MANAGEMENT PLAN

The plan's objective is to provide for maximum visitor enjoyment of backcountry within the limitations of: (1) resource ability to withstand impact without incurring irreparable damage; (2) appropriate backcountry activities for a natural unit of the National Park System; and (3) consideration of sociological factors associated with numbers using the backcountry. The limits for factor number 1 will be decisive in decisions regarding factors 2 and 3.

The plan conforms to Administrative Policies for Natural Areas of the System; legislation authorizing establishment of the park; the Wilderness Bill; the Code of Federal Regulations; NEPA; and the long-range Master Plan, including Management Objectives.

The plan has two parts:

A General statement on backcountry use and problems, and park projects for management and research.

A statement of backcountry management policies currently applicable, which can be used as a handout to visitors.

The plan will be reviewed annually and changes recommended, if needed.

GENERAL: PARK PROJECTS AND NEEDS

A. VISITATION:

Increasing rapidly as park becomes known. Second full year of operations 1972, increased 44% over 1971 (39,157 as compared to 27,225).

Backcountry overnight use jumped 82% (884 compared to 485). Observations indicated approximately 1,222 day hikers in 1972.

Backcountry use has been mainly residents of Carlsbad, New Mexico, and El Paso, Texas areas. Increased use is coming from Dallas-Fort Worth, Houston, and even out of the region entirely.

B. BACKCOUNTRY USE:

1. Access

The great majority of users enter backcountry from the Pine Spring-Frijole area and use is concentrated along trails in the southern half of the park. This is due to Highway 62-180 crossing the southern end of the park.

Access to McKittrick Canyon is from the same highway, via a controlled-access road. Keys are checked out at the Information Station.

The only access to the northern half is a rough, little known, unimproved road to Dog Canyon Ranger Station, 75 miles from Carlsbad, New Mexico.

Because of need to carry all water used, overnight trips seldom exceed three days; usually two days.

2. Trails

Approximately 60 miles exist, mostly in the high country and McKittrick Canyon. Limited staffing has precluded maintenance. They are old ranch trails, usually well located on stable ridgecrests except for trails up the escarpment which are in drainages and subject to erosion.

Trails to the top are rocky, narrow and often exceed gradient standards. On top they are faded, and difficult for hikers to follow. They have been marked with rock cairns and signs. Impact is hard to assess with use just beginning.

3. Horse Use

Approximately 80% of trails are open to riders. The remainder are closed to stock due to possible resource damage. Visitor use has been very light to date--approximately 20 riders with personal horses in 1972.

4. Natural Resources

The crowding of significant botanical, wildlife and long recognized geological resources in a small area necessitates careful consideration in determining use types and amounts. (See Natural Resources Management Plan for a full description of types, problems and research needs.)

5. Archeological Resources

Very little evidence of Early Man exists. Carbon dating of sites indicates use 12,000 years ago. Sites are not spectacular. No formal structures were consturcted, rather open areas and shelter overhangs were used. A total of 150 sites are recorded (Texas Archeological Survey), including: mortar holes; dense midden accumulations; ring midden sites (mescal pits); rock shelters and rock art sites.

Local residents are known to have "pot-hunted" over the years. Such problems can be expected to continue.

Existing trail systems circumvent known major site areas. (See Archeological Resources Management Plan.)

6. Historical Resources

Most are not in true backcountry. However, portions of the Butterfield Stage Line route, Williams Ranch, goat herding camps, the old Marcus Place, and several old mine tunnels are along trails.

A related problem concerns legends of buried treasure and lost gold mines. Articles have appeared in magazines, and would-be treasure hunters have been found damaging resources while digging at supposed locations. (See Historical Resources Management Plan.)

C. BACKCOUNTY MANAGEMENT PROGRAMS AND PROJECTS

1. Carrying Capacity Determination

(a) Research:
   (1) Aspects of research projects determined by the Natural Resources Management Plan which apply to backcountry management will be adopted.
   (2) Additional management information will come from a five year research contract with Texas Tech covering biology, mammology, archeology and aquatic resources.
   (3) A range analysis survey of the park will be made in 1973 to provide base data for future impact observations.

(b) Campsite and Trail Impact:
   (1) Transects: To observe vegetational and erosional impact of visitor use transects will be established as designated backcountry campsites and along trails in 1973. They will be read on a regular basis.
   (2) General Impact Observations: Regular patrols will report on conditions affected by backcountry use:
      (1) Accumulation of litter beyond ability of staff to handle.
      (2) Sanitation conditions at campsites.
      (3) Occurrence of illegal fire rings.
      (4) Impact of horse use (trampling, excrement, grazing).
      (5) General backcountry conditions--(impact on terrain and wildlife).

(c) Statistical Use Data:
Records will be maintained for management determinations covering:
(1) Day use on trails (foot and horse).
(2) Numbers using backcountry sites each night.
(3) Transect and general impact observations.

(d) Public Opinion:
(1) Public reaction to park policy, impact and quality of experience will be monitored and recorded. A questionnaire will be devised.
(2) Local groups will be contacted for opinions and ideas regarding management and preservation of the backcountry experience.

2. Handling and/or Increasing Carrying Capacity

(a) Trails:
(1) Maintenance: Trails are presently non-maintained. Needed increases in staffing and development funds will enable bringing trails to standard, preventing adverse impact and increasing carrying capacity.
(2) Additions: Approximately 30 additional miles will be marked in 1973 to provide backcountry opportunities in the western portion of the park, thereby allowing spreading of use.

(b) Campsites:
(1) Additions: Three new backcountry campsites will be designated to provide camping in areas presently unavailable and to increase capacity.
(2) Sanitation: A study of the most feasible method of providing sanitation facilities with minimum intrusion will be made.
(3) Alternates: Alternate campsite locations near present sites will be located to enable a rest-rotation system to be established for area recovery purposes if deemed necessary.

