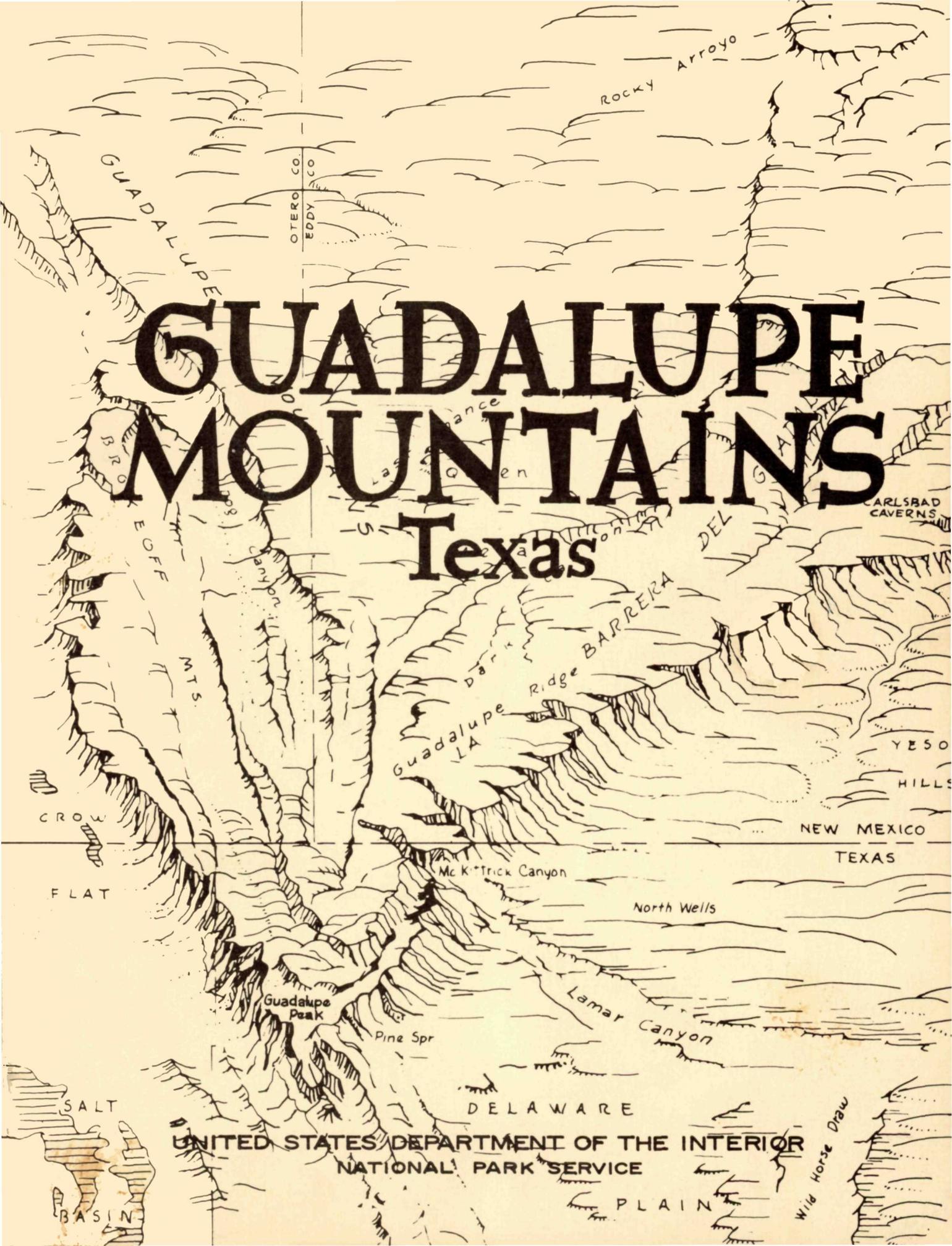


GUADALUPE MOUNTAINS

Texas



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

AREA INVESTIGATION REPORT

on

A

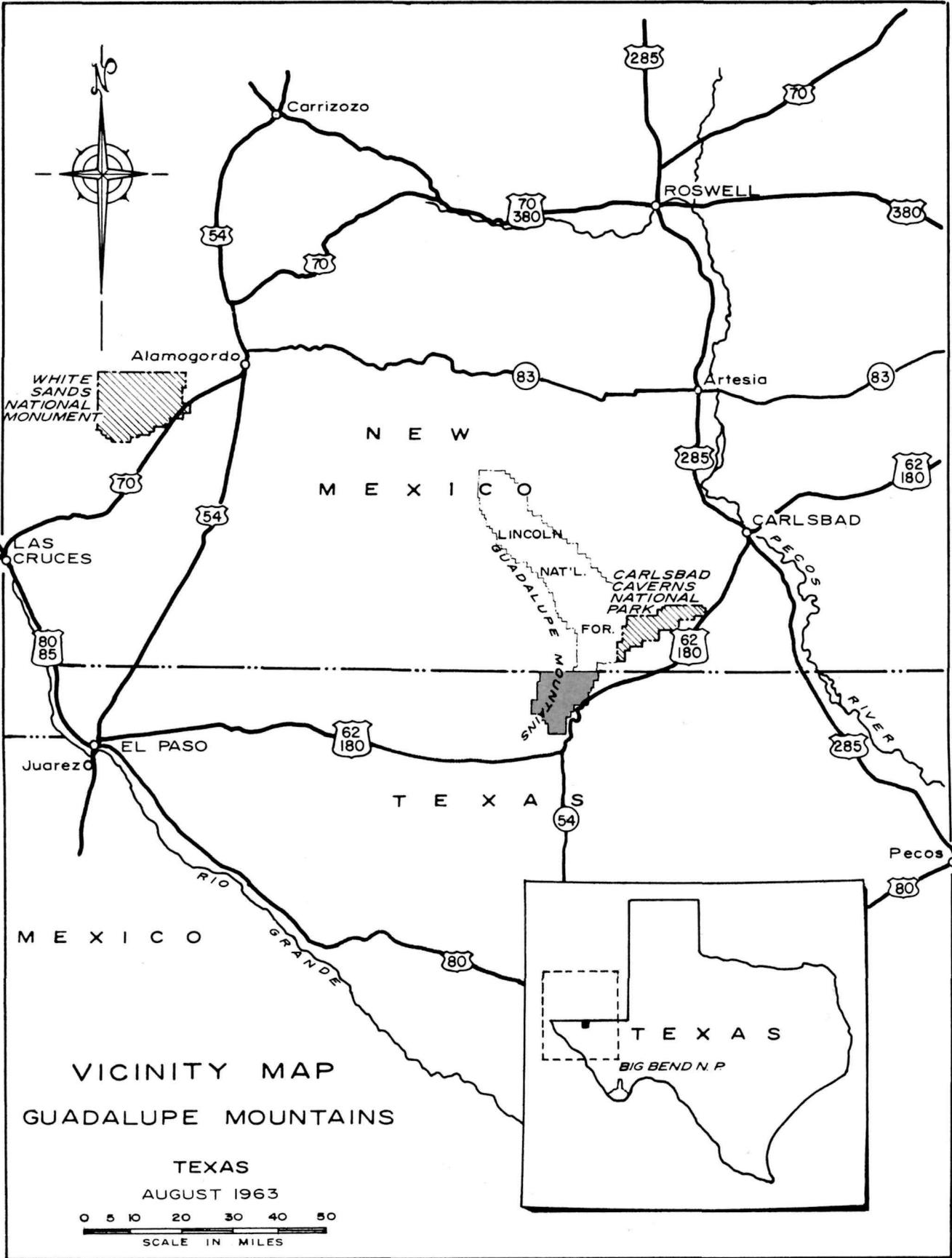
Proposed Guadalupe Mountains National Park

