

CULTURAL LANDSCAPES OF McKITTRICK CANYON,  
GUADALUPE MOUNTAINS NATIONAL PARK, TEXAS

by

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## TABLE OF CONTENTS

ACKNOWLEDGMENTS	ii
ABSTRACT	vii
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER	
I.    INTRODUCTION	1
II.   THE NATURAL LANDSCAPE OF MCKITTRICK CANYON INCLUDING THE SURROUNDING AREA	3
Setting	3
Climate	6
Geology	7
Soils	11
Hydrology	12
Flora	14
Fauna	17
Conclusion	19
III.  PREHISTORIC ADAPTATION OF THE GUADALUPE MOUNTAINS AREA	21
Late Paleo-Indian Period	23
Paleo-Indian Complex in the Guadalupe	26
Early Archaic Period	28

<b>Early Archaic Adaptation in the Guadalupe Mountains</b>	<b>30</b>
<b>Middle Archaic Period</b>	<b>31</b>
<b>The Middle Archaic in the Guadalupe</b>	<b>33</b>
<b>Late Archaic Period</b>	<b>34</b>
<b>The Late Archaic in Guadalupe Mountains National Park</b>	<b>36</b>
<b>Late Prehistoric Period</b>	<b>39</b>
<b>The Late Prehistoric Period in the Guadalupe</b>	<b>41</b>
<b>Conclusion</b>	<b>43</b>
<b>IV. THE ADAPTATION OF THE NDÉ PEOPLE TO THE GUADALUPE MOUNTAINS AND THE SURROUNDING AREA</b>	<b>45</b>
<b>Traditional Landscape</b>	<b>47</b>
<b>Subsistence Patterns</b>	<b>52</b>
<b>Minor Plant Resources</b>	<b>57</b>
<b>Medicinal Plants Utilized by the Ndé</b>	<b>57</b>
<b>Drink Plants and Narcotics</b>	<b>58</b>
<b>Miscellaneous Products</b>	<b>60</b>
<b>Water Resources</b>	<b>60</b>
<b>Animal Resources</b>	<b>60</b>
<b>Language of the Ndé</b>	<b>65</b>
<b>Band Organization of the Ndé</b>	<b>67</b>
<b>Kinship</b>	<b>69</b>

	Ndé Religion and Ceremony	70
	Conclusion	73
V.	HISTORICAL ADAPTATION OF MCKITTRICK CANYON	74
	The Buffalo Soldiers	74
	Buffalo Soldiers in the Guadalupe Mountains	79
	Mescalero Apache Raiding and Warfare	83
	Ranching and Settlements of McKittrick Canyon and the Surrounding Area	84
	Wallace Pratt Buys Land in the Guadalupe Mountains	86
	The Stone Cabin	87
	Judge J.C. Hunter in McKittrick Canyon	89
	Conclusion	90
VI.	NATIONAL PARK SERVICE ADAPTATION	91
	History of the National Park Service	91
	Organization of the Park Service	93
	Guadalupe Mountains Becomes a National Park	96
	Wallace Pratt Revives the Possibility of a Park	102
	J.C. Hunter, Jr. and Glenn Biggs	104
	The National Park Service and McKittrick Canyon	107
	Facility Development in McKittrick Canyon	108
	Protection of McKittrick Canyon	111

Conclusion	112
VII. CONCLUSIONS	113
BIBLIOGRAPHY	118

## ABSTRACT

McKittrick Canyon, located in the northeastern portion of Guadalupe Mountains National Park, has a rich history of human cultural presence. From prehistoric to present times, peoples have been drawn to the canyon's abundant natural resources and beauty. McKittrick Canyon and the surrounding Guadalupe Mountains became a National Park in 1972. Since then, the Park Service has provided invaluable interpretive services to visitors to the area. Many studies have been conducted in and numerous histories have been written about McKittrick Canyon. This study closely examines and combines previous work into one document that, I hope, can be easily utilized by interpreters from the National Park Service and scholars interested in the history of how people have adapted to and changed the landscape of McKittrick Canyon.

## LIST OF TABLES

2.1	Chronological Framework for the Southern Guadalupe Mountains	22
2.2	Chronological Framework for Trans-Pecos Texas	23

## LIST OF FIGURES

2.1	Trans-Pecos Texas	5
4.1	Traditional Landscape of the Ndé	48
4.2	Sun-wise Pattern of Movement of the Ndé	50
4.3	Geographical Distribution of the Athapascan Language	66
4.4	Base Metaphor	71
5.1	Campaign Region of the Tenth Cavalry	82
6.1	Units of the National Park System	94

# CHAPTER I

## INTRODUCTION

Guadalupe Mountains National Park was officially established September 30, 1972 after nearly half a century of efforts made by numerous people to set aside the area as protected parkland in one form or another. One of the many spectacular components that make up Guadalupe Mountains National Park is McKittrick Canyon. McKittrick Canyon has a long, rich history of cultural occupation. Its unique mixture and abundance of diversified vegetation and wildlife has continuously attracted and supported human populations since prehistoric times. Presently, visitors are drawn to the canyon for many of the same reasons that attracted people in the past.

Many reports and investigations, including biological, geological and archaeological studies, have been conducted in McKittrick Canyon that have aided the National Park Service in its interpretive activities. The aim of this study is to review and synthesize information regarding the individual cultures that have occupied the area of McKittrick Canyon (while paying special attention to the landscape), and to produce a document that will be beneficial to the Park Service and future researchers that are interested in the cultural history of the canyon.

This study falls under the realm of cultural ecology. Cultural ecology is the theory developed by anthropologist Julian Steward that seeks to explain the adaptation of individual human cultures by means of specific environmental conditions (McGee and Warms 1996: 221). Using the theory of cultural ecology,

Steward's goal was to demonstrate that human activities are closely related to the natural environment (Steward 1938:10). The principal goals of this study are: (1) to identify and describe the distinct cultures that have occupied McKittrick Canyon; (2) to describe the natural surroundings of McKittrick Canyon and its significance to the cultures of the canyon, specifically how these peoples have adapted to the landscape; (3) to review the history of McKittrick Canyon and its journey to becoming part of the National Park System; and (4) to provide a document to be utilized by the staff of Guadalupe Mountains National Park, primarily for visitor interpretation.

This study begins with a description of the natural landscape of McKittrick Canyon. Next, the prehistoric cultural adaptation is reviewed, with attention to how these peoples adapted to the unique landscape of McKittrick Canyon and the surrounding Guadalupe Mountains. The later historical cultural adaptation is reviewed, followed by an examination of the National Park Service and the inception of Guadalupe Mountains National Park.

CHAPTER II  
THE NATURAL LANDSCAPE OF MCKITTRICK CANYON,  
INCLUDING THE SURROUNDING AREA

McKittrick Canyon is truly one of the state's most valued natural and cultural treasures. The intricate mixture of both desert and woodland plant and animal species makes McKittrick Canyon one of the most unique landscapes found anywhere. The canyon is also known the world over, for its remarkable outcrop of the Permian-aged Capitan Reef. Different human populations have long been attracted to its natural resources and beauty. In order to understand the relationship between people and the canyon, it is necessary to examine the canyon in its natural context.

Setting

McKittrick Canyon is located in the northeastern portion of Guadalupe Mountains National Park. The canyon stretches for almost five miles and is several thousand feet deep (Wernert 1985:156). The park itself is located in northern Culberson County, Texas and is situated fifty-five miles southwest of Carlsbad, New Mexico and one hundred and ten miles east of El Paso. Guadalupe Mountains National Park was established in 1972 and is comprised of land that was both donated and sold by private citizens. The park covers 76,293 acres of diverse land (Fabry 1988:1). The park contains Guadalupe Peak, the highest peak in Texas, which

reaches to a height of 8,749 feet. In addition to mountains, the park also includes canyons and desert lowlands. Few places in the state can boast such diversity

Guadalupe Mountains National Park is located in the region of Texas known as the Trans-Pecos (Figure 2.1). The Trans-Pecos region lies between the Pecos River and the Río Grandé; its total area is approximately 32,000 square miles (Schmidly 1977:1). The region is covered with a number of true mountains separated by flat, desert-like basins (Schmidly 1977:6). The Trans-Pecos region lies within the physiographic region known as the Mexican Basin and Range Province (Brand 1937:9). This region is characterized by an almost “continually, flat, gently rolling, or sloping plain” that is disrupted by “short, frequently parallel mountain chains which rise above the basin floors” (Brand 1937:11). This region is home to all of the state’s mountains. Important physiographic features found here include the Guadalupe Mountains, Delaware and Apache Mountains, Davis Mountains, the Ord and Glass Mountains, Santiago, Chalk, and Christmas Mountains, the Chisos Mountains, Chinati and Sierra Vieja Mountains, Finlay, Quitman, and Van Horn Mountains, the Hueco Mountains, the Franklin Mountains and the Toyah Basin, the Marathon Basin and the Diablo Plateau.

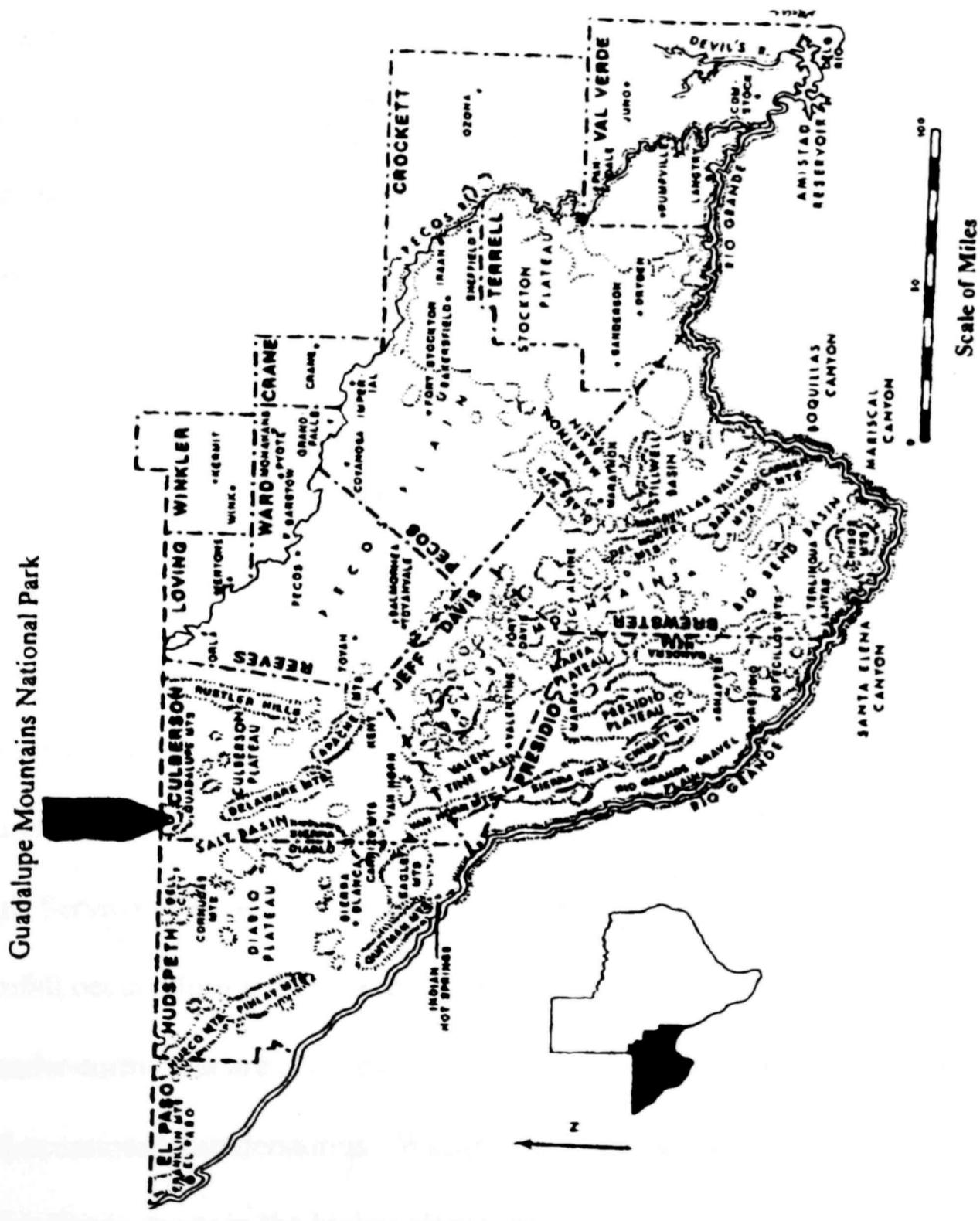


Figure 2.1 Map of Trans-Pecos Texas and adjacent counties, including Guadalupe Mountains National Park (from Powell 1998)

## Climate

The climate of the Trans-Pecos region of Texas is characterized as arid to semi arid. The Office of the Texas State Climatologist reported that the average temperature for the Trans-Pecos region was 66.1° for 1998. Precipitation amounts in this part of Texas are extremely low. The average rainfall amount for Culberson County measured in Van Horn was only 13.1 inches in 1993 (Ramos 1999:96). El Paso measured only 8.8 inches, while the Hudspeth County station measured 10 inches average annual precipitation in 1993. For 1998, the average annual precipitation for the entire Trans-Pecos region was only 8.60 inches, the lowest for all of the regions in the state.