(c) Horse Use:
(1) One corral (visitors to provide feed and water) was established in 1973 on the west side to allow trail riders to cross this area where a one-day cross park trip is not feasible.
(2) Special Use Permit: A permittee, operating from the Dog Canyon area, conducts day rides to provide an additional experience and eliminate some pressure from private stock. Operations must be monitored to determine quality, impact on resources, and fulfillment of need to aid in decisions should additional permittees be considered.

(d) Water Guzzlers:

(1) Need to carry all water limits trips. A gallon a day per person is recommended. Other agencies have set up water "guzzler" sites using catchment and storage tank. Maintaining water standards could be a problem, but the potentials of such a process should be explored as a means of providing broader use within impact limits.

(e) Patrol Cabin: The old ranch cabin in The Bowl currently serves as fire cache and patrol cabin. Biologists recommend only foot traffic on a through basis to avoid further disturbance to the relict forest.

(1) To conform to objectives and enable patrol coverage as use increases a site along the Guadalupe Trail which can be serviced by pack stock will be selected and a prefab portable building will be installed.

3. Public Relations

(a) Media:
Press releases and appearances on radio and television will attempt to inform the public in advance of management policy changes and backcountry problems.

(b) Public Appearances:
Liaison with local community, business, and conservation groups will be maintained to attain public understanding.

(c) Handouts:
Informational handouts on backcountry conditions and policies will be available for visitors.

4. Research Natural Areas

Recommended by researchers for protection of significant ecosystems, proposals are being drafted by park personnel with advice from professionals who have conducted research. (See Natural Resources Management Plan)

5. Man-made Backcountry Intrusions

Steel water tanks, pipe, miles of fences, and other remnants of ranching days scattered in backcountry are being inventoried. Plans for priority removal, method of removal, and funding requests will be drafted.

6. Other Backcountry Resources

Management of wildland fire and wildlife are covered by Fire Management and Natural Resources Management plans.

Addendum to

BACKCOUNTRY MANAGEMENT PLAN

GUADALUPE MOUNTAINS NATIONAL PARK

Staffing and Funding Requirements

A. Staffing

To make the number of patrols combined with work projects mentioned as well as to provide for public services will require addition of:

One Park Technician	GS-5	(1 MY)	$ 8,500
Two Park Technicians	IGS-4	(1 MY)	7,500
One Park Aid	IGS-3	(½ MY)	3,300
			$19,300

To bring trails to standard and maintain them will require a trail crew devoted to such work continuously during the six months of good weather:

Four Laborers	WG-3	(2 MY)	$13,000

B. Other Fiscal

Two vehicles, one each for M&P and M&R, needed for patrol and transport to trail heads.

Two vehicles at $150 per month	$ 3,600

Acquisition of three additional radios (portable) under lease:

$ 1,100

Acquisition & installation of 2 vehicle radio chargers:

$ 270

C. Backcountry Facilities

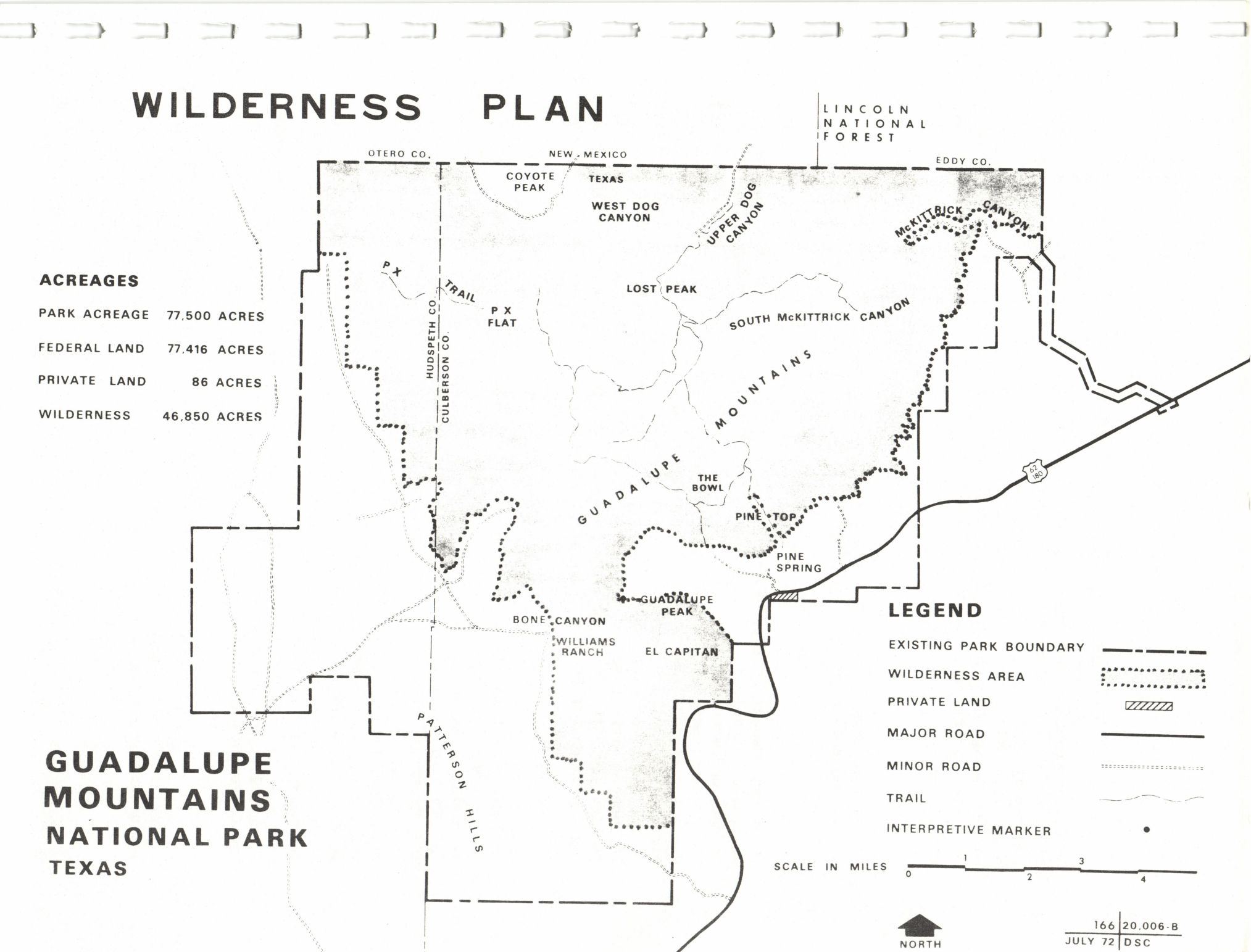
1. Acquisition and establishment of toilets:

Four initial sites @ $500 each	$ 2,000
Helicopter costs to fly equipment up:	$ 1,000
	$ 3,000
2. Maintenance & servicing of facilities	$ 2,000
Total annual costs	$42,270

D. Patrol Cabin

Acquisition of prefab. cabin, installation by helicopter and water catchment system	$ 1,000
Total non-recurring	$ 1,000

WILDERNESS PLAN



GUADALUPE MOUNTAINS NATIONAL PARK TEXAS

II. INTERIM PUBLIC USE AND ADMINISTRATIVE USE POLICY

Guadalupe Mountains National Park was authorized in 1966 and was established in 1972. With no visitor use development yet initiated, anticipated rapidly increasing visitor travel will have to be accommodated for the next few years with existing facilities and limited staffing. In order to minimize serious damage to the resources during this critical intervening period, the following interim use policy has been formulated, based upon elements of the master plan.

Public Use

The park is open to visitor use under the limits and control set forth below, and authorized by federal regulation.

Public Interpretation and Information

To prevent damage to the resources by the public, through lack of information, or from uncontrolled use, it is essential that a visitor information center be open and manned at the point of major visitor entry to the park year-round. The present temporary facility at Frijole will continue to serve this need until a permanent visitor center is constructed. Efforts will be made to direct park visitors to this point in order to dispense accurate information on the limits of park use, safety precautions, and interpretation of park features. Without such a central facility, visitor use could become uncontrolled and highly destructive. Secondary visitor contact points will be at Dog Canyon Ranger Station, Pine Canyon Campground, and McKittrick Canyon station.

Camping

Private enterprise will be encouraged to develop camping and trailer facilities adjacent to the park. During the interim period it is recognized in the master plan that a temporary camping facility is necessary near the point of major visitor entry to the park to prevent roadside camping and the spread of unauthorized camping on adjacent fields and in the vicinity of springs. Accordingly, the temporary campground at Pine Canyon will be maintained until commercial campgrounds are developed outside the park or until a permanent campground is developed in the park. Pine Canyon Campground will be limited to 10 established campsites and 20 recreational vehicle sites. Fires with containerized fuel only will be permitted. A secondary camping area will be located at Dog Canyon Ranger Station. This area will be limited, and heavy use of the camping site will be discouraged. A central campfire circle will be provided at Pine Canyon Campground and at Dog Canyon Station as the only sites where open fires will be permitted.

Backcountry Primitive Camping

Six primitive campsites have been designated in the high country. Here again these are primarily to prevent uncontrolled backcountry camping in

fragile areas. The sites selected are at locations least damaging to the resources. No developments will be constructed at these sites. Slit trenches or similar provisions will be made for sanitation. Backcountry campers will be asked to register at the information station and if camping use becomes too heavy it may have to be limited. Fires with containerized fuel only will be permitted. All trash will be packed out and not buried. Water must be carried in by hikers.

Stock Use

A map located at the Frijole Information Station prescribes areas of the park closed to all stock use. This includes public stock as well as government stock (except emergency use). This covers essentially the McKittrick Canyon drainage, including The Bowl, South McKittrick Canyon, and North McKittrick Canyon. These measures are necessary to prevent any further introduction of exotics into McKittrick drainage, pollution of the watershed, damage to the fragile resources of the drainage and erosion of foot trails.

Saddlehorse use will be encouraged below the escarpment except in the vicinity of the springs, camping areas, and McKitrrick Canyon. Specific routes will be designated.

Certain stock trails are designated along the western portion of the high country. These are for day use only and all stock must be brought out of the high country at night (except during emergencies). Meadow areas of the high country will not support grazing by stock. After rains Pine Canyon trail may be in poor condition and during such periods saddlehorses may be discouraged unless handled by experienced riders. Saddlehorses may be corraled overnight at Dog Canyon Station and at Pine Canyon corrals, but must be fed. Neither visitor nor government stock will be permitted to graze in the park. Portions of the park have experienced severe erosion in the past due to ranching operations, and we cannot allow stock to compete with wildlife for available range during this period of range recovery.

Hitching racks will be located at horse limit boundary near The Bowl so that riders can visit The Bowl on foot. Horses should not be hobbled or permitted to graze anywhere in the high country. No holding corrals will be permitted in the high country.

Pets

Pets are permitted on leash in the front country but will not be permitted on the backcountry trails.

Trail Use

Approximately 55 miles of primitive foot trails are available in the park. However, for the most part they are in poor condition and until they can be improved hikers must exert caution. Foot travel is encouraged in all areas of the park except the research natural areas. Hikers are cautioned to remain on trails and not take shortcuts.

Mountain Climbing

The rock structure of the park is not good and technical rock climbing is discouraged. Climbers insisting on making technical climbs should register at the information station for their own safety. Cross country hiking off trails is discouraged because of hazardous terrain.

Vehicle Use

Present public vehicle use in the park is limited to the main highway. Pine Canyon campground road, Frijole Ranch road, access road to mouth of McKittrick Canyon, McKittrick Ranger Station and road to Dog Canyon Ranger Station. McKittrick Canyon is closed to all vehicles, public or government (except emergencies). Administrative patrol roads are maintained along the west side and around Coyote Peak. These roads are not safe for general public use.

Ranger Stations

Park personnel will be stationed at the following locations either year round or seasonally to provide maintenance and protection.

McKittrick Ranger Station
Frijole Ranch
Dog Canyon Ranger Station
McKittrick Canyon Rock House
Salt Flat Station

All supplies to McKittrick Canyon Rock House will be transported either by foot or a two-wheeled hand-propelled cart. No horses will be used.