Texas

Southwest Regional Office
National Park Service

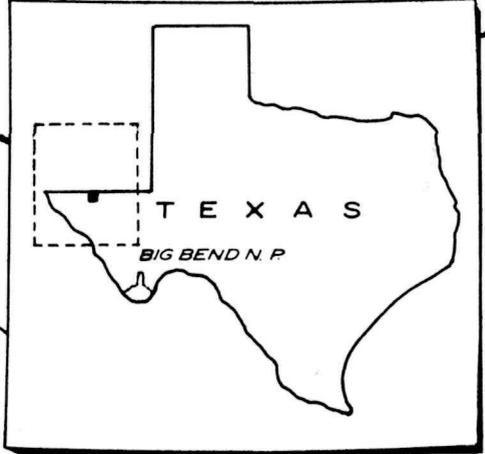
U.S. Department of the Interior

September 1963



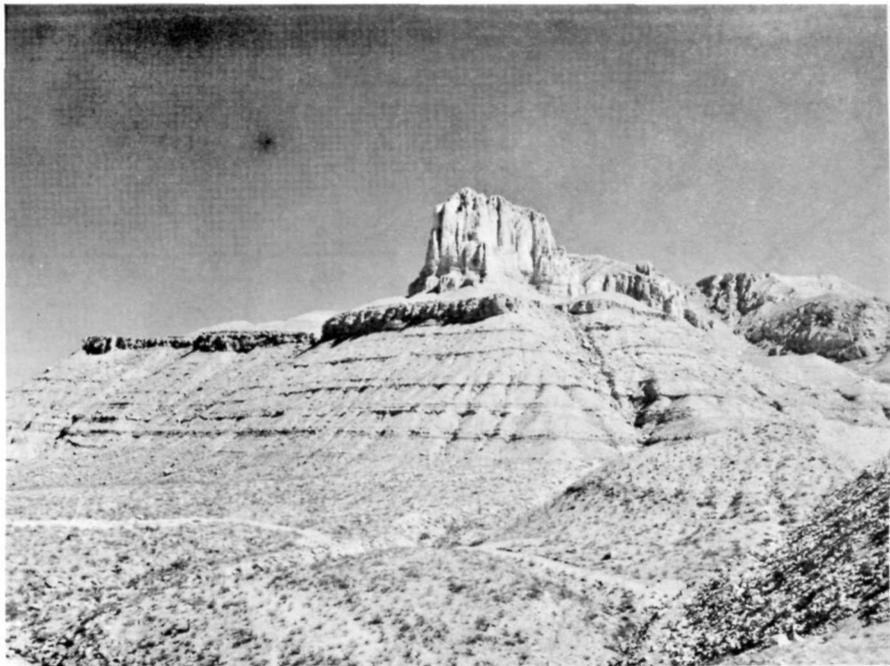
VICINITY MAP
 GUADALUPE MOUNTAINS

TEXAS
 AUGUST 1963
 0 5 10 20 30 40 50
 SCALE IN MILES





Air view of the Guadalupe Mountains from the southwest. The mountains rise toward the viewer, and culminate in Guadalupe Peak and El Capitan at the point of the "V".



From Guadalupe Pass, El Capitan blocks out the summit of Guadalupe Peak.

SUMMARY

The Guadalupe Mountains of south-central New Mexico and trans-Pecos Texas are composed of Permian marine limestones and contain what has been called the most extensive and significant fossil reef in the world. The range resembles a huge "V" with the point of the "V" in Culberson County, Texas, and the two arms extending northwestward and northeastward into New Mexico. Carlsbad Caverns National Park and part of the Lincoln National Forest are on the northeast arm, and part of the Lincoln National Forest is also on the northwest arm. The latter arm eventually merges with the Sacramento Mountains.

The Texas section of the Guadalupe Mountains is about 110 miles from El Paso, Texas, and 55 miles from Carlsbad, New Mexico. It is skirted by U.S. Highway 62-180.

This report describes the potential of the area and some of its possibilities for development. The Texas section of the Guadalupe Mountains is highly significant geologically and ecologically, and is also ideally suitable for outdoor recreational purposes.

In 1961 the acceptance of Mr. Wallace Pratt's generous donation of 5,632 acres in the North McKittrick Canyon area of the

Guadalupes was completed. Development terrain there is limited by the restricted canyon bottom and the fragile nature of the environment. This area should be administered to combine use by park visitors on foot with preservation of the scientific values.

Additional land is needed in order to display the geologic story to more advantage, as well as to provide room for development and for visitor use. The land is now available, for Mr. J. C. Hunter, Jr., of Abilene, Texas, owns some 71,790 acres of land comprising most of the rest of the Guadalupe Mountains in Texas. The ranch is for sale, and Mr. Hunter would prefer that it be preserved for public use. The ranch should be acquired by the Federal Government and, combined with the North McKittrick Canyon lands, established as a National Park. Management should be such as to preserve the fragile nature of North and South McKittrick Canyons, while developing the higher reaches of the Guadalupes to the south for inspirational, interpretive, and recreational use.

INTRODUCTION

The Guadalupe Mountains form the southern terminus of the exposed part of the Capitan Reef, a highland area that rises from an elevation of 3,100 feet, in the Pecos Valley near Carlsbad, New Mexico, to 8,751 feet in Texas, 60 miles to the southwest. At the south end of the Guadalupes, 4,000 feet of Permian rocks are magnificently exposed. The headland, El Capitan, with its sheer, thousand-foot cliff, is visible for 50 miles or more. The Guadalupes separate the Salt Basin on the west from the Delaware Basin on the east. They are an eastward-tilted block uplift of asymmetrical structure, with a complex zone of high-angle faults along the west side. Deep canyons, incised in the highland by running water, contain a unique assemblage of plants and animals that is, at least in part, a relict association of the Pleistocene epoch.

In October 1938, a report entitled Some Geological Observations on the Guadalupe Mountains was submitted by Junior Geologist Ross Maxwell, and a companion report prepared for the Texas State Parks Board entitled Narrative Report on McKittrick Canyon was submitted by Assistant Landscape Architect Obert. The first report summarized the general geology of the area, and the second commended the area to

the State for the finest state park in Texas. In 1945 a National Park Service study suggested state ownership for park purposes of the McKittrick Canyon-Guadalupe Peak section of the Guadalupe Mountains of Texas. The report also concluded that the Federal Government should accept the area should it be offered.

The Guadalupe Mountains have been the subject of considerable study, resulting in the following reports:

"Geology of the Southern Guadalupe Mountains, Texas," by Philip E. King, Geological Survey Professional Paper 215, 1948.

Mammals of the Guadalupe Mountains of Western Texas, by William B. Davis, Louisiana State University Press, 1940.

Birds of the Guadalupe Mountain Region of Western Texas, by Thomas D. Burleigh and George H. Lowery, Jr., Louisiana State University Press, 1940.

The Permian Reef Complex of the Guadalupe Mountain Region, Texas and New Mexico, by Newell, Rigby, Fisher, Whiteman, Hickox, and Bradley, W. H. Freeman and Co., 1953.

"Caves along the Slopes of the Guadalupe Mountains," by Edgar B. Howard, Bulletin of the Texas Archeological and Paleontological Society, Vol. IV, September 1932.

An Excavation of Hermit's Cave, New Mexico, by Edwin N. Ferdon, Jr., University of New Mexico Press, 1946.