Although the rainfall amounts are extremely scant for the Trans-Pecos Region and the average temperature is somewhat high, there are exceptions. Associated with the diverse natural landscape, there are temperature variations within the park. For example, the canyons and highlands are generally cooler and more tolerable for summer visitors as compared to the lower desert elevations. The overall climate of Guadalupe Mountains National Park is described as mild (Southwest Region National Park Service 1974:34). As in all of the Trans-Pecos region, the majority of the rainfall occurs during the late spring and summer months in the form of thunderstorms that are at times violent. In the spring, visitors may expect high winds and occasional thunderstorms. Winter brings cooler and often freezing temperatures, and at times, snow in the higher elevations.

## Geology

In order to appreciate the dramatic topography of Guadalupe Mountains National Park, a brief look at the past geologic history of the region is necessary. Guadalupe Mountains National Park did not always look the way it looks today. Its present day morphology is the product of millions and millions of years of geologic metamorphoses. Not only does the park lie within the boundaries of the Mexican Basin and Range Province, but its position within Trans-Pecos Texas also allows it inclusion in the Permian Basin geological province (Brand and Jacka 1979:1). As previously stated, Trans-Pecos Texas contains many individual mountain ranges which are interrupted by basins. These numerous mountains and basins share a long, interesting geological history with that of the Guadalupe Mountains.

Permian Basin geologic history begins around 250 million years ago in the Paleozoic Era. It was during this time that much of present-day Texas and New Mexico was covered by a large, shallow inland sea. Deposition of sediments in this sea provided the necessary building materials for shallow water platforms, back-reef lagoons and deep water basins. The shallow water of the Permian Sea also provided an ideal environment for reef-forming organisms to thrive. The Permian Sea was a member of what is known as the "Permian Reef Complex," which included, in addition to the reef, the back-reef lagoon, and the fore-reef talus (Brand and Jacka 1979:9). The Permian Reef was the product of two discrete periods of reef construction which occurred during the Guadalupian Stage of the Permian Period. The first stage of reef growth occurred with the Goat Seep Reef which is located west of the Capitan Reef

of Guadalupe Mountains National Park. The second stage concerned the Capitan Reef which today is exposed in only three areas, one being in the park. Visitors to the park can see the exposed Capitan Reef in the park's major canyons: Slaughter Canyon, Dark Canyon, Walnut Canyon, and McKittrick Canyon. The reef is perhaps most accessible in McKittrick Canyon. This particular exposure can be seen along the Permian Reef Geology Trail, which originates in McKittrick Canyon. The other two exposures of the Capitan Reef can be seen in the Apache Mountains, located just northeast of Van Horn, Texas and in the Glass Mountains just east of Alpine (King 1948:1-2).

The Permian Reef is made of two parts, the first being the organisms that constructed the framework of the reef. These "reef-builders" were predominately the algae and sponges that thrived in the waters of the Permian Sea. In addition to these prime reef-builders, organisms such as corals, bryozoans and brachiopods also contributed to the skeleton of the reef. The second constituent of the reef was all of the sediment that was trapped by the reef's framework. Together, these two elements formed the long reefs that made up a portion of the Permian Reef Complex. These reefs were not a solid or continuous barrier, but rather were broken or interrupted by deep transverse channels which cut underwater canyons. These channels allowed for the movement of clastic materials from the back reef lagoons into the sea. In addition to the gradual filling of the Permian Sea with sediment, sea level fluctuations were prevalent and the reef began to regress during this time period.

At the end of the Guadalupian Stage of the Permian Period, Guadalupe Mountains National Park basically looked like the following: The shoreline of the Permian Sea almost corresponded with the ridge of the present-day Guadalupe escarpment, the back reef lagoon was developing, and the Permian sea was barely beginning to fill with sediments, for the most part the basic reef complex was still intact (King 1948:1-5). In the later Permian Period, geologists think that the Permian Basin underwent an upward tilt in its western portion and a downward tilt in the east. This caused present-day Guadalupe Mountains National Park to shift upward. During this time, the Permian Sea didn't receive sufficient water replenishment; this, along with the arid climate, created a deadly high rate of evaporation. The Permian Sea was beginning to dry up and deposition of sediment material was commencing. At the end of this time, there were no tall mountains as there stand today, but the Delaware Basin (Permian Sea) was filled and the Capitan Reef was buried by sediment. The Guadalupe Mountains were not mountains at all.

Mesozoic history of the region began around 245 million years ago and is characterized by a lack of significant geologic activity (Brand and Jacka 1979:10). The Triassic, Jurassic and Cretaceous Periods, geologically speaking, were of little relevance to the area. Erosional forces of wind and water, have all but removed any evidence of Cretaceous rocks from the region.

At the opening of Cenozoic, or recent time period, the geological history of the Trans-Pecos and Permian Basin Region the area remained emergent. Around 5 million years ago, during the late Miocene and early Pliocene epochs, Western Texas,

including the present-day Guadalupe Mountains, underwent a period of almost perfect vertical uplift in addition to block mountain and basin faulting. This dramatic episode of geological activity produced the present-day topography on the west side of the Guadalupe Mountains. The eastern Guadalupe Mountains and the rest of the Permian Basin were not affected by the faulting, but the uplift allowed groundwater to permeate and dissolve a portion of formations in the Delaware Basin. This caused an eventual collapse of the overlying rock and produced a huge depression, which was slowly filled by debris from eroding mountains.

As far as the Guadalupe Mountains are concerned, they remained buried from the end of the Permian Period. It was not until around 2 million years ago, at the beginning of the Pleistocene, that the present-day mountains begin to appear. The headwaters of the Pecos River continued to erode and caused a progressive deepening of the entire Pecos Valley, including present day Guadalupe Mountains National Park, thus slowly revealing the Guadalupe Mountains in all their majestic grandeur.

The geologic importance of Guadalupe Mountains National Park cannot be overstated. The area has had a long history of geological exploration and is known the world over by professional and amateur geologists alike. Beginning in 1855, G.G. Shumard and party documented the strata of the southern tip of the Guadalupe Mountains. Shumard also amassed a collection of fossils from the Capitan Reef Formation. Over the years numerous geologists, including those from several oil companies, have conducted extensive field-work and research in the area. The

Guadalupe Mountains have long been, and continue to be, an important natural geological laboratory.

## Soils

The soils of the Trans-Pecos region are primarily chestnut brown to light gray in color, typical of dry climates (Brand 1937:24). These soils include the Ector-Rock Crop Association and the Holloman-Reeves soil association. Soils belonging to the Ector series are characterized as shallow and underdeveloped (Schmidly 1977:8). Ector soils range from light brown in color, to a dark grayish brown. They consist primarily of calcareous material and are easily crumbled. As their name suggests, Ector-Rock Outcrop soils are found on the steep rock slopes of hills and mountains. Ector soils are also found on the exposed limestone outcroppings of canyon walls (Dixon 1995:5). These soils sustain vegetation found primarily in grassland and montane biotic communities; however, some xeric shrubs are also supported by Ector soils.

Holloman-Reeves soils are characterized by a texture ranging from fine sand to clay with the predominate soil texture being that of sandy clay loams. They are pale brown in color and have a high saline and gypsum content. The Holloman-Reeves soils are found on level to gently sloping upland regions, and are located predominately near gypsum outcroppings (Dixon 1995:5). These soils sustain vegetation unique to limestone outcroppings. Species such as mock pennyroyal (*Hedeoma apiculatum*), five flower rockdaisy (*Perityle quinqueflora*), and nama

(*Nama xylopodum*) are found growing in these soils, nama being an indicator species of gypsum deposits (Northington and Burgess 1979:56).

## Hydrology

The Trans-Pecos region is bounded by the Pecos River on the east and the *Río Grandé* on the west. The *Río Grandé* begins in southwestern Colorado and flows through the state of New Mexico and eventually into Texas where it forms the international border between Mexico and the United States. Its two major tributaries, in Texas, include the Pecos and the Devil's rivers. The *Río Grandé* has long been an important water resource for the area. Some of its history is traced through its many names. The Pueblo Peoples of the lower *Río Grandé* called the river *P'osoge* or "river of great water" (Ramos 1999:64). Early Spanish explorers named it *Río del Norte* (River of the North), and to some it was known as *Río Bravo*. Other names appearing on early Spanish maps include *Río Grandé del Norte*, *Río San Buenaventura*, *Río Ganapetuan* and *Río Turbido*. Historically, the river attracted native peoples and European settlers. Today, a significant amount of its water is used for agricultural purposes, virtually exhausting the water supply (Wauer 1992:1).

The Pecos River delineates the eastern boundary of Trans-Pecos Texas. It originates near Santa Fe, New Mexico and enters Texas in northwestern Loving County. The Pecos flows in a southeasterly direction, eventually flowing into the *Río Grandé*. Like the *Río Grandé*, the Pecos has long been an important source of water for the region. From prehistoric times to the present, people have utilized the river for

drinking water and food resources. The Pecos River's importance to the people of the area cannot be overstated; it is the source of the Salt Flats, that lie west of the park. This natural resource reserve attracted both prehistoric and historic populations to the area to collect salt found in the salt deposits of the Salt Flats.

There is no doubt that the presence or absence of water in the Trans-Pecos region is of utmost importance. In the semi-arid Guadalupe Mountains, water supports both plants and animals, and establishes human settlement patterns. In McKittrick Canyon the perennial spring-fed stream, McKittrick Creek, makes the canyon a rare oasis in the surrounding arid desert lowlands and mountains. The stream has long attracted unique communities of plants, animals and people.

McKittrick Creek, which meanders through McKittrick Canyon, flows in a predominately easterly direction both on the surface and underground. The stream originates from a spring that is located just northwest of Devil's Canyon within the park. It also flows for a short distance in the Lincoln National Forest just across the state line in southern New Mexico. Lind (1979:123-124) divides the stream into three zones: North McKittrick Creek, South McKittrick Creek, and the portion of the creek that runs downstream from the confluence of the two zones. Because of McKittrick Creek's high lime content, its beds are coated with travertine. The dissolved calcium carbonate solution deposits a surface coating of various thickness over much of the creek's bed. The creek continues to flow eastward until it disappears into the earth.

McKittrick Creek supports a fragile aquatic ecosystem which is truly isolated within the park's boundaries. A constant supply of water from the stream and its

associated springs and seeps has made it possible for a somewhat lush riparian environment to flourish along the stream's banks. Scientists believe this environment to be a relic of the more moist climate of the Pleistocene. In contrast, the dryer canyon walls support desert dwelling plants such as sotol (*Dasylirion wheeleri*), agave (*Agave sp.*), prickly pear (*Opuntia engelmannii*), lechugilla (*Agave lechuguilla*), ocotillo (*Fouquieria splendens*) and cholla (*Opuntia imbricata*). The stream provides a constant water supply and thus is lined with such water requiring species as alligator juniper, ponderosa pine, Texas madrone, oak, maple and sawgrass.

#### Flora and Fauna of McKittrick Canyon

The Guadalupe Mountains are part of the Navahonian Biotic Province, which includes most of the mountainous regions of New Mexico (Blair 1950:108). The unique ecotonal status of the park allows it to share environmental characteristics, such as its flora and fauna, with the neighboring Chihuahuan biotic province. Within McKittrick Canyon there exist many of the plants typically associated with the semi-arid to arid Trans-Pecos region, as well as some atypical varieties.

Since the inclusion of this area into a national park, McKittrick Canyon has always been recognized as a type of natural laboratory for scientists. Botanists, biologists and geologists have always understood the importance of preserving the canyon for future scientific study. In fact, there was a proposal to limit or restrict access to this area to tourists in order to preserve it for scientific biological studies. Of special concern was the fragile ecosystem of McKittrick Creek. It was

recommended to the Park Service that the creek be safeguarded from human disturbance in order to protect it from harm (Southwest Region National Park Service 1974:36). Today visitors to the canyon are instructed by signs posted along the trail at the creek crossings not to disturb the creek's delicate environment. Other portions of McKittrick Canyon are also designated as protected natural areas and are not easily accessible by trail to the public.

Any visitor to Guadalupe Mountains National Park cannot help but notice the wide variety of plants, trees and grasses that grow here. There are many factors that allow for a diverse medley of flora. The general landscape or topography, climate and soil conditions, are several factors that have a direct impact on what kinds of vegetation flourish here. The unique position of the Guadalupe Mountains in an ecotonal environment has allowed an extremely exceptional floristic community to exist. The park lies somewhat on the boundary of the Chihuahuan Desert and the Plains grasslands. Within the park there are plants that indicate three general biotic communities: desert, woodland and forest (Northington and Burgess 1979:51). Gelbach (1966:17) also documents the overlapping nature of the Guadalupe ecosystem and divides the park's vegetative associations into that of desert scrub, Chihuahuan desert, and evergreen woodland. Because of the unique climatic and topographic conditions that exist within the park, there have been some difficulties in trying to place the park neatly into existing vegetative zones or biotic provinces. The ecological diversity of this part of Texas seems to deny all traditional models of floristic classification.