Fishing

McKittrick Creek is not of sufficient size to support this activity, and the pools are biologically fragile. Accordingly, fishing will not be permitted in the park.

Caves

Many caves, both explored and unexplored, are thought to be located in the new park. Because of hazards involved and susceptibility to damage they will not be open to the general public. Bona fide research and survey activities only will be permitted upon authorization by the Superintendent, similar to procedures at Carlsbad Caverns. Located caves will not be publicized. A special regulation places these caves under the same limitation as caves at Carlsbad Caverns National Park. Certain easily accessible caves may have to be gated.

Treasure Hunting

Many legends of treasures in the Guadalupe have resulted in problems from treasure hunters. All treasure hunting, excavation and use of metal detectors are prohibited by regulation and will be enforced. Additional regulations will be requested to strengthen this enforcement.

Any future need for searches for historical research purposes will be solely under the direction of and approved by the National Park Service.

Management of Springs

The natural springs and associated ecology will be protected and preserved. Hikers will be permitted to visit them but must stay on designated trails.

1. Smith Spring will receive intensive protection. Public use will be limited to a foot trail to the lower edge of the spring. A nature trail will limit and control public use to the site. No picnicking will be permitted in the area.

   Piping of water from Smith Spring will be stopped and the overflow will return to its natural course. Old ranch piping will be removed.

   The delicate plant ecology surrounding the spring will be preserved.

2. Choza Spring on the south side of the highway has been used as a picnic site in the past and this will continue. Trash cans will be maintained. No development will take place.

3. Manzanita Spring, Juniper Spring, Bone Spring, Guadalupe Spring and others will be accessible by foot travel only.

Bowl Area

This forested area in the high country will be open to visitor foot travel. Visitor and government horses will be excluded due to the fragile ecological nature of the area and its drainage into McKittrick Canyon. The cabin at The Bowl will be retained as an administration and protection use facility. Fire equipment will be stored at the site.

The Bowl area will receive special attention and study to assure that damage is avoided.

McKittrick Canyon

This area is open to public foot travel. However, public use will be closely monitored and limited to trail routes. Because of the delicate streamside ecology, wading of pools and streams will be discouraged and hikers will be instructed to not leave trails. Keys to the gate will be checked out at the information station as long as the access road is in private hands. As public use builds up, every attempt will be made to station an employee at the rock house during heavy use seasons within staffing limitations. Information and restroom facilities will be available at the rock house during portions of the year. Foot patrols of the canyon will be maintained during periods of heavy use. The area will be day-use only with no camping or stock use.

The Hunter's Lodge and the power line from the Rock House to Hunter's Lodge will be removed. The picnic site at Hunter's Lodge will be retained.

Historical Areas

The following areas will be preserved and protected pending further historical studies:

1. Frijole Ranch
2. Butterfield Stage Station
3. Butterfield Trail
4. Williams Ranch
5. Cavalry Encampment - across wash north of old "Pinery" stage stop

Frijole Ranch area will be used as a temporary headquarters only until a headquarters residential area is surveyed. As soon as utilities are provided at the new site, all temporary quarters will be moved to that site and Frijole Ranch will be retained in its historic condition. No additional buildings or temporary quarters will be added to the site. The temporary information station at Frijole will be removed as soon as permanent facilities are provided.

The Butterfield Stage Station ruin will be fenced off and preserved.

Backcountry Cleanup

Every effort will be made within funding and staffing limits to gradually remove the large amounts of trash, fencing, and other debris left over from ranching days.

Research Natural Areas

Three areas of the park are of particularly high fragility and of great research value. These areas will be recommended for designation as Research Natural Areas and as such general public use will be discouraged. They include:

1. Upper headwaters of South McKittrick Canyon above Hunter's Lodge

   The general hiker can look down into this high-value ecological area by taking the trail to the ridgetop just beyond Hunter's Lodge. This will avoid damage to and contamination of the narrow stream course by foot travel.

2. North McKittrick Canyon

   Similar to South McKittrick, the North McKittrick headwaters contain areas of particularly high ecological value. The proposed Research Natural Area is situated on the south fork of the north fork of McKittrick Canyon. It is hoped that the Forest Service will also give a high degree of protection to preservation of that portion north of the park boundary.

3. Smith Spring

This is undoubtedly the most outstanding natural spring in the park, both for its volume of flow and the delicate plant associations. It will be restored to its natural condition. While the spring area will be proposed for a Research Natural Area, visitor foot travel to the spring site will be provided via an interpretive trail. Visitor use will be limited to the trail to avoid compaction of the soil and damage to the vegetation surrounding the spring.

III. CAVE MANAGEMENT

Inventory

To properly manage, protect and administer the cave resources of the Guadalupe Mountains, consistant information is needed. For this reason a joint filing system has been set up between NPS and NFS with the files being kept separate.

Cave Filing

Each cave is being numbered. The numbering follows the BLM system, which has been set up to accommodate an area wide inventory.

A coded card file has been established for ease of data retrieval and ease of input.

A folder of each cave is then kept for much more detailed information such as photographs, history, etc.

A USGS Quad. will be maintained for general cave locations. The coded card file, the cave folder, and the cave location map will be kept in confidential files.

To tie each cave down on the ground, a brass cap will be set at the entrance giving the cave's number and the agency having the cave on file.

Management Direction

Each cave will have a dual classification, one for hazard and one for formation significance. Any management decision should be based on directions pertaining to both hazard and significance classification.

In Conclusion

The inventorying of caves for some time in the future will be a continuous task, and can best be accomplished by individuals experienced in caving using a standard criterion set forth in this paper.

Charlie Peterson
March 26, 1972

GENERAL CAVE AND ARCHEOLOGICAL SITE PRESERVATION POLICY

1. The locations of caves and archeological sites found in Carlsbad Caverns and Guadalupe Mountains National Parks will not be disclosed to the general public except at the discretion of the Superintendent. It is particularly important that cave locations be kept out of print. The reason for this policy is to further strengthen protection of these resources from unauthorized entry and valdalism. If any exceptions to this policy are felt necessary, they should be submitted to the Superintendent in writing for consideration. National Park Service employees who locate caves outside the park on their own time and outside the scope of their employment are also encouraged to apply this same policy.