"Archeological Research in the Guadalupe Mountains," by Edgar B. Howard, The Museum Journal, Vol. XXI, Numbers 3 and 4, The University Museum, University of Pennsylvania, 1930.

Numerous periodical accounts of the Guadalupe have been noted; one of them in the Dearborn Independent, dating back to June 1925, proposes National Park status. The Texas Parade of August 1940 tells of exploration in McKittrick Canyon and hints at state park status for the area, while a September 1959 issue of the same magazine reports on the Pratt donation of North McKittrick to the National Park Service. Several issues of Texas Game and Fish contain articles on the elk, deer, and turkey populations of the Guadalupe Mountains. Papers with subjects more centered on Carlsbad Caverns, but applicable to the Guadalupe as well, have been prepared by, or in conjunction with, the personnel at Carlsbad. These are as follows:

Amphibians and Reptiles of Carlsbad Caverns National Park, New Mexico, by Frederick R. Gehlbach and the Park Interpretive Staff, 1959.

Summary of Zoological Field Investigations Made by Frederick R. Gehlbach at Carlsbad Caverns National Park in 1959 and 1960.

Mammals of Carlsbad Caverns National Park, New Mexico, by
Park Staff, 1960.

A Checklist of the Birds of Carlsbad Caverns National Park,
Park Publication, 1960.

The present report is based upon field investigations made by the Regional Director of the Southwest Region and by staff members of the regional office and of Carlsbad Caverns National Park. There were three main investigations, in April 1958, May 1961, and June 1963. Most of the geologic material was provided by Mr. Bennett T. Gale, of the Western Regional Office, and most of the material on botany, animal life, archeology, and history was provided by Park Naturalist Paul Spangle.

Of the many attributes that contribute to the significance of the area, the geology must be given highest priority. Although Carlsbad Caverns National Park and North McKittrick Canyon contain prime examples of the Capitan Reef and Permian Basin geology, the scenic and spectacular southern end of the Guadalupe Mountain Range further complements this superb display by providing exposures of back-reef and fore-reef beds not found elsewhere, as well as showing the most dramatic cross-section of the fossil reef. Add to the geology the

unique ecological assemblage in both branches of McKittrick Canyon, as well as the highest and possibly the ruggedest, most scenic portions of Texas, and the park and recreation potential of the area is evident.

SIGNIFICANCE AND NEED FOR CONSERVATION

The significance of the whole area vastly exceeds that of the North McKittrick Canyon lands already acquired through donation. To provide development terrain, buffering protection, and to secure scenic, geologic, and biologic displays which surpass those of the land already in National Park Service ownership, additional lands including South McKittrick Canyon should be set aside for park purposes. Acquisition of the higher Guadalupe Mountains would contribute lands suitable for campground and picnic use, and these lands would form a noteworthy site for a high, cool, scenic drive, which should eventually link with a ridge road from the north.

The scenic road would leave U.S. Highway 62-180 approximately at Pine Spring Camp and would ascend the north wall of Pine Spring Canyon, topping out somewhere near Bush Mountain. From there one fork would follow the ridge eastward toward Pine Top Mountain and down to The Bowl, and another branch would follow the Blue Ridge and the divide between West Dog and South McKittrick Canyons. This drive would provide a delightfully cool and dramatically different tour for visitors coming to the Guadalupe Mountains across the surrounding desert. From this road there would be superb views across great distances,

and the contrast of closeup views of vegetation and animals far different from those of the surrounding lowlands. The road would be ideal for pull-offs and interpretive devices located to explain the geologic and ecologic stories, including the abrupt and obvious difference in vegetation patterns on north and south slopes. This road would allow relatively heavy use of the higher Guadalupe Mountains without posing a threat to the very fragile values of North and South McKittrick Canyons. A high-country campground, probably in The Bowl, would be very desirable.

Eventually this road should continue eastward along the ridge of the Guadalupe, through the Lincoln National Forest, to the western end of Carlsbad Caverns National Park, and thence along the ridge to the cave itself. Such a road would provide a loop trip for the caverns visitors, who would be able to continue westward along the ridge, through higher and higher country, to the scenic culmination in the high Guadalupe.

General Description of Area

The Guadalupe range is wedge-shaped, the southern extremity of a limestone upland extending northward into New Mexico. The point of the wedge is El Capitan, a landmark visible for over

fifty miles. Directly north of El Capitan is Guadalupe Peak, 8,751 feet in elevation, the highest point in Texas. The southeastern edge of this upland is a steeply dipping escarpment known as La Barrera del Guadalupe. The western side of the wedge, trending west of north, considered the main Guadalupe Mountains and including a small parallel range, the Brokeoff Mountains, is bounded by a tremendous fault scarp.

Between the two escarpments is a pine-covered rolling highland deeply incised by canyons. To the north the range gradually fades into the Pecos Valley.

Elevations range from 3,650 feet at the base of the western escarpment to 8,751 feet at Guadalupe Peak. Ecological associations range from Lower Sonoran in the typical Chihuahuan Desert environment at the lowest elevations to Transition zone with some Canadian zone elements in the highlands. Zones within the area are modified by slope, exposure, and moisture conditions.

Geology

The Guadalupe Mountains present a spectacular exposure of the famous Capitan barrier reef and its contemporaneous fore-reef and back-reef marine deposits. The fine display of the

several facies of Permian sediments gives the area its prime scientific significance and makes it of outstanding interest to the world's stratigraphers and paleontologists. The world's best known fossil reefs are found within this region. The Capitan, the greatest of the reefs, has been described by Dr. Norman Newell of the American Museum of Natural History as the most extensive fossil organic reef on record.

The controlling factor in the deposition of the rocks of the Guadalupe Mountains region was the presence in a large part of Texas and New Mexico of a marine basin throughout the Permian period. A portion of that basin, the Delaware Basin, comprising some 10,000 square miles, was the major influence in the formation of the rocks with which we are interested. This basin was roughly oval in shape with a channel to the open sea situated to the southwest of the depression.

The deep-water, well-stratified deposits of the Delaware Basin grade laterally into the thicker and more massive beds of the reefs. The latter structures were built in the shallower water along the periphery of the basin. The most impressive of these, the Capitan reef, formed a narrow but effective barrier which extended in the form of a giant horseshoe 350

to 400 miles around the basin's margin. The Capitan is well exposed for a distance of some 40 miles along the escarpment separating Guadalupe Ridge from the lower lands of the present Delaware Basin. The older portion of the reef can be seen at the mouth of Walnut Canyon and in other canyons in Carlsbad Caverns National Park, and McKittrick Canyon displays a fine exposure of the middle part of the reef and of the gradational change from fore-reef beds to the massive reef itself.

Lime-secreting algae were chiefly responsible for the growth of this barrier, and other organisms contributed their remains to the structure and aided in trapping and holding limey sand in the growing deposit. Except for its oval shape, the Capitan is similar to present-day barrier reefs in the Pacific.

Associated with the reef proper are thick-bedded, steeply dipping rocks that represent recrystallized talus slopes built forward in comparatively deep water and advancing in front of the reef margin. The growth of the Capitan reef was more in a horizontal than vertical direction and, apparently, the reef grew largely on its own talus. Another important feature of the zone between the reef and the fore-reef deposits is the presence of large blocks of rock which slid down the slopes



View south, up Shattuck Valley and Upper Dog Canyon to the high Guadalupe in the distance.



The high Guadalupe, from the north. Upper Dog Canyon, right; North and South McKittrick Canyons drain from center to the left.



West side fault scarp from the air. Vertical relief between salt flats at right and the high peaks, center, is 5,000 feet.