In Guadalupe Mountains National Park, there exist specimens of the desert biotic community. Desert scrub dominates large portions of the park. Small-leaved shrubs such as creosote brush (*Larrea tridentata*), western honey mesquite (*Prosopis glandulosa*), tarbrush (*Fourensia cernua*), fourwing saltbrush (*Atriplex canescens*), and acacia (*Acacia neovernicosa*) are found in, but not limited to, regions below the western and eastern escarpments of the Guadalupe Mountains. There are also numerous transition areas in which desert plants and plants associated with grasslands intermingle. For instance, these grassland associations can be found coexisting with desert succulents. It is not uncommon to see species such as grama grass (*Bouteloua eriopoda*), lechuguilla (*Agave lechuquilla*), goldeneye (*Viguiera stenoloba*) and ocotillo (*Fouquieria splendens*) thriving in the same area of the park.

The woodland vegetative association is also well represented in Guadalupe Mountains National Park. In this part of Texas, plant species correspond with altitude and the availability of water. Specifically in McKittrick Canyon, plant species overlap and are not strictly limited to their specific biotic province. For example, one walking in the canyon may see a sotol (a plant typically associated with a desert climate) growing next to a more water requiring species such as an oak or maple. In the canyon, plant types not only correspond with the altitude and availability of water, but also with temperature. Gelbach (1963:5) notes that the temperatures of the canyon walls greatly influence what type of plants may grow there. For instance, the slopes of the canyon walls in McKittrick are lined with such species as sotol, agave and mimosa because the soil temperatures are too high to support tree growth. Near

the mouth of the canyon (lower elevation), desert lowland species, typical of northern Chihuahuan Desert flora, are present. Several species of yuccas and cacti dominate the landscape. Sotol (*Dasyllirion leiophyllum*), Spanish Bayonet (*Yucca faxoniana*), Ocotillo (*Fouquieria splendens*), and Prickly Pear (*Opuntia spp.*) are present in this desert setting. Scrub oak and one-seed juniper also thrive in the desert setting. Deeper into the canyon the desert plant species intermingle with those of a woodland variety. Here in the canyon stand a variety of deciduous and evergreen trees. Along McKittrick Creek, species such as walnut, oak, and bigtooth maple attract many visitors each autumn when they display their beautiful seasonal colors.

#### Fauna

Just as diverse species of plants intermingle within the canyon walls and along the canyon floor, so does a varied community of animals. McKittrick Canyon and the surrounding Guadalupe Mountains are home to a variety of mammals, reptiles, birds, and insects. Even a distinct species of fish can be found in McKittrick Creek.

Presently there are fifty-eight species of mammals living within the boundaries of Guadalupe Mountains National Park (Cornely 1976:1), many of which also call McKittrick Canyon home. Mammals found in this area are from a variety of habitats. Here one can find montane, grassland, desert, riparian woodland and widespread species all living relatively close to one another. The ecotonal status of Guadalupe Mountains National Park is reflected in the diverse collection of mammals and other species living here.

Many of the mammals of McKittrick Canyon are nocturnal and thus difficult if not impossible for many of the visitors to see. Those who backpack and spend the night at McKittrick Ridge Campground are likely to hear the howls of coyotes (*Canis latrans*), and a keen eye may even spot evidence of the more elusive mountain lion (*Felis concolor*) and bobcat (*Felis rufus*). Other nocturnal mammals found in McKittrick Canyon include raccoons (*Procyon lotor*) and a variety of species of bats. The park's mammal check-list documents sixteen varieties of bats that can be found in the national park. Some of the more common species of bats found here include the cave myotis (*Myotis velifer*), California myotis (*Myotis californicus*), big brown bat (*Eptesicus fuscus*) and the Brazilian free-tailed bat (*Tadarida brasiliensis*). Although best viewed after dark, it may be possible to view bats roosting in such places as the now-abandoned Hunter Line Shack during the daylight hours.

Guadalupe Mountains National Park is also home to more than three hundred species of birds, and McKittrick Canyon is the nesting place for forty of these species. The peregrine falcon, once endangered, nests high in the canyon walls, and golden eagles are occasionally spotted. Other species of birds found in McKittrick Canyon include swallows, chickadees, Stellar's jays, turkey vultures and nuthatches. In addition to releasing a herd of forty-four elk, Judge J.C. Hunter also released a flock of wild turkey in the 1930s.

Although many of the mammals species that are found in the canyon are nocturnal, on a day hike along the canyon trail it is not uncommon to see mule deer (*Odocoileus hemionus*), or the occasional collard peccary (*Dicotyles tajacu*).

Different varieties of squirrels, pocket mice, pocket gophers and rats are also found with the canyon. Occasionally black bear wander into the park from adjacent areas. Merriam's elk (now extinct) were introduced into the canyon by Judge Hunter, as were mountain sheep. Bison, grizzly bears, gray wolves, desert bighorn sheep, blacktail prairie dogs and white-tailed deer roamed within the canyon walls in the past but have since left. Most of these were extirpated due to human causes.

The diverse collection of plants and animals has played a key role in supporting prehistoric and historic human populations in McKittrick Canyon and the surrounding area. Plants found in the canyon were used not only for nourishment, but had medicinal and spiritual significance as well. Plants were gathered as raw materials to be burned as fuel or made into shelter or other household goods. The rich supply of animals for use as food or raw materials also made human occupation of the canyon possible.

### Conclusion

By understanding the natural landscape of McKittrick Canyon and the surrounding area, it is possible to examine the relationship that humans had and continue to have with this special place. Geologic history of the region not only teaches us how the landscape was formed, but also gives us insight into the soils that sustain the flora that was utilized by humans and gives us information about the rocks that were used as raw materials by people living and working in the canyon. Learning about the canyon's water supply allows us to understand the importance of water to

the land and its people. Knowing what kinds of plants and animals live in the canyon allows us to identify sources of subsistence that were utilized by the people who lived here. With a foundation of the specific environmental conditions of McKittrick Canyon and the surrounding region, it is possible to closely examine how the people of the canyon adapted to and utilized its bountiful natural resources.

CHAPTER III  
PREHISTORIC ADAPTATION OF THE GUADALUPE  
MOUNTAINS AREA

People have lived and worked in the Guadalupe Mountains since long before the area became a national park. Archaeological evidence indicates a continuous occupation of the Trans-Pecos region of Texas for at least 10,000 years (Mallouf 1985:95). Where did the first inhabitants of the Guadalupe come from? What were they like? Archaeologists have compiled data that attempt to answer these questions and many others regarding the premiere occupants of this area.

According to the Bering Land Bridge Theory, the first inhabitants of North America began crossing from Siberia to the North American continent via a land bridge or possibly an exposed ice sheet. These people were presumably following now extinct megafauna, such as mammoth and giant bison. According to this theory, these people eventually populated North America, Mesoamerica and the South American continent. Of course there are other theories that account for the peopling of the Americas, but currently the Bering Land Bridge theory seems to be the most widely accepted.

Much debate exists as to precisely how long humans have been living in Texas. As of yet, there is no definitive evidence that suggests a pre-Paleo-Indian or an early Paleo-Indian presence in the Trans-Pecos region, though late Paleo-Indian sites are found scantily dotted throughout the area (Mallouf 1985:100). However,

archaeological evidence suggests a human presence in other parts of North America as early as 20,000 years ago. As archaeological methods and techniques continue to evolve, this time frame may one day be pushed back even further.

Several useful cultural chronologies for the prehistory of the Southwest United States have been developed and utilized to organize the artifacts and features associated with these first inhabitants. In addition to chronologies developed specifically for the desert southwest cultural area, chronologies specific to the prehistoric cultures of Texas exist. S. Katz (1983) has devised a chronological framework specific to the Southern Guadalupe Mountains (Table 2.1).

Table 2.1: Chronological Framework for the Southern Guadalupe Mountains

Culture	Years
Paleo-Indian	9000-6000 B.C.
Archaic	6000 B.C.- A.D. 1
Transitional	A.D.1-800
Late Prehistoric	A.D. 900-1541

This framework is indispensable when focusing specifically on the prehistoric cultures of Guadalupe Mountains National Park. In addition, Mallouf (1985:95) devised a chronological framework for the entire Trans-Pecos region of Texas (Table 2.2):

Table 2.2: Chronological Framework for Trans-Pecos Texas

Culture	Years
Late Paleo-Indian	8000-6500 B.C
Early Archaic	6500-3000 B.C.
Middle Archaic	3000-500 B.C
Late Archaic	500 B.C - A.D. 1000
Late Prehistoric	A.D. 1000-1519

### Late Paleo-Indian Period

Archaeological evidence has yielded important information regarding the Paleo-Indian period in the Trans-Pecos region of Texas, as well as the broader region of the Southwest. Although recognized as problematic, due in part to the sheer age of the ancient sites, archaeology has provided some general characteristics of the Paleo-Indian cultural stage that have helped to shape our perceptions of these ancient peoples. The Paleo-Indians have long been identified with the hunting of the large, now extinct, game animals such as mammoth and bison. The term "Paleo-Indian" is used by archaeologists to describe the people or the time (Paleo-Indian Period) during which the inhabitants of North America lived among and hunted animals of the Late Pleistocene period (Hester 1979:26). This perception of Paleo-Indians as primarily large-game hunters is a result of the kinds of artifacts that have been recovered from this time period. Large spear points and other lithic artifacts have been found in association with these big game animals. To some, this association has been overstated (Simmons et al. 1989:21). With continuing investigation, archaeologists

are now beginning to confirm that the Paleo-Indians did in fact rely heavily upon big game for subsistence, but also supplemented their diet by incorporating the hunting of smaller game animals and the gathering of wild plant foods. In the Trans-Pecos, closer examination of Paleo-Indian remains found in dry caves has indeed indicated that Paleo-Indians did successfully practice the hunting of large game, but were by no means restricted solely to this subsistence strategy. During the Late Paleo-Indian period, just as in other parts of North America, the inhabitants of the Trans-Pecos were beginning to take on subsistence strategies that were particular to the regional environment. In the early days of the Late Paleo-Indian period, big game animals were a central focus to these people, but by the end of the Clovis period (9500 B.C.-9000 B.C.), mammoth and certain other large game had become extinct in North America. Evidence shows that settlement patterns of Paleo-Indians were in fact influenced by the migration routes and availability of specific big game animals, but people incorporated a broad economic adaptation that exploited various other elements of their environment (Simmons et al. 1989:28). Reliance on smaller game animals and wild plant material was also an essential component of the Late Paleo-Indian adaptation. Bison seems to have been an important resource following the Clovis period. The Folsom peoples (ca. 9250 B.C.) of the region began to rely more heavily upon the hunting of bison, due in part to a rapid climate change and a vast expansion of short grass prairies.

Paleo-Indian remains, by their very nature, do not usually leave a pronounced mark upon the archaeological landscape, which leaves a lot of

unanswered questions about the particular practices and habits of these particular people. Perhaps more precise details and descriptions of these early people will be made known in the future as archaeological methods and techniques continue to evolve. Most of what archaeologists do know about the Late Paleo-Indian period comes from information concerning the artifacts that have been recovered from this time period. Late Paleo-Indian sites can be identified by the several diagnostic artifacts. Major projectile point types associated with Paleo-Indians in the southwest United States include: Clovis, Folsom, Midland, Plainview, Agate Basin, Firstview, Cody and Jay points (Simmons et al 1989:26). Specifically in the Trans-Pecos, diagnostic points used to help identify late Paleo-Indian sites include: Folsom, Meserve, Golondrina, Plainview, Angostura, San Patrice, and Midland types. Specific Paleo-Indian sites that have been documented are maintenance, armament, base camps, as well as processing, quarry and kill sites (Simmons et al. 1985:27).

Although many lithic artifacts from this time period have been recovered, much remains to be discovered regarding the specific lifeways of these people. Virtually all that is known about the Late-Paleo Indian period is based upon speculation and inference. Archaeologists are lacking specific details concerning Paleo-Indian population numbers, for instance, although it is inferred that population numbers were small. In addition to analyzing the material remains, much effort has been made in regards to learning about the paleoenvironment of Texas, in order to expand the data on the Late Paleo-Indian Period.

The Paleo-Indian cultural period occurred at the end of the last Ice Age. The environment at this time was characterized by cooler temperatures, increased moisture and lush vegetation that supported a diverse animal population (Clifton 1992:8). Parts of Texas were blanketed by vast wooded areas, while other parts were dominated by savannahs (Bryant and Shafer 1977:2). Around 10,000 years ago, the climate slowly became semi-arid. Temperatures began to rise and the amounts of moisture in the atmosphere were no longer present. The warmer, dryer climate of the Late Pleistocene was similar to the present-day climate of Trans-Pecos Texas. However, there was probably more grassland covering valley floors and more intermittent water sources than there are today.

Careful analysis of coprolites and other artifacts found in dry caves throughout the Trans-Pecos has indicated that the vegetation was also similar to today's vegetation; cacti and other plants typical of semi-arid climates, such as agave and sotol, thrived at the lower elevations. The woodlands continued to exist, but only in the higher elevations of the region. These environmental changes did not occur overnight, but the gradual warming and drying impacted the way people lived and adapted to their surroundings.