2. Special Regulations provide:

   "With the exception of the regular trips into Carlsbad Caverns under the guidance or supervision of employees of the National Park Service, no person shall enter any cave or undeveloped part or passageway of any cave situated within Carlsbad Caverns National Park without prior permission of the Superintendent in writing.

   "Such permission will be granted only to individuals representing recognized scientific or educational institutions engaged in investigations which have demonstrable value to the National Park Service in its management and understanding of cave resources."

3. We will cooperate fully with qualified caving groups, and with bona-fide researchers. We will also cooperate fully with those contributing, or sharing information with us, regarding other caves found outside the park. Such cooperation on the part of Federal and State agencies, organized caving groups, and individual cavers is appreciated greatly, and has contributed much to our understanding and interpretation of similar resources in the Park. We are hopeful that it will be continued.

4. Adequate security of cave and archeological resource file material will be maintained through the cooperation of the Carlsbad Caverns Natural History Association and the National Park Service.

CODING KEY FOR CAVE CARD FILE

11 JANUARY, 1972

NO.	ITEM	CODING, DESCRIPTION, AND INSTRUCTIONS
1	CAVE NUMBER	ASSIGN UNUSED NUMBER BETWEEN 30,000 AND 32,999 FOR CAVES LOCATED IN LINCOLN NATIONAL FOREST; ASSIGN UNUSED NUMBER BETWEEN 20,000 AND 22,999 FOR CAVES LOCATED IN CARLSBAD CAVERNS NATIONAL PARK AND GUADALUPE MOUNTAINS NATIONAL PARK; ASSIGN OTHER UNUSED NUMBERS BY COUNTIES AFTER REFERRING TO THE NEW MEXICO CAVE INVENTORY (BLM LIST) FOR CAVE ON STATE AND PRIVATE LAND.
2	CAVE NAME	ASSIGN NAME; MAKE SURE NAME IS UNUSED. SOME CAVES ARE ALREADY KNOWN BY SEVERAL NAMES; IN THIS CASE THE FOLLOWING IS SUGGESTED FOR FINAL NAME ASSIGNING: A. HISTORIC NAME OR NAME GIVEN BY FIRST PERSON DISCOVERING CAVE. B. IF 'A' IS UNDETERMINABLE THEN USE THE NAME THAT HAS THE LEAST HINT TO THE TOPOGRAPHIC LOCATION OF THE CAVE. C. LIST ALL 'OTHER' NAMES ON A SEPARATE CARD WITH A REFERENCE TO THE FINAL ASSIGNED CAVE NAME. (1) LIST ALL 'OTHER' NAMES UNDER "REMARKS" ON CAVE CARD. (2) LIST ALL 'OTHER' NAMES IN THE MASTER CAVE FILE.
3	PHOTO NUMBER	LIST THE NUMBER OF THE AERIAL PHOTO THAT THE CAVE IS PLOTTED ON.
4	MASTER MAP	INDICATE IF CAVE LOCATION HAS BEEN PLOTTED ON THE MASTER CAVE MAP; Y - YES N - NO

NO.	ITEM	CODING, DESCRIPTION, AND INSTRUCTIONS
5	LEGAL LOCATION	STATE, COUNTY, RANGE, TOWNSHIP, SECTION, AND SUBSECTION TO THE NEAREST 1/4 OF 1/4 OF 1/4. ((EXAMPLE: --NEW MEXICO, EDDY, R22E, T25S, NE., NW., SW.))
6	GEOLOGIC FORMATION	START WITH THE FORMATION THE CAVE ENTRANCE IS LOCATED IN AND THEN THE PROGRESSIVE FORMATIONS ENCOUNTERED AS ONE WOULD MOVE FURTHER INTO THE CAVE.
7	ALTITUDE OF ENTRANCE	A4723 = ALTIMETER READING OF 4,723 FEET. E4750 = ESTIMATED READING OF 4,750 FEET USING CONTOURS ON TOPO MAPS.
8	TYPE OF CAVE	F - FISSURE P - PIT ONLY R - ROCK SHELTER S - SOLUTION T - TALUS
9	NUMBER OF LEVELS	1 - SINGLE 2 - TWO 3 - THREE 4 - ETC.
10	DOMINATE ROCK TYPE	CO - CONGLOMERATE DO - DOLOMITE GY - GYPSUM HA - HALITE IX - IGNEOUS TR - TRAVERTINE LS - LIMESTONE MX - OTHER METAMORPHIC SH - SHALE SO - SOIL SS - SANDSTONE
11	TYPE OF ENTRANCE	CODE AS MANY AS APPLY STARTING WITH THE 'MAIN' ENTRANCE L - LARGE HORIZONTAL (10 BY 10' OR LARGER; OR, MORE THAN 150 SQ. FT. H - SMALL HORIZONTAL (LESS THAN 10' BY 10' OR LESS THAN 150 SQ. FT. V - LARGE VERTICAL (SAME AS 'L' ABOVE). S - SMALL VERTICAL (SAME AS 'H' ABOVE). B - SIDE OR BOTTOM OF SINKHOLE. Q - QUARRY OR ROAD CUT GIVES ACCESS.