The Capitan Reef and associated formations are cross-sectioned by North McKittrick Canyon (here seen from the rim above South McKittrick). La Barrera del Guadalupe extends northeastward into the distance to Carlsbad Caverns National Park.

in front of the reef and were incorporated in the basin deposits. These blocks as well as other evidence of submarine slides are seen to advantage at the mouth of McKittrick Canyon and its nearby vicinity.

Behind the Capitan reef in the shelf or lagoonal area, different types of sediments accumulated simultaneously with the reef and fore-reef deposits. These back-reef equivalents consist predominantly of dolomite with interbedded fine-grained sandstone. Farther behind the reef, in the increasingly saline waters of the shelf, these deposits grade rapidly into evaporites. The near-reef lagoonal beds are well displayed in many places along Guadalupe Ridge, and two of the units of this group of rocks -- the Tansill and the Yates -- can be seen in the McKittrick Canyon area.

The section of the Guadalupes here proposed for inclusion in the National Park System contains superb exposures of most of the Permian rocks deposited in the Delaware Basin. All the formations of Leonard and Guadalupe time are exposed in the tremendous fault scarp bounding the range on the west. There the relationship of the two main reefs (Goat Seep and Capitan)

to their basin and shelf equivalents is clearly visible to the geologist and, with but little interpretation, to the layman. The exposures in North and South McKittrick Canyons are also classic and of interest to scientists throughout the world.

It is the remarkable display of deep-water basin deposits, of reef and reef talus, and of shallow-water shelf sediments, all formed at the same time but differing because of differences in the environments in which they originated, that gives this region its geologic significance.

Botany

To describe adequately the complex botany of the region, it is necessary to analyze the varied ecological factors that prevail in it. First, at the base of the western escarpment there is exhibited a typical Chihuahuan Desert influence with an abundance of walkingstick cholla (Opuntia imbricata), lechuguilla (Agave lechuguilla) and creosotebush (Larrea tridentata). At the base of the barrera, centuryplant (Agave parryi) and one-seed juniper (Juniperus monosperma) are accompanied by sotol (Dasyliirion leiophyllum) and several varieties of acacia and mimosa. Here the first of the ecological controls, water, takes over. In dry stream channels,

Texas walnut (Juglans rupestris), netleaf hackberry (Celtis reticulata), Texas madrone (Arbutus texanum), and numerous shrubs appear. At one place outside McKittrick Canyon, there are a few ponderosa pine (Pinus ponderosa) growing in a stream channel at least two miles from the base of the escarpment. Historical references mention the abundance of ponderosa pines along the lower canyons.

South McKittrick Canyon itself offers an ever-changing botanical picture. In its lower reaches where the canyon is wider, the slopes are covered with ponderosa pine, alligator-bark juniper (Juniperus deppeana), madrone, gray oak (Quercus grisea), and numerous shrubs. In this lower canyon area along the canyon floor, the presence of a permanent stream further influences a varied growth including ponderosa pine, madrone, alligator-bark juniper, Rocky Mountain juniper (Juniperus scopulorum), walnut, chokecherry (Prunus virginiana), chinquapin oak (Quercus muhlenbergii), and an occasional Douglas-fir (Pseudotsuga menziesii). As the canyon walls narrow and become increasingly higher, the above-mentioned trees and shrubs are joined by limber pine (Pinus flexilis), bigtooth maple (Acer grandidentatum), hop-tree (Ptelea trifoliata),

and Knowlton's hop-hornbeam (Ostrya knowltonii). Three yuccas, Yucca torreyi, elata, and faxoniana, are found in the lower canyon areas, while far up the canyon baccata takes over.

In the highlands, from the rim of the escarpment bordering Pine Spring Canyon through The Bowl and the head of South McKittrick Canyon, there is a strongly contrasting botanical province. In the higher area is a forest of ponderosa and limber pines, interspersed with numerous Douglas-fir. Here, too, are found a few quaking aspen (Populus tremuloides) and Gambel oak (Quercus gambelii). This area ranges upward from the Transition zone to the edge of the Canadian zone. Through the head of South McKittrick Canyon these trees continue with a scattering of velvet ash (Fraxinus velutina) and serviceberry (Amelanchier sp.). On the ridges flanking both forks of McKittrick Canyon the flora changes considerably. The narrow, windswept ridges are covered with alligator-bark juniper, pinyon pine (Pinus edulis), centuryplant, sotol, and yucca. Open upper slopes of the canyons are covered with typical Lower Sonoran vegetation, ridge tops with Upper Sonoran vegetation, and shaded draws and canyon floors with Transition growth.

Animal Life

It is a fortunate situation that both owners of McKittrick Canyon and the southern Guadalupe Mountains have been conservation minded in game and timber management. The two landholders have had control of the entire region since the early 1920's and, except for a very limited annual deer and elk hunt in the highland area, little disturbance of the wildlife balance has occurred. No hunting whatsoever has taken place within McKittrick Canyon since it has been under the control of Messrs. Pratt and Hunter.

In addition to nearly complete protection of animal life, a program of reintroduction has been carried on by Hunter. In 1925 and 1926, the late J. C. Hunter, Sr., imported 44 elk. Since that time, the herd has increased to approximately 300 in the Texas section of the Guadalupe. In addition, turkey were planted in 1954 and have become well established. Both reintroductions were based on previous range data indicating that both species were once abundant in the region. The present turkey is the same subspecies as the original. However, based on present determinations, the native elk (Cervus merriami), now extinct, is a species distinct from that reintroduced (Cervus canadensis nelsoni).

In addition to the above-mentioned elk, other large mammals found are mule deer (Odocoileus hemionus), very common throughout the highland canyons and spreading into the rolling country at the base of the escarpment. Bighorn (Ovis canadensis mexicana) were common throughout the Guadalupe, but have been nearly wiped out. Recent observations indicate that a small group may still be resident in the area.

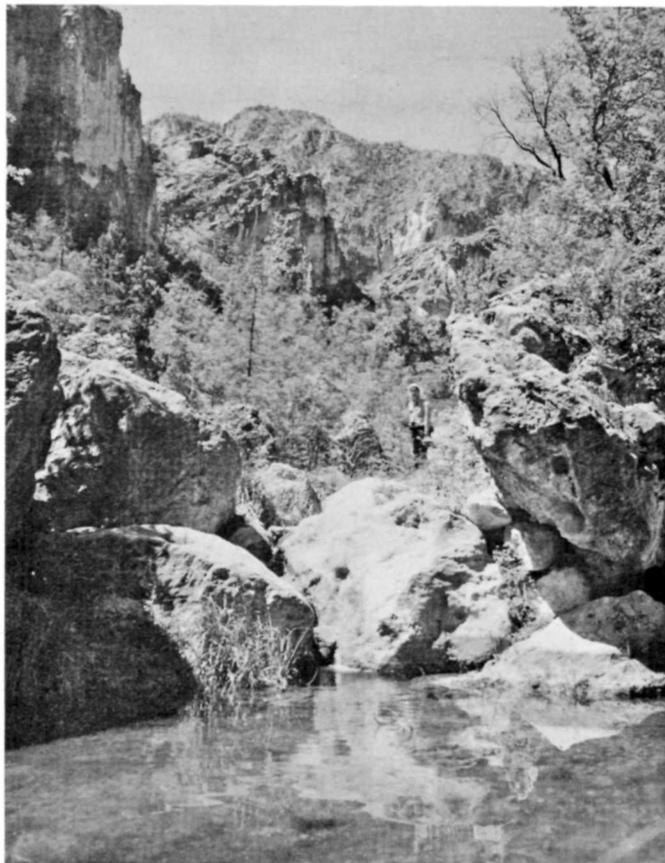
Although no pronghorn (Antilocapra americana) were observed in the area, they are known to exist at the base of the escarpment a few miles to the north and along the El Paso highway to the southwest.