#### Paleo-Indian Complex in the Guadalupe

Although adequately represented in the Trans-Pecos region overall, Paleo-Indian sites are poorly represented in present-day Guadalupe Mountains National Park. Susana and Paul Katz have conducted extensive archaeological surveys of the

park, reporting that most of the Late Paleo-Indian sites consist of lithic scatters, with some diagnostic projectile points (Katz and Katz 1974:54-55). A Plainview point was recovered from a site located at the northern end of the Patterson Hills. While a base of a Plainview point was found on a bench on the southeastern reef face, and a probable Midland point was recovered from the northwestern portion of the park located on a ridge (Katz 1974:54-55). A portion of a biface attributed to the Paleo-Indian period was also found by S. and P. Katz at a site in Pine Spring Canyon. In addition, during a later survey of the park, Folsom type points were recovered from the western side of the park in the higher elevations, along with a total of fourteen sites represented by Plainview and Meserve points (Katz 1978:57). The Katzes' report that these projectile points were all found near, but not at, a water source. Interestingly, a Clovis projectile point was found to the north of the park's boundaries by E.B. Howard in Burnet Cave, located approximately twenty miles north of the Texas/New Mexico border and approximately thirty miles west of the city of Carlsbad, New Mexico. In 1932, Howard investigated a virtually undisturbed deposit in a dry cave where he found the remains of now extinct mammals along with a Clovis point, pushing back the antiquity of the Paleo-Indians in the area even further than previously believed.

Following the Late Paleo-Indian period was the beginning of a long tradition of a generalized hunting and gathering adaptation that existed throughout North America. In Trans-Pecos Texas, the Archaic Complex has been divided into a three-part temporal framework: Early Archaic, Middle Archaic and the Late Archaic.

Throughout each stage, the hunting-and-gathering lifestyle dominated, but subtle changes and adaptations in each stage are recognized.

### Early Archaic Period

Traditionally, not much is known about the Early Archaic (6500-3000 B.C.) in the eastern Trans-Pecos, due in part to the lack of specific data concerning Early Archaic lifeways. Early Archaic interpretation has been hampered by a deficit of adequate radiocarbon dates. In addition, a lack of archaeological data recovered in stratigraphic context (Boisvert 1980:23) has also led to difficulty in obtaining an accurate description of the Early Archaic Complex in eastern Trans-Pecos Texas. Although the Archaic lifestyle persisted for thousands of years, not much in terms of artifacts was left behind, thus further limiting our knowledge of specific Archaic behaviors and practices. What is known about the Early Archaic is that it was a time of profound change. There was a lot going on during this time; changes in the environment led to changes in the way people adapted to the environment. The Early Archaic period is characterized by an increase in the regional specialization of subsistence strategies, necessitated by a gradual change in the environment that began in the later portion of the Paleo-Indian period; the woodland vegetation was slowly being replaced by more xerophytic biota. In short, the environment was becoming more and more arid. Beginning in this stage of human occupation, people in this region were moving towards varying their patterns of hunting and gathering (Mallouf 1985:100). This was the beginning of a long period of diversified hunting

and gathering practices that were to continue for several millennia. Through careful analysis of the contents of dry caves found throughout the area, a limited picture of what these people may have been like has begun to emerge.

Archaic peoples, it seems, were extremely efficient at exploiting their environment. They relied almost exclusively on what natural resources were readily and locally available to them. S. Katz notes that the Archaic diet incorporated components that were “based upon food substances that were of greatest abundance and the easiest to gather” (1983:15). Food sources included a variety of wild plant foods and small game animals such as rabbits and rodents and deer were hunted on a regular basis after 5500 B.P. (Boisvert 1980:24). Another change that occurred in the Early Archaic concerns a shift in tool technology. The archaeological record shows that Early Archaic people began to replace the larger lanceolate dart points with stemmed dart points. Diagnostic points of this time (ca. 6500-4500 B.C.) include Baker, Uvalde, Martindale, and Early Barbed, followed later (ca. 4500-3000 B.C.) by Pandale, Bulverde, Travis, and Nolan (Mallouf 1985:101).

Without specific population data, archaeologists have theorized that Early Archaic peoples experienced low population density and maintained highly mobile, small bands. Artifacts from this cultural complex have been recovered from a variety of ecological settings, indicating that the people of the Early Archaic moved around frequently, taking full advantage of a variety of ecological niches. Although highly mobile, the people of the Early Archaic also increased their use of rock shelters and dry caves for habitation. Early Archaic peoples resided in open air sites as well; Early

Archaic sites typically include open hearthfields, middens, rock shelters, dry caves and lithic scatters (Mallouf 1985:102)

More is known about the Early Archaic cultures in south-central and southeast New Mexico and the lower Pecos than is presently known about the Early Archaic in the eastern portions of the Trans-Pecos region, including the Guadalupe Mountains. There perhaps may even be a link between the northern Trans-Pecos and the Archaic Cochise Culture of the greater Southwest. Archaeologists have looked to these other areas for insight about the eastern Trans-Pecos cultures. Similarities between the Early Archaic in eastern Trans-Pecos Texas and the area of the Lower Pecos and the northern region of Mexico have been observed. By closely examining artifacts recovered in the dry caves and rock shelters of the aforementioned area, archaeologists have obtained invaluable information regarding the people of the Early Archaic. They have concluded that these people were territorial and had a rich ceremonial life. Some examples of the material culture that has been found include unifacial stone tools, painted pebbles, matting, sandals, grass-lined pits and burned rock middens used for the processing of desert succulent plant foods. Wild plant foods such as sotol, lechuguilla, agave, and prickly pear were of utmost importance during this time period, not only for nourishment, but for utilitarian purposes as well.

#### Early Archaic Adaptation in the Guadalupe Mountains

Unfortunately, archaeological surveys in Guadalupe Mountains National Park have turned up little Early Archaic material. It is unknown if this is because this area

was virtually uninhabited during the Early Archaic, or if it is a result of sampling error. It should be noted that there is an overall shortage of Early Archaic sites in the entire northern portion of Trans-Pecos Texas. Surveys conducted by S. and P. Katz have yielded a small number of diagnostic points found mostly in the higher elevations throughout the park. Points were recovered from the following high country sites: a site located along the southeastern escarpment, a site located in the Bowl, one present on Guadalupe Ridge as well as other high country sites located in the north and in the east sections of the park (Katz 1978:58).

What is known about the Early Archaic adaptation of Trans-Pecos Texas, including Guadalupe Mountains National Park, is somewhat limited. Early Archaic people were highly adaptive and experts at utilizing the resources of their environment to their fullest potential. Changes were taking place during the Early Archaic; changes in the environment, changes in subsistence strategies, changes in tool technology, as well as changes in habitation sites, and these changes would be in place in the Trans-Pecos for years to come.

#### Middle Archaic Period

During the Middle Archaic (3000-500 B.C.) in the eastern reaches of Trans-Pecos, the generalized hunting and gathering life way that was established in the Early Archaic continued. Middle Archaic peoples continued to rely on the hunting of small game animals such as deer, antelope, and various rodents. The gathering of wild plant material for both food and fiber continued to be an essential component of

the Middle Archaic subsistence strategies. Cacti, sotol, agave, mesquite, and yucca met nutritional requirements and also provided fiber for the manufacturing of items such as sandals, baskets, cordage and matting. Regarding environmental conditions, the general drying trend that began in the Early Archaic continued, and the desert scrub vegetation interminably spread to the northern portions of the Trans-Pecos. At the end of the Middle Archaic, an interval of wetter conditions ensued which probably lasted for several hundred years.

Population numbers grew during this time, and archaeologists report that there was probably a tightening of band organization (Mallouf 1985:117). Middle Archaic sites were slightly larger than earlier ones and are more numerous throughout the region. During this time, people continued utilizing a wider variety of ecological settings, and there was more utilization of rock shelters for habitation. In addition, Middle Archaic sites are typically associated with burned rock middens, burned rock accumulations and hearthfields, demonstrating the high degree of importance placed upon the processing of desert succulents as a subsistence strategy.

Middle Archaic sites have been identified both by diagnostic projectile points and material remains assigned to this time period. Diagnostic points used to help identify Middle Archaic remains include Langtry, Val Verde, Shumla, Marcos, Almagre, Williams, Conejo, Lange, Marshall, and Tortugas types. Most of the material remains that have been recovered from the Middle Archaic in the Trans-Pecos have been found in the dry caves and rock shelters of the region. Items found give important insight into the lives of the people of the Middle Archaic. Middle

Archaic artifacts include sandals, basketry, matting, netting, cordage, various sticks, dart foreshafts, beads of stone and shell, flaking tools made from antlers, grinding stones, abraders, bone awls, manos, retouched flakes, scraping tools, hammerstones and cores. Archaeologists have even inferred a rich ceremonial life based upon some of the nature of the artifacts that have been recovered.

### The Middle Archaic in the Guadalupe

To date, there remains a lack of sufficient data concerning the Middle Archaic culture in Guadalupe Mountains National Park. Most of the Archaic material that has been recovered in the park dates to the Late Archaic (ca. 500 B.C.-A.D. 1000). An archaeological survey of the high country conducted by P. Katz (1978:58) yielded the recovery of several diagnostic projectile points attributed to the later half of the Middle Archaic period. Katz reports finding Shumla, Lange, Marcos, Marshall and Williams points in the higher elevations of the park. Generally, the Middle Archaic is poorly represented in the higher elevations of the Guadalupe Mountains. Katz and Katz (1974) combine the Middle Archaic with the Late Archaic cultural complex due to evidence that suggests that the projectile point chronology for the Middle and Late Archaic was in a state of fluctuation. The Middle and Late Archaic periods are not clearly delineated from each other, due mostly to the ambiguity of the findings regarding projectile point chronology. That is, projectile points that traditionally have been associated with the Middle Archaic period have been found in areas that are otherwise associated with the Late Archaic period and vice-versa.

### Late Archaic Period (500 B.C. -A D. 1000)

During the Late Archaic, drying conditions continued, with the intrusion of a wetter interval occurring just at the end of the Middle Archaic. This mesic interlude ended around 500-200 B.C. and was followed by the return of arid desert conditions. With the re-established aridity, Later Archaic peoples continued to rely heavily upon desert succulents for food and fiber. This is evident in the increased utilization of pit ovens for the processing of these desert succulents. The remains of numerous ring middens have been documented by archaeologists throughout the eastern portions of the Trans-Pecos. Agave, sotol, prickly pear and lechuguilla were important food sources, as was the continuing reliance upon small game hunting as components of their subsistence strategy.

Late Archaic peoples of the region continued to expand into a wide variety of ecological niches. Hearthfields, burned rock accumulations, middens, ring middens, lithic debris scatters, quarries, open-air habitation sites and rock shelters associated with the Late Archaic existed in riverine environments, in basins, along foothills and throughout the mountainous areas of the region (Mallouf 1985:117). These sites occur in higher density than in previous periods, which implies that population continued to expand. In part, Late Archaic sites can be identified by the presence of specific diagnostic projectile points. Ensor, Palmillas, Paisano, Frio, Edgewood, Ellis and Darl types help archaeologists assign remains to the Late Archaic period. The Late Archaic is also known for its rich material assemblage that has been recovered in rock shelters and dry caves in the eastern Trans-Pecos. Items that have been found

include: basketry, matting, fiber sandals, gourd vessels, scraping tools, deer bone awls, perforators, manos, slab metates, hammerstones, abraders, pointed sticks, digging sticks, fiber bundles tied to yucca stalks, split yucca fireboards, wooden tongs, scoops, stone beads and pendants, and shell beads. The presence of some of the nonutilitarian items has led to speculation of a complex ceremonial life, but no definitive details are known. There have been rock art sites dating possibly to the Late Archaic recorded in the region, but these are scarce in the eastern Trans-Pecos, including the Guadalupe Mountains. Burials possibly dating to the Late Archaic have been found in rock shelters. Adult burials have been of the flexed type, wrapped in rabbit fur and tied with cord made from human hair, while infants have been found in fiber cord baskets associated with offerings (Suhm and Krieger 1954:35).

This time period saw an expansion of the Jornada Mogollon culture into the western part of the Trans-Pecos, located in the vicinity of present-day El Paso, Texas. Although this culture, during this time, saw the incipient practice of limited agriculture, there seems not to be much of an influence of the hunting and gathering lifestyle of the eastern Trans-Pecos. Mallouf (1985:127) reports that it was quite plausible that some of the hunters and gathers of the eastern Trans-Pecos may have practiced limited agriculture, but cautions that the data for the most part does not support this. A couple of sites in the region have yielded a few clues that could support the presence of maize in the eastern Trans-Pecos. For instance, primitive flint corn was among the items recovered from Williams Cave in the Southern Guadalupe Mountains (Boisvert 1980:26).