NO.	ITEM	CODING, DESCRIPTION, AND INSTRUCTIONS
12	NUMBER OF ENTRANCES	1 - ONE 2 - TWO 3 - THREE 4 - ETC.
13	LENGTH OF ALL PASSAGES (KNOWN)	S1250 = SURVEYED 1,250 FT. A1400 = APPROXIMATELY 1,400 FT.
14	PATTERN OF CAVE	S - SINGLE PASSAGE/ROOM ONLY P - PIT ONLY/NO PASSAGES OR ROOMS. R - RECTILINEAR PATTERN. D - DENDRITIC PATTERN, BIFURCATING. M - MAZE, BONEYARD, SOLUTION, ANASTOMOSED NETWORK. T - TRELLIS/JOINT CONTROL MAZE.
15	TREND OF CAVE FROM ENTRANCE	N24E = NORTH 24 EAST. S17W = SOUTH 17 WEST.
16	VERTICAL RELIEF OF CAVE	HIGHEST CEILING TO LOWEST FLOOR. S368 = SURVEYED 368 FEET. A425 = APPROXIMATELY 425 FEET.
17	WATER ELEMENT	CODE AS MANY AS APPLY. A - ARID, NO WATER. D - DRIPPING WATER. F - FLOODED. I - INTERMITTENTLY FLOODED L - LAKES PRESENT (100 SQ. FT. OF SURFACE AREA PLUS AN AVERAGE OF AT LEAST 6 INCHES DEEP). M - MOIST EARTH. P - POOLS PRESENT (LESS THAN LISTED FOR LAKES ABOVE). S - STREAM OR RIVER SYSTEM IN CAVE.
18	HAZARDS PRESENT	CODE AS MANY AS APPLY C - CONFUSING PASSAGEWAYS. G - GASSES PRESENT. L - LOOSE ROCKS OR CAVE-IN HAZARD. V - VERTICAL DROPS. W - WATER WITH NO ALTERNATE ROUTE.

NO.	ITEM	CODING, DESCRIPTION, AND INSTRUCTIONS
19	SPECIALIZED SKILLS REQUIRED	C - TECHNICAL CLIMBING. D - DIVING (SCUBA OR AIR HOSE). R - RAPELLING, PRUSIKING, CABLE LADDER CLIMBING, ETC. S - SWIMMING REQUIRING WET OR DRY SUITS.
20	CAVE CONTENTS	CODE AS MANY AS APPLY. A - ARCHAEOLOGICAL (ARTIFACTS). B - BIOLOGICAL (ORGANISMS). G - GEOLOGICAL (STRUCTURAL, HYDROLOGICAL, GENETIC). H - HISTORICAL. P - PALEONTOLOGICAL (FOSSILS). S - SPELEOTHEMS. N - NONE; CAVE, SHELTER, OR SINK OF NO SPECIAL ATTRACTION OR SIGNIFICANCE.
21	TYPE OF PROTECTION NEEDED	G - GATE H - SIGN CONCERNING HAZARDS. S - SIGN CONCERNING PROTECTION. P - PERMANENT CLOSURE (DYNAMITE, ETC.). N - NONE.
22	TYPE OF PROTECTION PROVIDED	SAME AS NO. 21 ABOVE.
23	CAVE MARKED AT ENTRANCE WITH BRASS CAP.	Y = YES. N = NO.
24	HINDS DUAL CLASSIFICATION CODING	HAZARD - A, B, C, D, OR E.* SIGNIFICANCE - I, II, III, IV, OR V.*

0 - IN ANY ENTRY INDICATES - DOES NOT APPLY.

* - THE CODINGS FOR HAZARD AND SIGNIFICANCE ARE EXPLAINED IN DETAIL IN THE CAVE MANAGEMENT PAPER BY ALLAN L. HINDS DATED 10-28-70 AND WILL BE ATTACHED.

CAVE CLASSIFICATION STANDARDS

I. Hazard Classes.

A. The Class A cave offers the least hazard to the cave visitor, and can be safely visited by 2 or more people with proper lighting equipment who observe safety rules.

1. Single, well-defined passageway, with no crawlways less than 3 feet in diameter.

2. No lateral passageways leading off of the main passageway.

3. No vertical drops over 3 feet.

4. No loose ceiling rocks.

5. Few loose rocks on floor.

B. The Class B cave contains moderate hazards, are mostly horizontal, and can be safely explored by 2 or more persons with limited experience, with proper equipment and the observing of safety rules.

1. Well defined main passageways, with only dead-end passageways leading away from the main passageway.

2. No step-type drops over 10 feet.

3. No crawlways less than 24 inches in diameter.

4. No loose ceiling rocks.

5. Loose floor material is permissible.

C. Class C caves contain moderate vertical hazards and can be safely explored by 3 or more persons with moderate vertical experience, proper vertical equipment, and by observing vertical safety rules.

1. Multiple passageways with straight connecting passages.

2. Crawlways less than 24 inches.

3. Loose rocks on passages over 6 feet in height, no loose rocks on passages less than 6 feet in height.

4. Vertical drops up to 50 feet.

D. Class D caves are the most hazardous from the structural standpoint. These caves can only be explored safely by 4 or more persons, with considerable experience, with proper equipment, and by observing all safety precautions. One person should remain on the surface.

1. "Maze" type passageways.

2. Vertical drops over 50 feet.

3. Loose ceiling rocks on crawlways under 6 feet in height.

E. Class E caves contain dangerous gasses, diseases, and/or poisonous insects or reptiles from which it is difficult to protect the cave explorer. Class E caves should only be entered by qualified cavers with special equipment, and only if there is a real necessity for information which is deemed valuable in relation to the risk involved. The minimum party should consist of 6 cavers, with 2 remaining on the surface. Extra safety precautions should be taken and special communications and rescue capabilities available.

II. Significance Classification.

Class I: This classification will be applied to caves which contain formations of little or no importance.

Class II: Class II caves are those which contain formations of the ordinary type, but which are not easily damaged.

Class III: Formations in the Class III caves are of the ordinary type, but are susceptible to breakage and vandalism.

Class IV: Class IV caves contain formations of unusual quality. Example of Class IV caves are those containing cave hair, gypsum flowers, etc.

Class V: Class V caves contain items of scientific importance. The scientific value could either be archeological, biological or historical in nature, or very rare cave formations.

IV. FIRE MANAGEMENT PLAN*

GUADALUPE MOUNTAINS NATIONAL PARK

This plan directs implementation of Guadalupe Mountains National Park's policy to:

A. Allow naturally occurring fires to run their natural course only within a limited designated burning unit (low desert country); (see attached map).