Among the large carnivores, a very few mountain lions (Felis concolor) and black bear (Ursus americana) still exist in the rougher canyon areas.

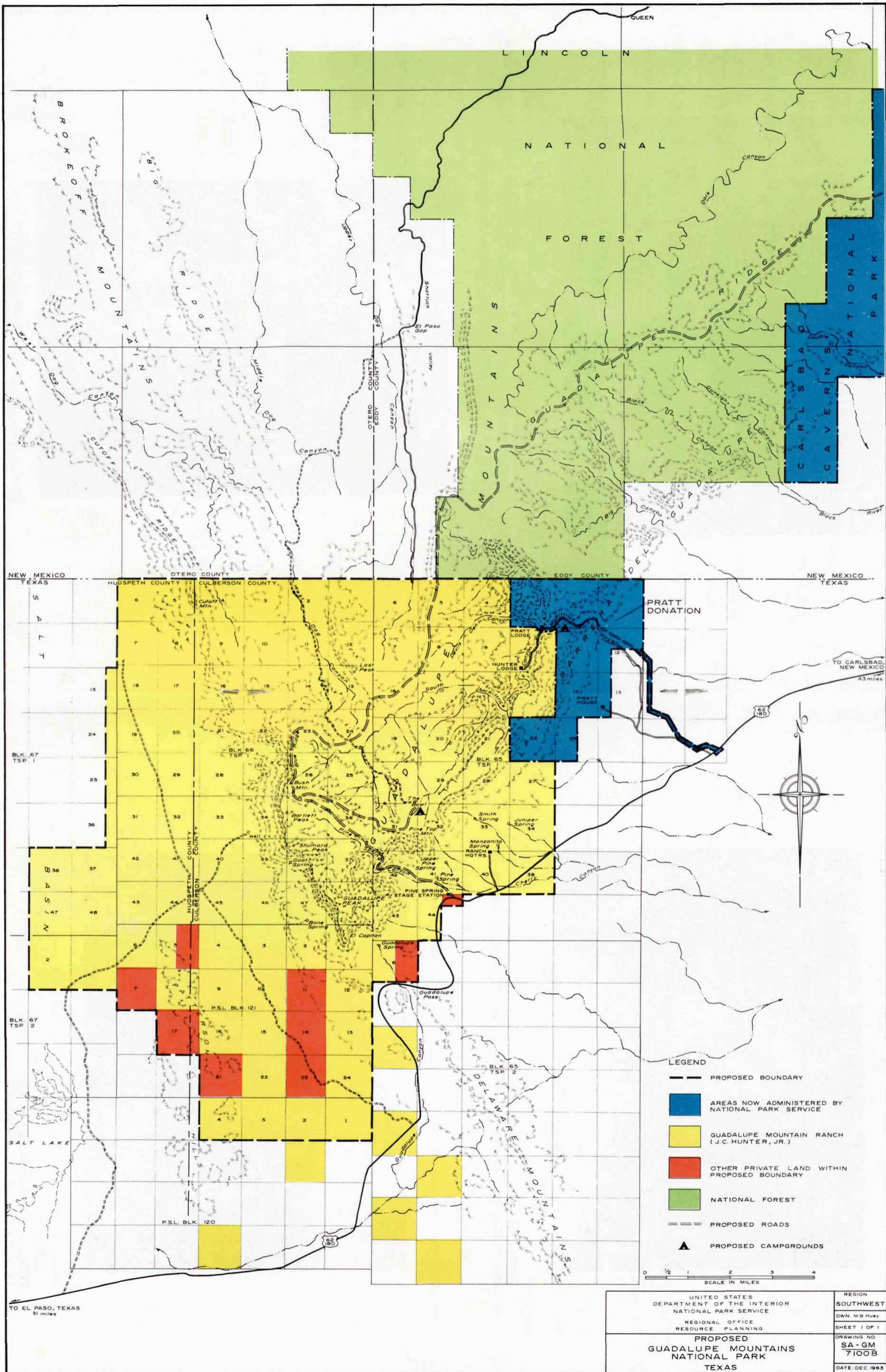
The following list of smaller mammals includes only those of general interest. Bobcats (Lynx rufus) are fairly common throughout the area. Raccoons (Procyon lotor), ringtails (Bassariscus astutus), three species of skunks -- striped (Mephitis mephitis), hog-nosed (Conepatus mesoleucus), and spotted (Spilogale gracilis) -- jackrabbits (Lepus californicus),



West side fault scarp from the air. Lower Sonoran Chihuahuan desert in valley at right, to Transition Zone forest, left center. If any bighorn remain in region, they are in the crags of Cutoff Ridge and the Brokeoff Mountains, foreground.



Unique ecological association borders the permanent stream in South McKittrick Canyon.



- LEGEND**
- PROPOSED BOUNDARY
 - AREAS NOW ADMINISTERED BY NATIONAL PARK SERVICE
 - GUADALUPE MOUNTAIN RANCH (J.C. HUNTER, JR.)
 - OTHER PRIVATE LAND WITHIN PROPOSED BOUNDARY
 - NATIONAL FOREST
 - PROPOSED ROADS
 - PROPOSED CAMPGROUNDS

0 1/2 1 2 3 4
SCALE IN MILES

TO EL PASO, TEXAS
91 miles

TO CARLSBAD, NEW MEXICO
43 miles

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE REGIONAL OFFICE RESOURCE PLANNING	REGION SOUTHWEST DWN. MB Huey SHEET 1 OF 1 DRAWING NO. SA-GM 7100B DATE: DEC. 1963
PROPOSED GUADALUPE MOUNTAINS NATIONAL PARK TEXAS	



Forest along upper South McKittrick Canyon drainage. Predominantly ponderosa pine with hardwoods along dry streambed.



Dramatic differences in plant associations in upper South McKittrick Canyon -- from Lower Sonoran to extreme upper Transition, depending on slope, soil, and exposure. This is elk country.

cottontail (Sylvilagus auduboni), rock squirrels (Citellus variegatus), antelope ground squirrels (Citellus interpres), coyote (Canis latrans), gray fox (Urocyon cinereoargenteus), and porcupine (Erethizon dorsatum) are all fairly common to the region.

A list of birds of the region is included in the observations prepared by collaborator F. E. Gehlbach during the summer of 1960.

The same checklist includes a list of amphibians and reptiles observed during the same period. Listed also are two fishes found in McKittrick Canyon. Both of these fishes, rainbow trout (Salmo gairdneri) and long-ear sunfish (Lopomis megalotis), have been introduced. As far as can be determined, there are no native fish.

Archeology

The archeology of the Guadalupe Mountains of southeast New Mexico and west Texas is probably the least known of any culture in the Southwest. Work was done as early as 1925 by J. Walter Fewkes of the Bureau of American Ethnology, and has continued up through the years by various other workers.

Information gleaned from isolated projects indicates a long-term occupancy beginning at 6,000 years ago. This is proposed because of now-extinct mammals such as Taylor bison, four-horned antelope, early horse, muskox, and others, found in association with occupied cave sites. At one site, Hermit Cave in Last Chance Canyon, C-14 dates of over 12,000 years have been obtained. Other sites have yielded pottery dated approximately 600 years ago. The latest inhabitants of the region were Mescalero Apaches in residence at the coming of the white man. The early cultures until the coming of the Apaches were rather backward. Livelihood was that of gatherers and hunters; apparently no crops were raised and there is no evidence of masonry structures. Caves and overhangs supplied protection against the weather. Scattered throughout the vicinity are circular mounds of fire-broken rocks, indicating outdoor kitchens of the mescal-roasting pit type. These pits are found at all elevations, indicating that the Indians followed the ripening of native plants from the valley floor in the spring to the highest ridges in the fall. Perhaps the most striking remnants of this group are the large number of pictographs scattered in caves and sheltered overhangs throughout the Guadalupe. One such

pictograph site is located at Smith Springs above the ranch headquarters. Cooking pits were observed throughout the area.