## The Late Archaic in Guadalupe Mountains National Park

Late Archaic sites abound in the park. Sites are distributed in a wide variety of ecological settings. There are Late Archaic sites found both in the higher elevations and at the lower elevations within the park's boundaries. Late Archaic sites are also found in the canyons and caves of the park. The aforementioned Williams Cave located immediately south of El Capitan was excavated in the 1930s by Mary Youngman Ayer under the direction of E.B. Howard. This Late Archaic site has yielded artifacts distinctive to the Late Archaic. Items recorded by Ayer include: manos, flat metates, scrapers, sotol digging sticks, shafts and foreshafts, three different kinds of sandals, baskets and cordage. In addition to the material goods recovered from this site, a variety of faunal remains were found as well. A variety of small rodents, white-tailed deer, prong-horned antelope, wapiti, cougar, grizzly bear, gray fox, bobcat and yellow haired porcupine were all found in Williams Cave. In addition, the remains of now-extinct animals were also recovered from this site: horse, big horn sheep, dire wolf and ground sloth. Furthermore, there were three burials excavated. Two children and one adult were found in a "cradle burial," along with one adult in a bag burial.

Another important Late Archaic site located in the park is Pratt Cave. This site is located in the northeastern portion of the park along the south side of McKittrick Canyon. Carbon 14 dating places the remains found in this cave in the Late Archaic (ca. A.D. 540) (along with historical remains found in the surface levels, attributed to the historic period of the Mescalero Apache culture) (Schroeder

1983:25). In 1961, a cache of prehistoric items was discovered in the cave during a boundary survey conducted by a park ranger, and in 1965 excavations directed by Albert Schroeder ensued. Artifacts found in Pratt Cave include: whole olivella and disc beads which were most likely obtained through trade with groups to the south, bone beads, halite-obtained from the Salt Flats located to the west of the park, which indicates that these people participated in a clockwise circle of gathering and hunting (Schroeder 1983:26). Also found in Pratt cave were fragments of prepared hide, stone blades, large fragments of basketry and wooden artifacts, matting fragments that were painted red, a portion of a cordage bag, bits of soft fiber, s-twist cordage, and fragments of bear grass matting. In addition, an irregularly shaped hearth was uncovered. The remains of a human cremation were also found in the cave. All evidence suggests that the cave was not inhabited year round, but rather for short periods of time. Numerous edible plant remains were also recovered from Pratt Cave; prickly pear, lechuguilla, sotol, nolina, yucca, catclaw, grape, puccoon, globe mallow, panicum, Mexican buckeye, sumac, algerita, brittle grass, buckwheat, muhly, madrone, oak, hackberry, piñon and Mexican walnut. Schroeder (1983:34) is careful to note that one cannot be sure if these plant materials were indeed gathered locally by the cave inhabitants or brought in by animals. In any case, the presence of these plants gives insight into what kinds of food resources were available for the Late Archaic peoples associated with Pratt Cave.

Other notable Late Archaic sites in the Guadalupe Mountains were identified by H.P. Mera in the 1930s, when he investigated a total of thirteen sites, believed to

be of Late Archaic age (Boisvert 1980:28). In Higher Sloth Cave, a midden ring was located inside of the cave, and this and the other sites yielded artifacts of agave quids (chewed portions of inedible agave leaves), sandals, a piece of net, and a large hardwood projectile point.

The Late Archaic corresponds closely with the Transitional Period (A.D. 1-800) of Katz and Katz (1974:57). They have chosen a separate temporal framework that accounts for the specific changes that occurred in the park during this time. The Transitional period in Guadalupe Mountains National Park is characterized by the appearance of ceramics and new types of midden formations. Data collected by Susana and Paul Katz have also indicated a significant Transitional presence in Guadalupe Mountains National Park. The Katzes report a large number of Late Archaic/Transitional sites concentrated in the northern reaches of the park, in the Coyote Peak area (Katz and Katz 1974:57-58). These sites are composed of lithic scatters, mounds, and midden rings. Artifacts recovered include burnt rock fragments and small numbers of ceramic sherds of Brownware pottery type. P. Katz (1978:58) reports the recovery of Late Archaic diagnostic projectile points scattered throughout the higher elevations. Points found along the top of Wilderness Ridge, at the head of South McKittrick Canyon, and along the north fork of Devil's Den Canyon indicate the utilization of more territory during the Late Archaic within the park's boundaries.

Perhaps more details are known about the Late Archaic in Guadalupe Mountains National Park than are known about any other period of prehistoric occupation. Excavations conducted in the many caves and open sites of the park have

yielded information that indicates a significant occupation of Guadalupe Mountains National Park during the Late Archaic period. Artifacts recovered here and in other sites in the Trans-Pecos have proved priceless in teaching us about details of the Late Archaic lifestyle. Close examination of floral and faunal remains has allowed for a reconstruction of the Late Archaic environment as well as the diet of the Late Archaic people. It seems that people of the Late Archaic in the eastern Trans-Pecos, including the Guadalupe Mountains continued to utilize their natural surroundings to the utmost efficiency.

#### Late Prehistoric Period (A.D. 1000-1500)

The Late Prehistoric Period was a time of change in Trans-Pecos Texas. Remarkable advances in technology were achieved. Ceramics, and limited agriculture in some areas, became more prevalent. Also it is during this time period that the bow and arrow were introduced. In the midst of these changes, however, the general hunting and gathering lifestyle of the Late Archaic remained in effect. Late Prehistoric Peoples of the eastern Trans-Pecos Texas were probably influenced by the Jornada and Puebloan cultures, but this occurred primarily in the northern limits of the Trans-Pecos. It is believed that although the Late Prehistoric peoples may have come into contact with the agriculturalists, they maintained the long tradition of hunting and gathering that had been previously established in the region (Mallouf 1985:128).

There appear to be a lot of similarities between the Late Prehistoric period and the Late Archaic. Late Prehistoric settlements are located in a wide variety of ecological settings, just as they were in the Late Archaic. The use of rock shelters and sites at higher elevations continued to intensify during this time period. Similarities abound in subsistence strategies as well. As previously mentioned, the hunting and gathering lifestyle remained in practice, along with limited small scale agriculture in some areas. As in the Late Archaic, the reliance upon desert succulents for food and fiber cannot not be overstated. Prickly pear, agave, sotol, and lechugilla were essential staples in the Late Prehistoric diet, while yucca contributed the fiber needed for constructing baskets, sandals and matting. During this time, the practice of hunting became more important than it had been previously. Small and large mammals, birds, and insects were important sources of food.

Late Prehistoric sites are associated with ring middens, hearths and burned rock accumulations. Sites of this time can be identified by diagnostic projectile points and specific ceramic types. Projectile points corresponding to the Late Prehistoric period are Fresno, Harrell, Perdiz, Scallorn and the Livermore types. While ceramics common in this region during the Late Prehistoric are Jornada Brownware, El Paso Polychrome, Chupadero Black-on-White, and Three Rivers Red-on-Terracotta. Ceramics filtered into the area via the El Paso region, most likely around A.D. 1300 (Mallouf 1985:128).

Artifacts recovered from this period are those typically associated with a hunting and gathering lifestyle and indicate a rich material culture. Stone tools used

for processing plants and animals, bone awls, bows and arrows, arrow points, dart points, baskets, matting, manos, milling stones, mortars and pestles, and stone bowls have all been found at sites of Late Prehistoric age. Other items possible for ceremonial use include beaded rattles, prayer sticks, noisemakers, turquoise beads, shell beads and pendants and various other ornamental items made of wood, stone, bone and fiber. Some rock art in the region has been attributed to the Late Prehistoric which is indicative the presence of a ceremonial life. Burials of this time include those of the flexed and reclining positions, with grave goods being present in some instances. Burials also occurred in crevasses, sinkholes, and under piles of rock.

#### The Late Prehistoric Period in the Guadalupe

Numerous Late Prehistoric period sites have been identified in Guadalupe Mountains National Park. It was during this time span that the area was most intensively utilized by prehistoric peoples (Simmons et al. 1989:116). The majority of the Late Prehistoric sites located within in the park are situated on alluvial fans and low elevation flatlands, perhaps suggesting the practice of agriculture (Mallouf 1985:128). However, specific evidence for the presence of agriculture in the southern Guadalupe Mountains is lacking.

Sites located at the higher elevations are associated with ring middens, suggesting that the processing of plant material remained an important economic activity well into the Late Prehistoric period (P.Katz 1978:58). Other Late Prehistoric period sites include large base camps, where artifacts of ceramic and stone were

recovered. Other artifacts recovered in Guadalupe Mountains National Park from the Late Prehistoric Period are chipped stone debris, various stone tools, including those used for cutting and scraping, projectile points, ceramics-both plain and decorated, grinding implements-handstones and grinding slabs. Features dating to this time period are ring middens used for the processing of desert succulents such as sotol and agave, and midden mounds or accumulations of burned rock (S.Katz 1983:110-134).

Early archaeological work conducted in and around the park has also provided evidence of Late Prehistoric occupation of the region. In 1938, H.P. Mera excavated Goat Cave and Wild Horse Cave. A burial, large amounts of vegetable matter, wooden projectile points, dart foreshafts, cane shafts, small hardwood sticks, a small piece of a rabbit skin robe, and ceramic sherds of the El Paso Polychrome and Chupadero Black-on-White types were among the artifacts recovered. The exact context in which the items were found is unknown. In Wild Horse Cave, artifacts recovered by Mera include mescal quids, other vegetable matter, fragments of basketry, a scraper, a knife, ceramic sherds of Jornada Brown and Chupadero Black-on-White. Later, in the 1940s, Edwin Ferdon, Jr. excavated Hermit's Cave, where he documented three levels of occupation (Boisvert 1980:32). Artifacts found in Hermit's Cave include Chupadero Black-on-White, Lincoln Black on Red and Pueblo II ceramic sherds. He also reported a shift in technology from the lower to the upper levels: projectile points associated with atlatls found at the lower level and projectile points used with the bow and arrow in the upper level of the cave. Though no permanent structures of Late Prehistoric age have been documented within the park,

just one hundred miles to the northeast in Lea County, New Mexico a site containing fourteen permanent structures was excavated in 1965. This site, known as the Merchant site, consists of surface houses and semi-subterranean pit houses believed to have been occupied around A.D. 1400.

The Late Prehistoric period in Guadalupe Mountains National Park is an interesting period. For the most part, evidence suggests that hunting and gathering was the dominant subsistence strategy. Perhaps the park saw the beginnings of agriculture; certainly some of the settlement patterns may suggest that some of the Late Prehistoric period inhabitants of the park may have practiced agriculture, though to what extent remains to be known. Important changes in technology can also be seen. For example, evidence of the bow and arrow as the preferred hunting implement has been documented at sites throughout the park. Ceramics also became more prolific during this time period in the Guadalupe Mountains and in the surrounding Trans-Pecos. The Late Prehistoric peoples of this area continued to make the most of what was available to them. Expertise in hunting and an extensive knowledge of the procurement and production of wild plant foods allowed for a successful coexistence of Late Prehistoric peoples and their natural surroundings.

### Conclusion

Guadalupe Mountains National Park enjoys a long, rich history of human presence. It seems that people have always been drawn to this place. Prehistoric occupation of the park and the surrounding Trans-Pecos has been well documented.

Undoubtedly, prehistoric peoples were also attracted to McKittrick Canyon; numerous archaeological surveys and excavations conducted in and around the canyon have proven this. People sought shelter in the canyon's caves, and they also took advantage of the abundant supply of McKittrick Canyon's animals and wild plant foods. When you look around the canyon today, it is not hard to imagine why people have always wanted to live and work here.

## CHAPTER IV

### THE ADAPTATION OF THE NDÉ PEOPLE TO THE GUADALUPE MOUNTAINS AND SURROUNDING AREA

The Guadalupe Mountains have long been an important place to the Ndé People. The mountains serve as one of the Ndé's sacred centers. To the Mescalero Apache of the region, this was the place where they were created and is the center of their sacred territory. They have no stories of migration from other places; this was the center of their traditional territory. The Guadalupe Mountains of Trans-Pecos Texas had much to offer the Ndé. In addition to holding spiritual significance, abundant food and fresh water also made this an important home base for the people who lived in and around the mountains.

Before going any further, it is imperative to examine the nature of the name "Mescalero Apache." The Ndé were known to the Spanish, and later to the American settlers who also moved into their traditional territory, as "Mescalero Apache" even though they already had a name for themselves. They referred to themselves as Ndé, which means "People" or "The People." "Mescalero Apache" is a term that was applied by outsiders. The term "Apache" predates the arrival of the Spanish. It originated from the Aztec's nahuatl word "mapatl," which is one of the terms for "raccoon." This is what the Aztec speakers called the Ndé in reference to the band of paint that on certain occasions, they wore upon their faces. When the Spanish arrived in Ndé territory they, asked the Aztec speakers what these people (Ndé) were called,

thus perpetuating the practice of referring to them as raccoons. The word “mapatl” was then corrupted into the word “Apache” by the Spanish. Further, the Ndé have come to be commonly known as the “Mescalero Apache” due to the fact that the Spanish first came into contact with them while they were harvesting the mescal agave, a highly significant ritual food source. So because of this, the Ndé have had this foreign term of “mescal eating raccoons” given to them by outsiders. Today the Ndé are still commonly referred to as Mescalero Apaches.