B. Exercise full control over fires occurring within the designated fire control units; (near park boundary and all of area within exterior boundaries of reef formation).

C. Exercise control over all man-caused fires regardless of location.

D. Initiate a research project utilizing Texas Tech and the Research Ecologist to make detailed studies of the potential effect of natural wildfire on the interior mountain and canyon country and specifically its effect on relict plant communities.

E. After such research is completed and upon direct recommendation of such research, consider additional areas to permit natural wildfire to run its course.

Action procedures to carry out this plan:

1. Maintain continuous observation both aerially and with ground personnel, to detect all fires within the park.

2. Fires of natural origin within the natural burning unit will not be contained, but will be monitored during their course. If possible, fires well within natural burning unit will be observed from ground if accessible, or from the air. All fires near a unit boundary will be observed by ground personnel.

3. Fires judged by overhead personnel to be threatening to jump management unit boundaries will be manned for containment within a normal burning period.

4. Fires within the control units will be manned and contained as quickly as possible. Helicopters may be used to transport men and equipment if conditions warrant.

5. All man-caused fires within the park will be manned and contained.

6. At any time the Superintendent can assume direction of fire suppression efforts and order control of any fire in the area if he deems park values and management objectives would be best served by such action. This includes total containment or actions to generally limit fire size.

7. Data will be gathered on all fires, both those contained and those allowed to burn, to assist future management: cause, weather, size, vegetation, burning behavior. Followup investigations will be made to determine: recovery rates for vegetation, and effects on undesirable vegetation types.

Fire Equipment Data for Fire Management Plan
Guadalupe Mountains National Park

BASIC FIRE EQUIPMENT AVAILABLE:

The following includes the ability to tool-up fire fighters with a basic inventory of a shovel, pulaski, canteen, hard hat, tool file, head lamp, pocket first aid kit, and ration kits for each man. In addition, other first aid items and partial tool inventories are on hand.

Frijole

Initial equipment for 16 fire fighters is on hand. In addition, this is the main cache for the park and additional partial equipment is on hand here, such as McLeods, two five-gallon back pack pumps, hard hats, first aid gear, headlamps, batteries, paper sleeping bags, and other miscellaneous items.

Bowl Cabin

Basic tool complement for four fire fighters. In addition, the cabin is stocked with Coleman stove and lantern with fuel, and additional food for emergency use.

Rock House in McKittrick Canyon

Basic tool complement for four fire fighters.

Dog Canyon Ranger Station

Basic tool complement for 12 fire fighters. In addition, there are other miscellaneous first aid and tool items for both fire and rescue needs.

The park has one truck-mounted fire pumper with a capacity of 100 gallons and 200 feet of hose for use along roads and other easily accessible areas.

It has capability to draft water; however, in this area that is seldom encountered with the scarcity of water. The truck also contains tools for two men and one five-gallon back pack pump.

Additional fire tools and manpower are available at Carlsbad Caverns National Park on fairly short notice.

MANPOWER

Within the park all personnel are available as needed for fires. Forestry and Fire Control funding has paid for two seasonal aids, one at Frijole, one at Dog Canyon, from approximately May through October each year. The Protection Division includes the Chief of Park Operations, one Park Technician at Frijole, one Park Technician (Subject-to-Furlough) at Dog Canyon, and one seasonal Park Ranger. The Staff Resources Management Specialist for both Guadalupe Mountains and Carlsbad Caverns lives at Frijole. Available Maintenance personnel include a Maintenance Foreman, a Road and Trails Maintenance worker, and two seasonal laborers.

8. Fire reports and followup investigation findings will be made available to the Park Biologist and cooperating agencies and institutions which are conducting resources management research in the park to aid in future management decisions.

9. The upcoming Natural Resource Research Studies should deal specifically with the matter of wildfire and recommend areas of the park where it could prove beneficial.

10. The Research Ecologist for the park should also engage in specific research coordinated with the Texas Tech Study on wildfire effects on the peculiar ecosystem of this park.

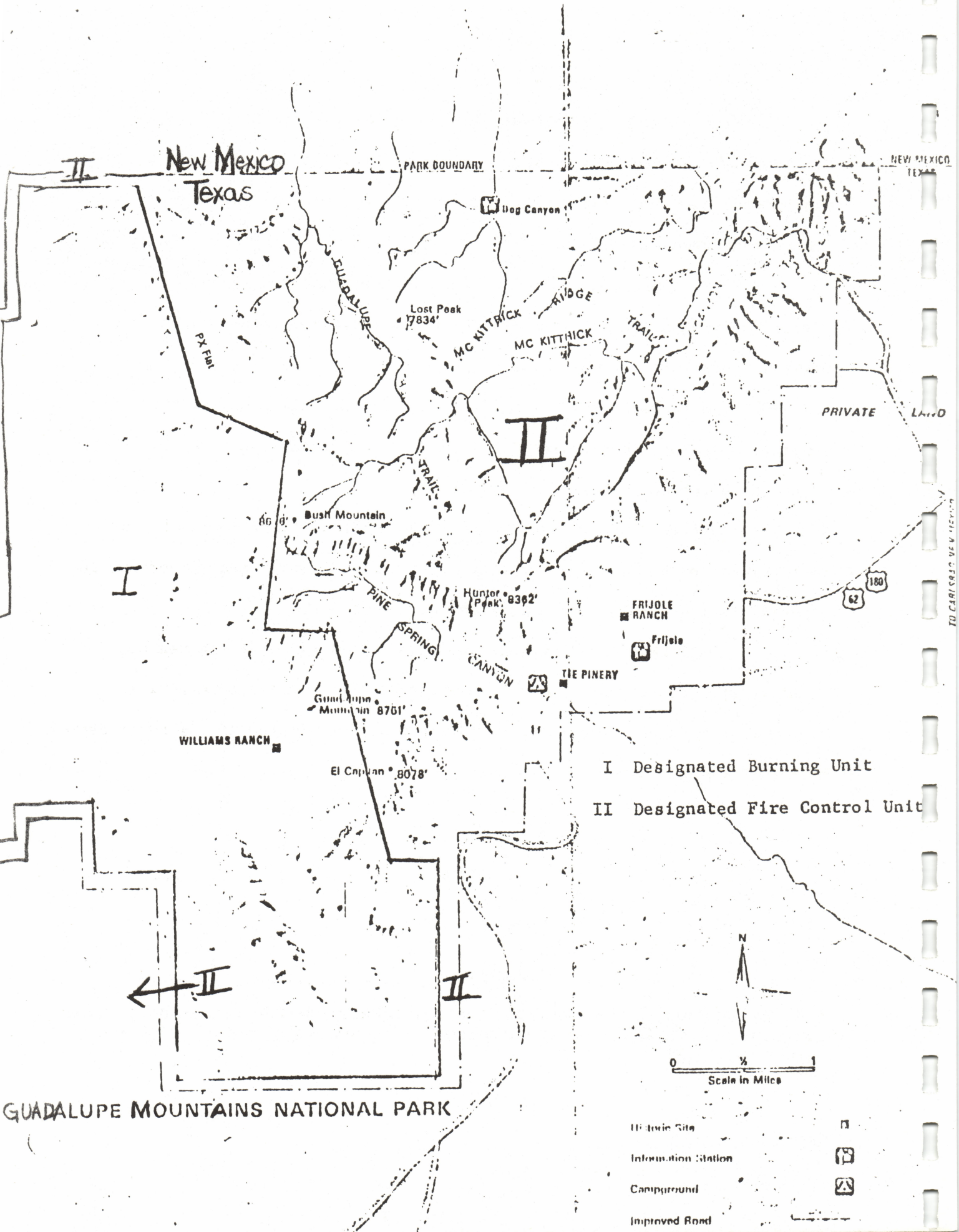
11. Further research studies will be initiated to determine the most feasible method of thinning and reducing the artificially heavy reproduction of heavy fuel accumulation in portions of the "Bowl."