History

The first historic references to this area were compiled by the Spanish Conquistadores on their journeys northward from Mexico. Most of these expeditions moved northwest of the Guadalupe along the Rio Grande. Twice in the 1500's groups of Spaniards traveled along the Pecos River. After these exploratory trips, very little exploration occurred until the U.S. Military expeditions, beginning in 1849. One expedition, led by Lt. Francis Bryan, was a survey from San Antonio to El Paso, and passed along the base of the Guadalupe. In 1854 Captain John Pope traveled this same area surveying a route for the Pacific Railroad. Captain Pope returned to the lower Pecos River Valley in 1855 and attempted to establish a garrison. This failed because of a lack of good water. Next, the Butterfield Trail was established through the area in 1858, and one station was established at the mouth of Pine Spring Canyon. Remnants of this station, used for less than a year until the trail was rerouted far to the south, are still visible and are marked by a bronze plaque. It has been said that McKittrick Canyon was used as a holding area for the stageline horses.

After the Civil War, ranching activities began to spring up throughout the Pecos River Valley. Early ranchers in the area settled along the base of the escarpment and in the canyons where numerous springs supplied water. The highest area has no known permanent water, which restricted the use of the rim area, but by the early 1900's sheep and goat ranching became established in the highlands. The Hunter Ranch still has a large goat ranching activity, centered primarily in the Dog Canyon section of the highlands.

EXISTING DEVELOPMENT AND USE OF LANDS AND RESOURCES

The present economic use of the J. C. Hunter, Jr., Guadalupe Mountain ranch is for mohair wool production. About 20 tons of wool is annually grown by some 4,000 angora goats. Horses necessary for the ranch operation also graze on the property.

Economic resources of the area are meager. Some building stone, road material, and salt have been produced. Ground water is a valuable resource where found, and several springs issue from the base of the mountains. No oil or gas has been found, and it is believed there is only a slight chance that any will be discovered. Minerals are mostly State owned.

The wildlife resources of the mountains have been supplemented by the transplanting of species which have prospered under the conservation practices of the landowner. The Merriam elk that once ranged here is now extinct. A different species, the wapiti or American elk, was introduced in 1925 and 1926, and by 1961 the original 44 head had increased to an estimated 500 animals. The elk have spread, and perhaps half of them are now in New Mexico. Hunting by State permit is discretionary, with the owner controlling the hunt. In 1960, nine elk were harvested. The native Merriam turkey disappeared

from the Guadalupe years ago, but in 1954, 13 turkeys of the same species were planted by the State of New Mexico, in cooperation with the Texas Game and Fish Department, and in 1961 there were about 200 birds. Bluegill and rainbow trout, both exotic, have been twice planted in South McKittrick, and now reproduce naturally. Mule deer are harvested annually under the control of the State of Texas, at the discretion of the owner. There have been mountain sheep (Texas bighorn) in the Guadalupe, but the last sighting was in 1956. To encourage the propagation and proper distribution of animals, especially elk, in the Guadalupe, the water from a spring in Bear Canyon is pumped to steel tanks on the top, where gravity flow then distributes the water to other tanks, both steel and dirt.

The northwest sector of the ranch is used for goat raising, and is overgrazed. Fortunately, this area does not contain the most significant ecological values. Drift fences separate the goat range from the higher, more heavily forested and more scenic, southerly end of the Guadalupe which has been protected from domestic stock. This scenically pleasant upland area contains vegetation approaching the climax type for the site.

The lack of water precluded early-day overuse, and the present owner has instituted strict conservation practices in order to preserve the native vegetation. A sample of the permit Mr. Hunter issues to his guests is as follows:

TO GUESTS OF J. C. HUNTER, JR., IN MCKITTRICK CANYON:

This card will identify _____
as my guest _____ in McKittrick on _____, 19____. Keep
this card in your car.

In order to preserve the Canyon in its native state, please observe the following suggestions:

If you smoke, completely extinguish your cigarettes, matches, etc.,; build fires only in the places provided at the lodge. Do not molest any plant or animal life.

When you leave the highway and take the McKittrick road, you will be passing through land owned by Mr. Wallace Pratt and by the National Park Service. Please stay on the road until you enter my land, and do not bother any plant or animal life on these adjoining properties. Please close and lock any gates that are closed and locked when you find them.

I hope you enjoy your visit.

SUITABILITY

Integrity

Most of the Guadalupe ridge area that has been segregated from livestock production is approaching a climax type of vegetation, based on the particular elements of site, soil, and climate peculiar to this mountain range. Future protection against overuse and forest fires should permit continuation of this ecological process. The rangeland will return, in time, to a condition approximating its natural state.

Adaptability

The terrain is varied, and there are opportunities to provide both roadless sections and developed areas of anticipated heavy public use. Also available are viewpoints along a proposed high scenic drive where roadside exhibits could interpret the Permian reef complex and other geologic features, as well as botany and ecology. The upland sections of the Guadalupe possess a park atmosphere protected by altitudinal differences from the base sections, where headquarters, maintenance, and winter visitor facilities could be located.

Comprehensive Unit

The present North McKittrick Canyon donation is not now a comprehensive unit. The addition of South McKittrick Canyon

and adjacent suitable portions of the Guadalupe range would supplement the present lands and form a National Park System unit which could stand on its own. It would be desirable to acquire the entire drainage of North McKittrick Canyon, but since upper North McKittrick is part of the Lincoln National Forest, its acquisition must be considered a long-range objective.

Accessibility

Present access to the high Guadalupe is limited to four-wheel-drive vehicles and stock or foot travel. The low-grade road terminating in The Bowl would not be feasible as an access road to that country. It begins its climb to the upland section from El Paso Gap which is, itself, 30 miles from a paved road and 54 miles from the junction with U.S. Highway 285. Primary access should be from the east side to connect with U.S. 62-130. If the Carlsbad-Sitting Bull Falls-Queen-El Paso Gap road is ever paved, consideration should be given to making a connection between it and the high-country road, via Upper Dog Canyon. However, this should not preclude an eventual ridge road connecting with Carlsbad Caverns National Park.

APPROPRIATE PARK AREA

The entire area of the Guadalupe Mountains in Texas is appropriate for park and recreation use. It includes not only the higher forested mountain tops, but also the slopes and sufficient surrounding fringe of the desert foothills to protect scenic values and provide for access and development. Since adequate water is the key to development, as many water sources as possible are included within the suggested boundary. The accompanying map indicates the lands containing significant geological and ecological values, and the area needed for development, all of which is also scenic and appropriate for park use. On the west side the extraordinary geologic story demands the acquisition of enough land -- from crest through bajada to salt flat -- to protect and allow interpretation of that story.

The ruins of the Butterfield Stage Station at the mouth of Pine Spring Canyon are bisected by the property line between the J. C. Hunter, Jr., ranch and the land owned by Mr. Walter Glover. The entire site, of historic significance, should be in the authorized area.