Where did the Ndé come from? How did the Guadalupe Mountains come to be such an important place? The Ndé recognize several sacred centers. These centers called *?iNdéislum nakah* literally “a place where Indians get together” (Basehart 1974:79). One such center in the present-day Guadalupe Mountains. Historically, the Guadalupe Mountains were a place where groups of Ndé concentrated and moved outward throughout the rest of their territory.

As with other Native Americans, the Ndé have very strong feelings about their land. They were bound to their landscape by a sacred edict set forth by their creator goddess, White Painted Woman. To the Ndé, White Painted Woman created the earth and populated it with plants, animals and people. In one telling of their origin story, before there were people the world was inhabited by supernatural monsters. White Painted Woman gave birth to Child of the Waters. Over time, he matured and grew stronger, eventually confronting the powerful monsters while making the earth an acceptable place for humans to live. Child of the Waters was able to slay the monsters after being instructed by White Painted Woman to set forth on a vision quest

to each of the four sacred directions to seek the power of each of the four sacred mountains. First, he traveled to the east to obtain the power of black lightning. Next, he moved on to the sacred mountain of the south, where he was struck by blue lightning. He continued moving in a sun-wise path and went to the sacred mountain of the west where he received the power of yellow lightning, after which he traveled to the north where he received power from white lightning. This sun-wise movement not only provided Child of the Waters with the supernatural power to combat the monsters and make the world hospitable to humans, but also set the core of Ndé life and mentality. From this point on, the Ndé were bound to their landscape by a sacred edict set forth by White Painted Woman, whose reclining profile can be seen in the outline of the Guadalupe Mountains today.

### Traditional Landscape of the Ndé

The traditional lands of the Ndé encompassed a sizable amount of territory in the southwestern corner of present-day New Mexico, portions of west Texas and extended southward into Chihuahua and Coahuila, Mexico (Figure 4.1). This land was marked by extensive physiographic variation: mountains and valleys, rivers, streams and the flat lands (Llano Estacado) made the region a very interesting place exhibiting diverse climatic features, vegetation and wildlife.

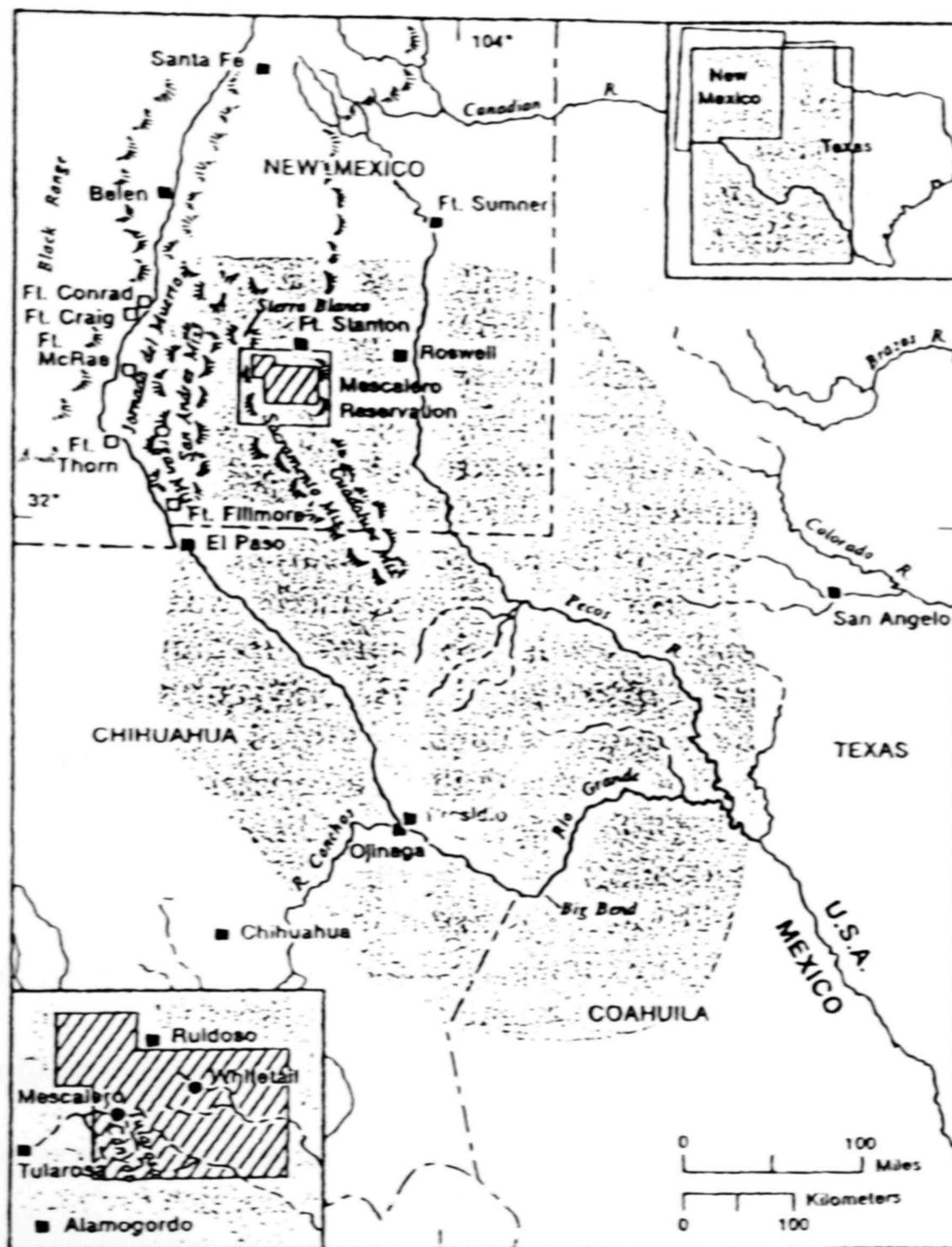


Figure 4.1 Traditional Homelands of the Mescalero Apache (from Opler 1983)

Historically, the Ndé moved throughout their territory taking from the land only what was necessary for survival. No one owned the land, and men and women were free to utilize the natural resources as needed. The Guadalupe Mountains were a place that offered to the Ndé rich natural resources of both plants and animals. The Ndé who lived in these mountains and throughout their traditional territory knew a great deal about the land and viewed themselves as a part of their traditional territory. The Ndé moved about their territory in a circular or sun-wise pattern (Figure 4 2). This sun-wise movement is another manifestation of the Ndé's sacred link to their land. It goes even deeper, as it is a representation of their view of the cosmos. This view is perhaps best described by Claire Farrer (1991:207) as the "base metaphor" and is represented by the symbol "⊕".

Not only does it represent the culture and its material environment, but it also represents observations of the natural world and behavioral imperatives that are said to flow from these observations... it is the base metaphor upon which all social, psychological, philosophical and moral life is predicated...

To comprehend the concept of "⊕" is to gain a better understanding of the connection between the Ndé and their landscape. The concept "⊕" is expressed through the traditional sun-wise circular, seasonal movement which began in the east. The Ndé moved to the Llano Estacado to participate in the hunting of buffalo (*Bison bison*). This grassland region is characterized by little or no relief. Blue gramma grass, soapweed yucca, cholla and prickly pear dotted the flat extension of the southern plains and were utilized by the Ndé as food and for utilitarian and spiritual purposes. In addition to buffalo, while living in this part of their territory, the Nde

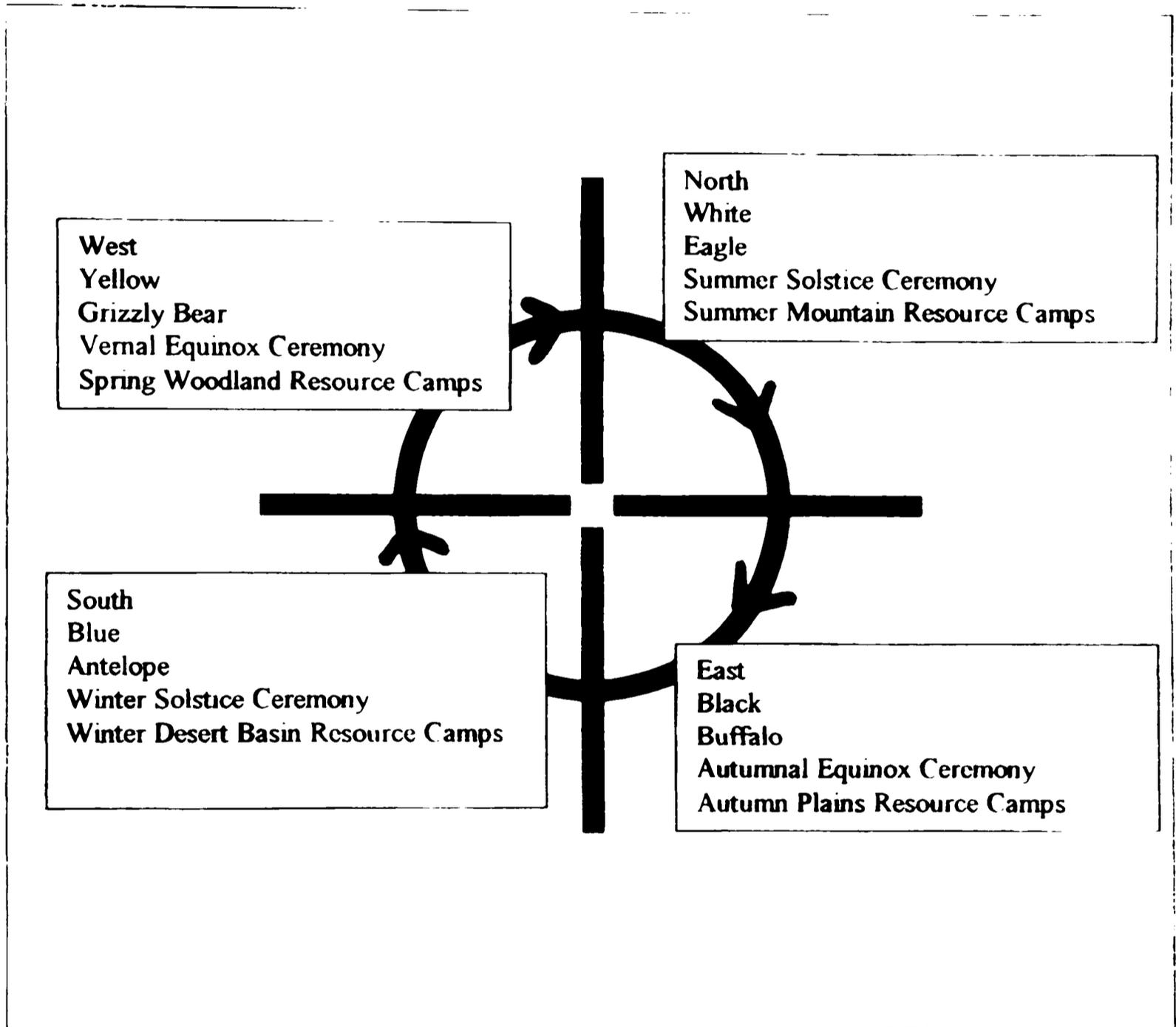


Figure 4.2 Traditional Sun-wise Pattern of Movement of the Ndé  
(from Goss 1991).

relied on prairie dog, cottontail and jackrabbit for food. Continuing the sun-wise pattern of movement, the Ndé spent the winter in the southern desert basins of present-day Northern Chihuahua and Coahuila, Mexico. This region is characterized as semi-desert brush land and is marked by several indicator plants and animals, all of which were utilized by the Ndé. Vegetation of the southernmost boundary of the Ndé included: mesquite, creosote brush, tarbrush, Spanish bayonet, and prickly pear. Wildlife was represented by jackrabbit, mice, rats, and gophers. Javelina were abundant, though they were not a food source for the Apache. Prior to overgrazing, black gramma grass and tabosa grass thrived.

The spring season was traditionally spent in the west. Adhering to the sun-wise movement, just after the vernal equinox, the Ndé moved into the woodlands. At altitudes of 4,500-7,000 feet, juniper, piñon pine and oak forests characterized this region. Soapweed, datil, cholla, Apache plume and manzanita were also typical of this area. Abundant wildlife included deer, bear, elk and cottontails.

Following the summer solstice, the Ndé moved into the northern portion of their traditional territory, preferring to spend the warmer months high in the cooler elevations of the mountains. This high forest region (above 7,000 feet) was home to Douglas fir, Ponderosa pine, and white fir. At altitudes exceeding 7,000 feet, Engleman spruce and subalpine fir were found. Shrubs such as chokecherry, raspberry, currant and red elderberry were abundant, as were many species of mammals, such as deer, elk, mountain lion, rabbits, bear and porcupine. This pattern was followed virtually uninterrupted until the time of European contact.

## Subsistence Patterns

The Ndé were expert ecologists. They knew their traditional lands well and were able to thrive in numerous, distinct climates and physiographic regions. The Ndé were extremely knowledgeable about their environment. They knew what plants thrived in what areas and were experts at harvesting and preparing plants for consumption and other practical uses. They were efficient hunters, and they thrived in areas that have been described as inhospitable by some. Gathering contributed an essential component to the diet of the Ndé, it superseded hunting in terms of nutritional importance. Plants were perceived by the Ndé as living, breathing beings that were entitled to the same respect and care that humans received. Plants were often referred to as having human characteristics. For instance, plants surrounded with smaller ones of the same kind were referred to as “a mother and her children,” while some plants were known as “brother” and “sister” (Castetter and Opler 1936:17).