12. Until research is completed on the feasibility of the use of wildfire as a management tool in the interior of the park, funding will be needed to continue a comprehensive fire protection program in all the rugged high country and canyons of the park.

Recommended:_____

Approved: _____

* A revised plan is underway, but was not quite ready for inclusion in this publication. This present plan, meanwhile, received interim approval on January 8, 1975.


New Mexico
Texas
PARK BOUNDARY
Dog Canyon
GUADALUPE
Lost Peak
7834'
MC KITTRICK RIDGE TRAIL
MC KITTRICK
PX Fld
PRIVATE
TRAIL
Bush Mountain
PINE SPRING CANYON
Hunter Peak 8382'
FRIJOLE RANCH
Frijole
TIE PINERY
Guadalupe Mountain 8751'
WILLIAMS RANCH
El Capitan 8078'
I Designated Burning Unit
II Designated Fire Control Unit
N
0
½
1
Scale in Miles
Historic Site
Information Station
Campground
Improved Road
GUADALUPE MOUNTAINS NATIONAL PARK

V. DEER AND DEER HABITAT MANAGEMENT PROGRAM

Extended research on deer management by the Biologist at Carlsbad Caverns National Park has resulted in the following determinations:

1. The park deer population has not reached such size in recent years as to seriously damage its range.

2. Choice browse, while often heavily utilized, is not being destroyed by deer.

3. Climatic conditions often have greater effect on forage plants in the park than do deer.

4. Deer populations in the park fluctuate from year to year, due largely to climatic conditions.

5. Increased hunting pressure adjacent to the park boundary could play a stronger role in control of the park deer population.

6. Deer range conditions in the park appear to be at least as good as on adjacent lands.

The following steps are planned to properly manage the deer and range habitat:

1. Continue to monitor deer and range conditions, utilizing methods and transects established.

2. Continue the established program of inventorying surface water resources, including seeps and springs.

3. Inaugurate a cooperative vegetation survey with U. S. Forest Service, Bureau of Land Management, and New Mexico Department of Game and Fish to compare deer range conditions within the park to those outside the park.

4. Institute a program of cooperative reading of deer pellet-group transects and interpreting resultant data from park and non-park lands, involving personnel from above agencies.

5. Seek participation of State Game and Fish Department and U. S. Forest Service in a cooperative program of deer tagging in and near Guadalupe Mountains National Park to determine deer movement in the region, as well as to provide other data on deer longevity, condition, etc.

6. Continue quarterly visual deer counts by rangers and interpret data.

7. If the above listed cooperative studies indicate that over-population of deer exists within Carlsbad Caverns National Park, a request will be made to Texas Parks and Wildlife that special either sex-deer

hunts be held to reduce deer on lands surrounding the national park.

8. After special deer hunts have been given full trial adjacent to the park, conduct further cooperative research on deer populations within the park, study the efficacy of direct reduction in the park, using deputized personnel as a means of deer population control.

VI. ARCHEOLOGICAL MANAGEMENT PLAN

The most up-to-date document for archeology at the present time is An Inventory and Interpretation of Prehistoric Resources in Guadalupe Mountains National Park, Texas, by Susanna R. and Paul R. Katz of the Department of Anthropology, Texas Tech University. It was published December 1974 and was prepared in fulfillment of NPS Contract #CX700030203. It includes previous research, site lists, bibliography, and recommendations. As such, it is a documentation of archeological values, not a management plan. It is available for reference at the Southwest Regional Office and the Park Headquarters in Carlsbad. An Official Archeological Management Plan will be published in the future.

VII. HISTORICAL MANAGEMENT PLAN

A Historical Management Plan for Guadalupe Mountains National Park is not currently available, but is being prepared for publication in the future. The most comprehensive document available now is A Survey of Historical Structures of Guadalupe Mountains National Park, Texas, by Texas Tech University, College of Agricultural Science, Department of Park Administration and Horticulture, Lubbock, Texas. It was published September 1973 under NPS Contract #CX700030193. It contains a description of sites, a bibliography of references used, and recommendations. As such, it is a documentation of historical values, not a management plan. It is obtainable from the Southwest Regional Office and the Park Headquarters in Carlsbad.

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.