SUGGESTED DEVELOPMENT

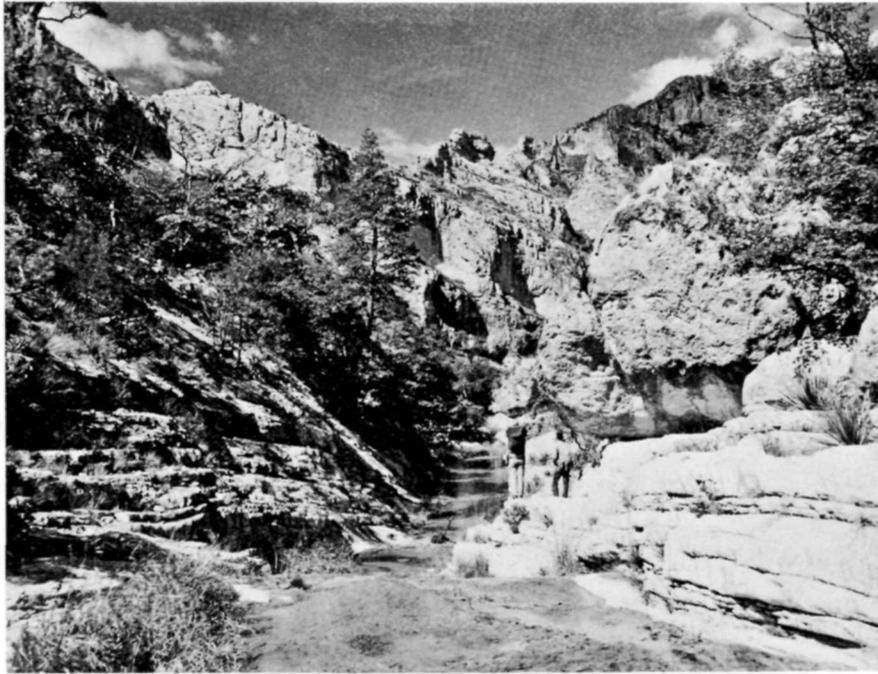
Development of the Guadalupe Mountains in the National Park System will be expensive, but proper development is essential to provide the preservation, the visitor experiences, and the requisite interpretation of the area. The proposed unit can be visualized as having two components -- a scientific reserve in the McKittrick Canyon area and a high, cool, delightful region suitable for more intensive use in the high Guadalupe.

There should, then, be very little development in the McKittrick Canyon area -- a road from the main highway into the canyon should end at the junction of the north and south forks. In that general location there should be a campground carefully tailored to fit the restrictive topography. There, also, the existing flagstone Pratt Lodge could be adapted to house a visitor contact and interpretation station. Beyond that point, simple foot trails could be built up North and South McKittrick Canyons. No horse traffic should be allowed on those trails.

Contrasting strongly with the preservation-oriented objective in McKittrick Canyon would be the heavy visitor-use development typified by a road leaving U.S. Highway 62-180 at Pine

Spring and climbing the north wall of Pine Spring Canyon. After some $6\frac{1}{2}$ miles of ascent it would top out on the high ridge near Bush Mountain. One branch of it would double back along the ridge above Pine Spring Canyon to the east, passing close to Pine Top Mountain, and thence to The Bowl. At several places on that rim drive there would be opportunities for magnificent overlooks across to Guadalupe Peak and down to the Delawares, Guadalupe Pass, and the low valleys stretching south toward Van Horn, Texas. In The Bowl a campground could be developed in the pines at some 7,800 feet elevation. This would be a camping facility entirely different from and unmatched by any other in Texas. Water to serve the campground could be pumped, as it is now, from Upper Pine Spring to the rim above The Bowl. If necessary, water could also be obtained from other springs below the escarpment.

From the road junction at Bush Mountain a scenic drive should be pushed due north along the Blue Ridge. This would afford views of the west-side fault scarp and out across the salt flats. The land surface here drops some 5,000 feet in 5 miles below the viewer, and the first 2,000 feet of it is one nearly sheer cliff. Eventually the road along the Blue Ridge should follow the divide between McKittrick Canyon and the Dog Canyons north into New Mexico and the Lincoln National Forest,



Hiking is the only proper method of travel along South McKittrick Canyon. The fragile streamside ecological values are complemented by the superb scenery of the rugged canyon.



The Pratt Lodge -- built of native stone, including the flagstone roof. Suitable and perfectly placed, at the junction of North and South McKittrick Canyon, for an interpretive and protective public contact station.



Air view up Pine Spring Canyon. The four highest peaks, left to right, are Guadalupe, Shumard, Bartlett, and Bush Mountain. Road would top out at latter.



View down Pine Spring Canyon from near its head. Road would slant down the left (north) wall of the canyon.

and on along the ridge of the Guadalupe through Carlsbad Caverns National Park to the present developed area at the cave. This ridge drive would validate the southern and western highly scenic portions of Carlsbad Caverns National Park and would provide an unforgettable experience for any park visitor using it from either direction.

Area headquarters should be located close to the junction of the proposed Pine Spring Canyon road and the highway, where water is available. This is the best site for overall year-round protection and control.

The geologic story displayed in the west-side fault scarp is of such magnitude and significance that it warrants at least a low-standard road from the main highway along the base of the slope, past Shirrtail Canyon, to the vicinity of Cutoff Mountain. Wayside exhibits along this road would be instrumental in explaining the Permian reef-building story so beautifully displayed. It may also be desirable to locate a winter campground somewhere along this road, probably served by water from the well under Bartlett Peak in Section 34, Block 66, Township 1.

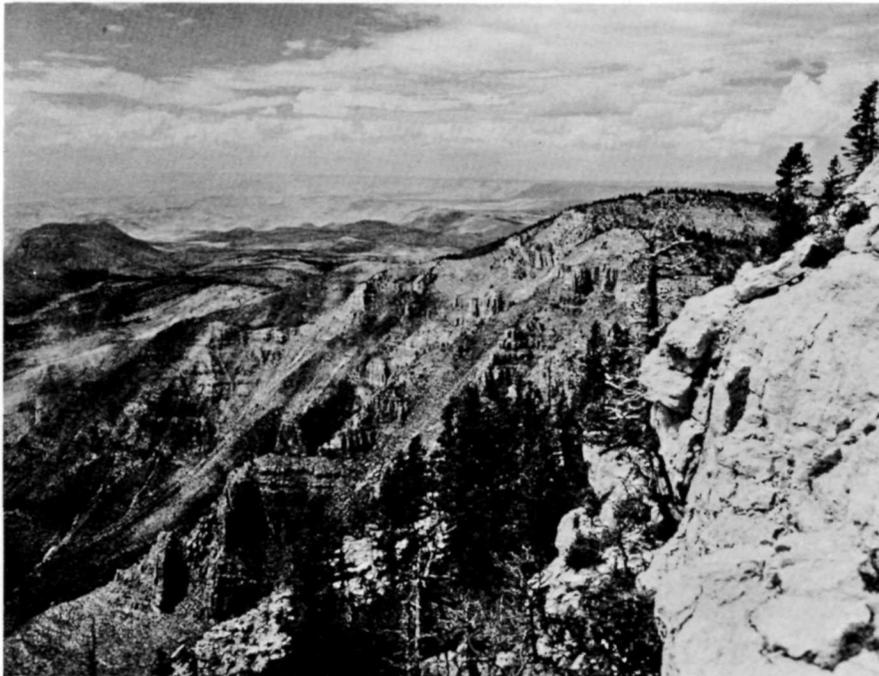
CONCLUSIONS

The Guadalupe Mountains of Texas have outstandingly significant geological values. The biological and ecological values of North and South McKittrick Canyons are of national importance, and because of their fragile nature need careful protection. The scenery and high-country atmosphere of the higher Guadalupe provide a recreationally significant resource. The proximity of the area to growing centers of population such as El Paso adds further recreational importance.