It was the women who traditionally specialized in the gathering and preparation of wild plant foods. Utilization of such a diverse collection of plant foods provided the Ndé with a diverse and nutritious diet. The four most important wild plant food resources were mescal (*Agave neomexicana*), piñon (*Pinus edulis*), mesquite (*Prosopis glandulosa*) and datil (*Yucca baccata*). It is significant to note that these four essential resources are also the four sacred foods utilized in the Girl's Puberty Ceremony- the most important ceremonial of the Ndé People. All four of the sacred foods were available to the Ndé of the Guadalupe Mountains.

The mescal agave, specifically *Agave neomexicana* or *Agave parryi*, called *nada* by the Ndé, commonly known to many as mescal or the century plant, was valued as a principal food source. Mescal of one species or another was available throughout much of the Ndé territory, and after it was prepared and dried it would keep for a number of months, thus allowing the Ndé to use it throughout the year (Basehart 1974:31). It was highly prized as a reliable food source that could get the Ndé through times when other food sources were in short supply. Traditionally, a relatively small group of women accompanied by several men constituted the mescal gathering party. It was the women who harvested the mescal; the men went along for protection and in some instances hunted while the women gathered. The women would rely on the Ant People to help them select the mescals that were ready to be harvested: Ants are attracted to the sweet juices of the mescal crowns just prior to when they are to bloom. First, the women would use a digging implement made from an oak branch to remove the mescal from the ground. This oak branch was about three feet long and flattened at one end. The digging implement was wedged in between the stems of the mescal, and at one end, hit with a rock, enabling the crown of the mescal to be removed. The leaves were then chopped off with a stone knife leaving only the heart of the mescal to be cooked.

Mescal was (and still is) roasted in a subterranean pit oven. The remains of pit ovens have been found in Guadalupe Mountains National Park by archaeologists. Depending upon how far the mescal harvest was from an Ndé base camp, the pit may have been dug at camp or near where the mescal was harvested. The sacred

importance of the mescal was evident in the many prayers and ritual behavior that accompanied the preparation of the pit oven and the roasting of the crowns. After the pit was dug, a stone placed in the center was smudged with ashes in the shape of a cross and was accompanied by prayers designed to ensure the success of the mescal cooking (Basehart 1974:31). The pit floor was then lined with rocks and a fire was built using oak and cedar wood. The mescal was piled into the oven and covered with moist grasses, including grama, bunchgrass, Texas-crab grass, big-blue stem, marsh foxtail, and the much preferred bear grass (Castetter and Opler 1936:36), the latter being prized for its slow burning properties.

The cooking process, which began before sunrise, took four days, four being the ritual and sacred number for the Ndé. After the wood finished burning, the mescal hearts were removed and pounded into a pulpy consistency, and the flattened mescal pulp was spread onto baskets made from *Yucca elata*. Mescal was eaten following this process, or it could be dried for storage and consumption at a later date. Mescal as food was used in a variety of ways; it was eaten by itself or added to other wild foodstuffs such as ground *piñon* seeds, juniper berries, and the fruits of the sumac. The importance of mescal to the Ndé people cannot be overestimated. The Guadalupe Mountains was one of the most favored collecting spots for mescal.

The *piñon* pine was another important sacred food of the Ndé. The high caloric value and protein content of the *piñon* seeds made this wild food source highly desirable. *Piñon* seeds were usually gathered in October when the nuts were ripe. *Piñon* nuts were picked up off the ground after they had fallen or were shaken loose

from the tree. Women traditionally participated in the harvest, in some instances collecting up to twenty-five pounds in one day (Basehart 1974:37). The seeds were ingested raw, roasted and could also be prepared as a pudding. If the nuts were parched before storage, they would last for long periods of time. Thus during periods of abundance large amounts would be collected and prepared for future consumption. *Piñon* pine pollen was used as a substitute for cattail pollen in certain Ndé ceremonials.

Another important food source was the fruit of the datil (*Yucca baccata*). Like mescal, datil was favored for its widespread availability and storage capabilities. It was available almost year round in the Guadalupe Mountains. It was usually harvested by small groups of women. Ripe fruits were cooked on an open fire using tweezers made of oak or sotol, then mashed or set out to dry on beargrass mats. In addition to providing nutritional subsistence, the datil was revered for its purpose in rituals and ceremonies. For example, the root of the *Yucca baccata* was the main ingredient in the shampoo that was utilized to wash the hair of the young women during their puberty ceremony, and part of the roots were also used for basket making.

Another important widespread food resource was the prickly pear (*Opuntia phaeacantha*). The fruits, called tunas, required little preparation. They could be peeled and eaten raw or boiled or dried. They, along with other cactus fruits, were collected by the Ndé women and carried back home in baskets. Although a valuable food item, the prickly pear was also viewed as potentially dangerous, and precautions

were taken when harvesting and preparing the tunas. If eaten in excess, the prickly pear was believed to cause illness, therefore the amount consumed was carefully monitored.

Sotol (*Dasyliirion wheeleri*), was utilized in a similar manner as mescal, although the taste of mescal was preferred to sotol (Basehart 1974:41). It was harvested and cooked in the same way as mescal. Once cooked, sotol was pounded and formed into cakes to which other plants might be added. It would either be consumed or dried for long-term storage, and it was also made into a drink. Sotol was a versatile resource. Not only was it eaten, but many other products were made from this plant. It was a material used to construct the headdresses of the sacred Mountain Spirit Dancers; sotol stalks were also used to fashion the back of cradleboards.

Juniper berries were utilized as a food source, although they were not as important as other collected plant foods. Berries were collected casually by individuals and were prepared by boiling to remove the resin and then ground. Often juniper berries were added to other foodstuffs as opposed to being eaten alone (Basehart 1974:43).

Oak contributed a minor amount of food to the Ndé people. Acorns were gathered for food, although they were not a preferred resource, as the taste was not pleasing and they did not store well (Basehart 1974:42). Upon collection in the fall, the women would prepare the acorns by boiling, then pounding into a flour. In addition to being used as a food resource, the oak provided the raw material from

which several important tools were made. Digging sticks, tweezers, tipi stakes and bows were all constructed of oak.

### Minor Plant Resources

In addition to the most important plant food resources (mescal, datil, cactus fruits, pinenuts/acorns) the Ndé utilized a variety of less significant plant foods.

Many of these plants did not contribute significantly to their subsistence, but were highly desired by the Ndé. These highly desirable resources were used in smaller quantities and added to some of the basic food resources, as already discussed.

Basehart (1974:44) classifies these minor food resources into three categories:

vegetable products, fruits and berries, and non-edible products. "Vegetable products" included, but are not limited to: screwbean (*Strombocarpa pubescens*), various types of grass, cactus (*Echinocereus*), wild potatoes, onions, greens, cattail (*Typha latifolia*), walnut, locust, pine, pepper, mulberry, sumac, chokecherry, gooseberry, strawberry, raspberry, elderberry, aspen, plums, grapes, Apache plume, fir, beargrass, willow, gourd, sunflower or "Yellow flower," cottonwood and maple (Castetter and Opler 1936:44-46).

### Medicinal Plants Utilized by the Ndé

Many plants were used only for medicinal purposes. Knowledge regarding plants used for specific curing ceremonies was the specialty of a few men and women, but plants that had common healing functions were known about by the

majority of the population. Plants used as medicines were gathered at the same times as food plants were being gathered. The medicinal plants were gathered as the need for them arose. They were not as plentiful as food plants, and careful attention was given so as not to deplete the supply (Basehart 1974:52).

Angelica, an herb, was used to bring about remedies for symptoms associated with colds, loss of appetite and nosebleeds, as well as alleviation of common aches and pains. Medicinal properties would be administered to the patient by either mixing the root shavings with tobacco and smoking, smelling, swallowing or applying the herb in a paste form (Basehart 1974:52). “Yellow Medicine”, a root found exclusively in the mountains, was used to treat cuts and infections. It was prepared by boiling and then poured over cuts. It was also made into a paste and applied directly to the skin to reduce swelling.

#### Drink Plants and Narcotics

The most important beverage to the Ndé was *tulbai*, which means “water, grey.” This intoxicating beverage, prepared by the women, was made from germinated maize. After the shelled maize had been soaked in water and allowed to germinate, the corn sprouts were then ground and boiled in water. This mixture was cooked until it was reduced by half, then water was added to the combination. Next, the mixture was strained, cooled and allowed to ferment (Castetter and Opler 1936:50).

Another spirituous beverage was made from mescal. Roasted mescal crowns were chopped into small pieces and pounded into a paste or pulpy consistency. This pulp was then placed into an animal hide pouch and buried underground for at least two days. Upon unearthing the concoction, the mescal juice was squeezed into a container where it fermented for several days. Castetter and Opler (1936:52) also describe a drink made from sotol in a similar fashion as the mescal drink. Beverages were made from other plants as well. Pinole was (and still is) a common drink, with its main ingredient being the fruit of the screw bean. Tunas from the prickly pear cactus were mashed and their juice extracted in order to make a non-intoxicating, nutritious beverage.

Some plants were occasionally used as narcotics by the Ndé. Mountain laurel (*Broussonetia secundiflora*) is an evergreen shrub found commonly in the Guadalupe Mountains. The beans, which have a narcotic effect, were rarely eaten by the Ndé (Castetter and Opler 1936:54), but reference to mountain laurel in Ndé trickster-coyote myths is prevalent in Ndé story telling. Peyote was also employed as a ceremonial narcotic by the Ndé. The peyote buttons were collected and dried and eaten in ritual context. Castetter and Opler (1936:56) note that ingestion of peyote produces vivid visions that are of great ceremonial and sacred importance. The fruit of the coyote cactus which are crushed and added to tulbai have narcotic affects. These effects are so pronounced that one single fruit is said to make one “drunk and dizzy” (Castetter and Opler 1936:55).

## Miscellaneous Products

Other important resources utilized by the Ndé were also collected from the landscape. These include salt, chalk and yellow ocher, (used to make body paints, used in important rituals and ceremonies) fuels and firewood. Different types of rocks were also gathered and used for various implements. For example, metates were made out of red sandstone (Basehart 1974:55).

## Water Resources

As might be expected, the availability of water was an important influence on how the Ndé adapted to their environment. The importance of water may best be illustrated by the number of different descriptions the Ndé employed when referring to water sources. For instance, the Ndé differentiate between a spring which is never dry and a spring which had dried, but since had become active. Their detailed vocabulary takes into account many aspects of their water supply thus signifying the importance of water.

## Animal Resources

While collecting was carried out by the women, it was primarily the responsibility of the men to hunt. Just as gathering was tied to ritual observances and action, so was hunting. Hunting was closely regulated by ceremony and ritual. Careful attention and proper ritual procedures were followed when an animal was killed.

Animals taken in hunting that significantly contributed to the diet of the Ndé include the deer, antelope and bison. Rabbit and prairie dog were also hunted in times of need, but were not as frequently utilized or desired as sources of meat. Both the blacktail and the whitetail deer were utilized by the Ndé, although the blacktail deer was favored and considered to be the most important source of meat in the Ndé diet.

The hunting party, which was organized informally, consisted of a group of men not numbering more than ten, and their families. Once a base camp was established, the men would hunt in small groups or seek out deer individually. Basehart (1974:13) notes that the procedure for hunting deer was fundamentally the same, regardless of what implements were used. It made little difference if the hunter was using a bow and arrow or a gun; the operation was executed in the same manner. The hunter would follow the trail of the deer, sometimes using a headdress made from deer antlers. This would allow him to get close to the animal. The deer were preferably hunted in the fall and could be found throughout the traditional territory of the Ndé; the Guadalupe, Sacramento, White, San Andres, Capitan and Oscura mountain areas. The Ndé hunters were required to share their animals with members of their hunting party and other people who asked for a ration. Upon return to the basecamp, further distribution was performed, but not until the meat had been prepared. The Ndé utilized almost every part of the deer. Much of the meat was cooked when fresh, but some was dried and preserved for later consumption. The internal organs were boiled or broiled and even the hooves were prepared in such a

manner so as to be used as food (Basehart 1974:14). Hides were used for clothing, blankets and shelter, sinew was made into strong thread and bones were fashioned into tools (Basehart 1974:14).

The antelope was also an important animal resource to the Ndé. The antelope were hunted on the Plains using the “surround” technique. This involved a group of men who followed the antelope, until it became tired and vulnerable, whereupon one of the hunters would then shoot it or capture it with a lasso. One person in the group might wear an antelope headdress if he was in possession of the “special power and ritual knowledge” (Basehart 1974:15). Different from deer, the antelope could be hunted at any time. Prime areas for antelope hunts existed throughout the territory of the Ndé.