The forested uplands would provide terrain for camping, hiking, and nature study, as well as a scenic drive. The geology of the Permian sea and the Capitan reef could be dramatically explained from overlooks on the high-country road and along a "low" road west of the fault scarp. North and South McKittrick Canyons furnish a unique ecological association featuring a delicate setting of coniferous and hardwood trees and brush species, a permanent stream with travertine terraces, and a location for observing the many birds which inhabit the area. Those canyons are, as well, areas of rugged beauty contrasting strongly with the surrounding region. A sense of healing relaxation results from contact with the primitive character of the Guadalupe Mountain country which has received, in many ways, a greater degree of protection than many existing National Parks and Monuments.



Guadalupe Peak (8,751 feet) from the rim just west of Pine Top Mountain. This could be a roadside overlook.



North to West Dog Canyon and the Brokeoff Mountains (far left) from Bush Mountain. This potential roadside overlook is on the Goat Seep reef limestone.



View southeast along west side fault scarp to the Patterson Hills and the Salt Lakes, from the Blue Ridge. Another potential roadside overlook.



Air view southeast down Black Canyon, Lincoln National Forest, New Mexico. This is the country to be seen from the proposed ridge road between Carlsbad Caverns National Park and the proposed Guadalupe Mountains National Park.

The report of the Outdoor Recreation Resources Review Commission stressed the importance of "preserving from other uses for the benefit of future generations" areas classed as primitive. The report stated that

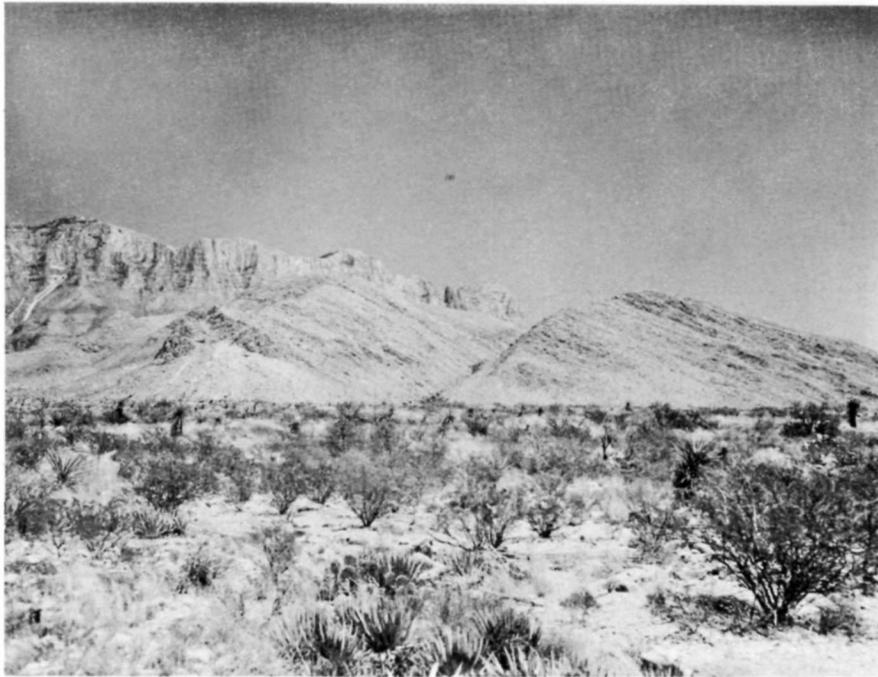
Areas in this class are inspirational, esthetic, scientific, and cultural assets of the highest value. They, and they alone, satisfy the longing to leave behind for a time all contact with civilization.

The predicted growth of urban centers such as El Paso (110 miles) which has more than doubled its population (137,000 to 277,000) in the 1950-1960 decade, and the mountain recreation needs of the staked plains section of Texas and New Mexico, combined with the increase in leisure time and personal income of the expanding population, are factors to weigh in determining future recreation needs. Such activities as enjoyment of scenery and wildlife, pleasure driving and walking, and picnicking and camping are rated as extremely important recreation needs by the Commission.

The Guadalupe Mountains-McKittrick Canyon area is unique in the region in which it is located. The future recreation needs are apparent. An error in oversupplying outdoor recreation facilities is unlikely.

RECOMMENDATIONS

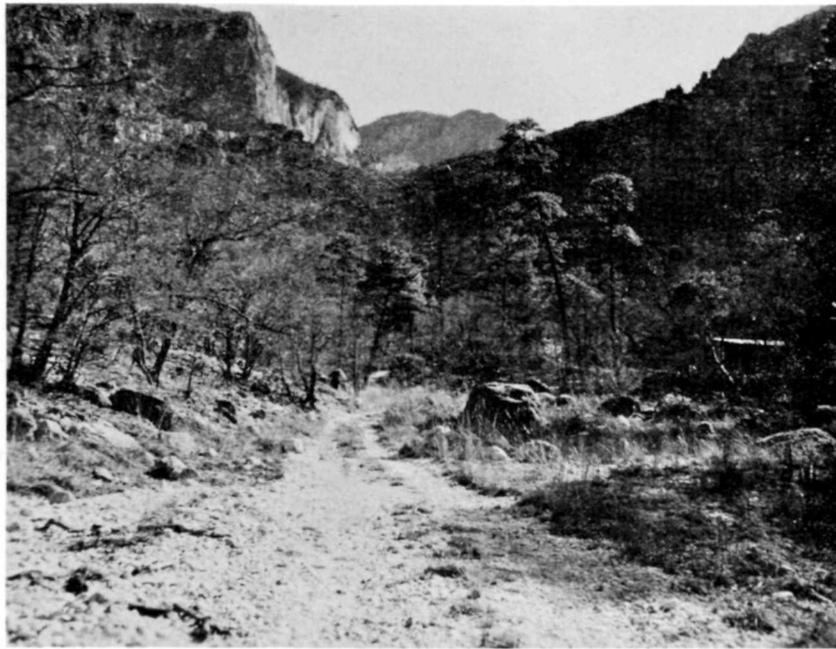
Public ownership of the Guadalupe Mountains should be assured for park and recreation purposes. The Guadalupe Mountain Ranch should be acquired by the Federal Government from its owner, Mr. J. C. Hunter, Jr. Most of it should be added to the Pratt donation containing North McKittrick Canyon to make a National Park (see map). The few parcels of land not needed for these purposes might be used in exchanges in order to acquire desirable lands not owned by Mr. Hunter, or disposed of in some other manner to the advantage of National Park Service programs.



West side bajada rising to small, tilted fault blocks and then the great wall topped by Shumard Peak, Guadalupe Peak, and El Capitan.



Bush Mountain and Bartlett Peak crown this section of the west side fault scarp, some two miles away and 4,500 feet above the viewer.



Looking up South McKittrick Canyon from the Hunter Lodge.
The near ridge hides the full rise of "Gray Cove."



"Gray Cove" -- a tributary to South McKittrick Canyon,
here seen from part way up the opposite wall.



GUADALUPE

OTERO CO.
EDDY CO.

Rocky Arroyo

GUADALUPE MOUNTAINS

Last Chance Canyon
Last Queen

GUADALUPE

CARLSBAD CAVERNS

BRIDGE OF THE MOUNTAINS

Mesa Canyon

DEL

Dark Ridge BARRERA

YESO HILLS

Guadalupe LA

NEW MEXICO
TEXAS

CROW FLAT

McKittrick Canyon

North Wells

Guadalupe Peak

Pine Spr.

Lamar Canyon

SALT BASIN

DELAWARE

PLAIN

Wild Horse Draw