Bison were also a highly significant source of meat and other products for the Ndé. It is described as being second only to the deer in terms of subsistence importance. Bison were hunted east of the Pecos River on the Llano Estacado (including the areas of present day Amarillo and Lubbock), and at times the Ndé were in competition with other groups such as the Comanche when hunting on the plains. Bison meat was used for food, and the hides were the preferred material for tipi covers. It is important to understand the ritual significance of the bison: they were associated with the supernatural; “Great Hunter” released bison for the Indians to hunt at the “very beginning,” providing as well a verbal formula which some hunters acquired and which brought “good luck” (Basehart 1974:20).

Anticipation of the bison hunt involved much preparation, planning and cooperation. Groups typically moved onto the Plains in the fall. Upon arrival, basecamps would be established. The men would spend the majority of the time hunting while the women devoted their time to the preparation of the bison meat and hides. The actual hunting procedure was not so structured, but its success depended upon the cooperation of all of the hunters. Bison were hunted using a bow and arrow and a lance. The aforementioned “surround technique” was employed with and without the horse. Just as other food resources were shared, so was the bison. It was customary for all of the men in a basecamp to be allowed to participate in the bison kill and select their preferred cut of meat. Bison meat was prepared in much the same manner as deer meat. It was eaten fresh as well as jerked for long-term preservation. Bison meat was prized for its ability to keep longer than most other meats. As the case with the larger animals, virtually all of the bison was put to use. Blankets, tipi coverings, moccasins, tools were all made from bison parts.

Elk were also plentiful in much of the territory of the Ndé, especially in the Sacramento and Guadalupe Mountains. Despite the availability of elk, the Ndé did not participate in organized hunting of these animals. The meat and the hide of the elk were utilized, although the meat was not particularly desirable as a food source.

Other large game infrequently hunted by the Ndé included mountain sheep, mountain lion, bobcat, bear and wolves. Mountain sheep were rarely hunted although their meat was favorable and their hides a prized blanket material. The mountain lion was not usually hunted intentionally, but would be killed if encountered. If a hunter

etched a cross on the paw of a mountain lion this would allow the hunter to possess the “hunting luck” of the animal (Castetter and Opler 1936:25). The meat was not consumed by most people, but the hide of the mountain lion was utilized for clothing and blankets; the claws were fashioned into necklaces.

Most of the Ndé avoided and feared the bear. The bear was associated with supernatural powers, which could be detrimental to humans. Only those who possessed the power of the bear would be able to consume bear meat and use its hide. The bear was so revered and feared that the real name of the bear was never spoken for fear that illness or harm may be inflicted upon the person who spoke of the bear (Basehart 1974:27). Other animals were also associated with the supernatural and were never hunted for meat or pelts. The wolf, the fox and the coyote were all avoided. They too could bring about illness and disorders to humans.

Small game was hunted in times when the larger, more desirable game animals were scarce. Their meat was not preferred, but would be consumed in times of need. Prairie dogs were killed only for their meat, which is described as being very “fatty” Rabbits were also hunted and consumed in times of need. Equipment used to hunt rabbits included bows and arrows, stones, clubs and fire. Just as the prairie dog, only the meat was utilized; the fur was rendered useless.

Occasionally, badger, squirrel, skunk and turtles were used for food. Animals that were never eaten include: snakes, frogs and porcupines. Snakes were feared and avoided by the Ndé. Turkeys were the only birds that were of any significant importance as a food resource to the Ndé. Other birds, such as dove, pigeon and

quail, were eaten in some instances and their feathers were used for arrows. Feathers were also collected from eagles, hawks and buzzards.

### Language of the Ndé

The Ndé are members of the Athapaskan Language family. This language family can be divided into three subgroups, each of which being associated with a specific geographical region in North America: Southern Athapaskans, Northern Athapaskans (Canadian or Alaskan) and Pacific Coast Athapaskans (Figure 4.3). This theory explains that the Southern Athapaskans represent a recent migration of the Athapaskan people into the present-day American Southwest. These Athapaskan speakers are the Apachean peoples which include the Western Apaches-Navajo, Chiricauhua, Mescalero and San Carlos divisions, and the Eastern Apaches-the Jicarilla, Lipan and Kiowa-Apache.

The migration of the Southern Athapaskans was said to have taken place around 1,000 years ago, but historical evidence seems to indicate an even greater antiquity in the Southwest (Forbes 1960:xx). Most historians believe that the Apaches were in the southwest by 1500 AD and migrated south from present-day Alaska and Canada. However it is important to note that Ndé who lived in the New Mexico region upon Spanish arrival had always considered themselves to be the original people of the area. They insisted that they predated the Pueblo inhabitants, and there is mention of this in some historical documents. For example, Fray Alonso de Benavides (ca 1626) remarked that the central Río Grandé Valley of New Mexico



*Modern names for geographical features supplied.*

**Athapascan Distribution**  
 c. 1600 for Southern Athapascans  
 c. 1850 for Other Tribes

Figure 4.3 Geographical Distribution of Athapascan Language Family  
 (From Forbes 1960)

was at one time inhabited by the Apaches and that the Pueblo Indians coming from the northwest four corners region drove the Apaches out (Forbes 1960:xxi). In any case, the Ndé and other Apachean peoples of the region have no migration story from any place else. They were created where they are, and their beliefs should not be discounted.

### Band Organization of the Ndé

The Ndé were bound together by cohesion in language, religious beliefs and practices, and common interests. Ndé society was informal and loosely structured, with heavy emphasis placed upon the individual's right for self-government. Traditionally, there was no chief or formalized political leader of any kind. There was no council that made decisions for the group as a whole. Ndé society was flexible, and this was conducive to the seasonal sun-wise pattern of moving across the landscape. No rigid rules or regulations were forced upon the Ndé; no family group was under the influence or leadership of a centralized political entity.

Another powerful cohesive tie that united the Ndé was the shared belief that no one individual owned the land, and all natural resources were to be equitably shared by all. This egalitarian viewpoint is evident through food sharing and cooperation that aided the Ndé in their subsistence endeavors. Although unstructured, the Ndé recognized a division among the larger group. Differentiation was made between "The Edge of the Mountains People" and "The Plains People" (Castetter and Opler 1936:6). The Edge of the Mountains People were concentrated near the Sacramento

and Sierra Blanca mountain ranges, with the Plains People being concentrated more to the east. These groups of Mescalero Apache spoke the same language and considered themselves to be the same people; this split being more of a locality description than a cultural division.

Although traditionally the Ndé society was fluid, they did at times organize into groups that may have included up to thirty families (Opler 1969:11). This group may be best described as a “band” (Basehart 1967:282). These bands were composed of a group of families and the family leaders. The band was capable of working together when necessary, but individual family groups often worked independently. When a band was formed, it was a significant economic unit and it was essential in providing protection from enemies (Basehart 1967:283).

These bands often centered around one leader. This leadership was by no means a formalized role. Band leaders were men who demonstrated strong leadership qualities. The leader was a well respected member of a group whose role was to provide guidance and offer advice to the families and groups who often lived and worked in close proximity to one another. He served as spokesman for the group and also helped to ease tensions and helped to solve problems as needed. There were no rules that insisted that all must follow the leader. Individuals were free to change group affiliation at any time.

## Kinship

The woman and her children formed the basis for Ndé society. The Nde lived in a matrilineal society and practiced matrilocal residence. Upon marriage, the son would leave his family and reside with the family of his wife. Usually a wife's residence would be constructed in the vicinity of her parent's residence, and a typical encampment would include a dwelling for parents and separate dwellings for each of their daughter's families. This pattern of matrilocal residence operated smoothly in Ndé society. It was well suited to all aspects of Ndé life and formed bonds that would aid in the survival to the group. Girls worked closely with their mothers, aunts, and grandmothers, and boys were taught that they would someday leave this group and provide for their wife's family. This type of arrangement offered the woman great security. After marriage, she continued to live near her family who provided her with tremendous support and even protection. Upon the birth of a child, the maternal grandparents were an essential component in the caring and training of the child. Grandparents not only helped the woman care for her children, but passed down, through rich storytelling, many important religious concepts and traditional information.

When a man married he worked hard to be a good provider for his wife and her extended family; if he was successful, he was accepted into the group, and if he and his wife had daughters he would one day be the leader of his own extended family unit. This extended family grouping was able to meet the economic needs of the people most of the time. However, there were times when the cooperation of a

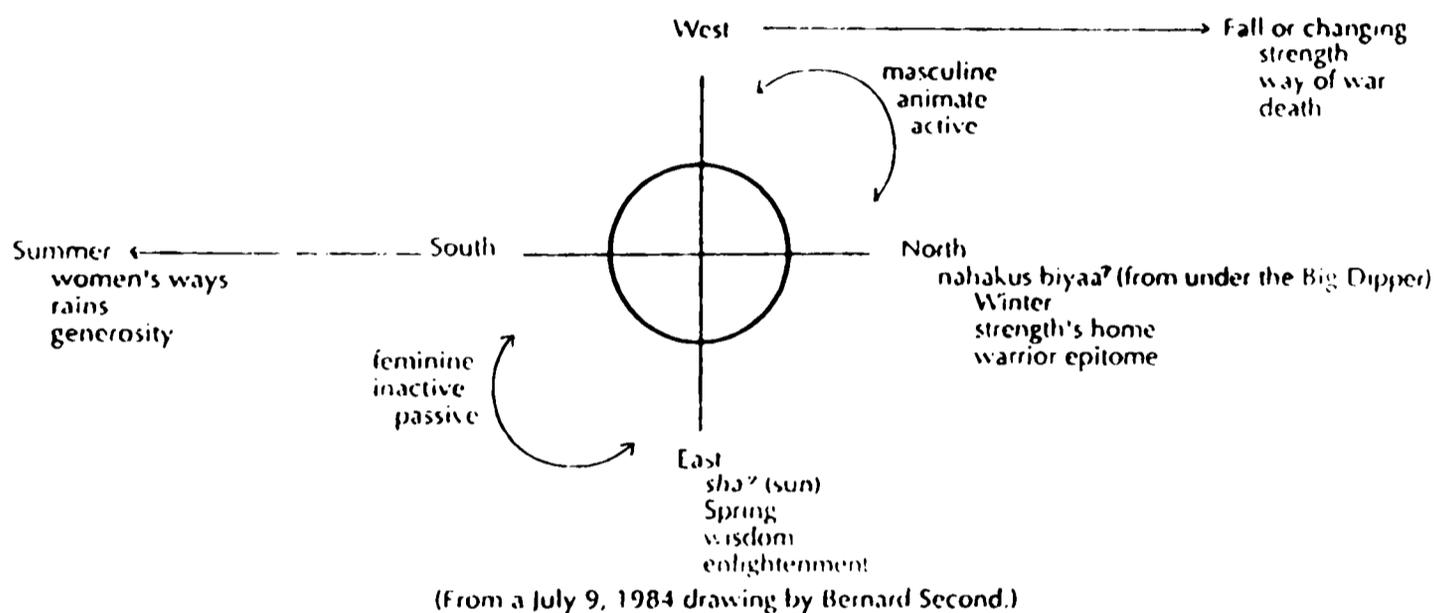
larger group was essential. Organized bison hunting is one example where it would be beneficial to work in larger groups. Also, groups larger in size made the possibility of an enemy attack less probable.

### Ndé Religion and Ceremony

To the Ndé religion and ceremony were not separate from their everyday life to the Ndé, the cosmos is a vast circle, and is symbolized in the base metaphor (Figure 4 4). They are concerned with balance and harmony in nature, and their actions reflect this. The Ndé approached most tasks such as hunting and the preparation of food, with important ceremony and ritual that would ensure the successful completion of such tasks as well as promote general all-around well being. Most activities were done in such a way so as to maintain balance and harmony. When balance was disrupted, the Ndé participated in curative rites and ceremonies that would restore order to the universe

The Ndé's traditional religious beliefs and practices paralleled the rest of the Apache peoples of the Southwest and are considered to be generally Apachean in nature. The Ndé, as do other Apachean peoples, recognize a supreme deity - the creator of the universe. This creator, called Ussen, made the world and then retreated, having little or no contact with the Ndé. Ussen was never personified, though the impersonal power of Ussen is generally characterized to be male. Ussen is recognized as the Giver-of-Life, who sees all, and is the source of all supernatural power. This concept of power was of major importance to the Ndé belief system.

## LIVING LIFE'S CIRCLE



*The symbolic association of the base metaphor, readily recognized by most Apaches, had to be explained to me.*

Figure 4.4 Representation of the Ndé's Base Metaphor and Cosmological View (from Farrer 1991).

The supernatural power created by Ussen permeated all aspects of Ndé life by regulating everyday occurrences and happenings. People sought the aid of the supernatural power throughout their lives through participation in religious ceremonies and traditional rites. Opler (1935:66) most clearly explains the Apache concept of supernatural power:

... [it is] a mighty force that pervades the universe. Some of it filters through to the hands of man. But to become manifest to man, power must approach him through the medium of certain agencies and channels, must "work through" something. The most conspicuous of these agencies are certain natural phenomenon such as the lightning or sun, and a number of animals, principally the bear, snake, owl and coyote...

Power could be either benevolent or malevolent. Most of the Apache ceremonies were performed to cure or restore order, and were conducted by people who had received supernatural power.

The Mountain Spirits or Mountain Gods were an integral component to the traditional belief system of the Ndé. These spirits inhabited and guarded the mountains of the Ndé's traditional territory, including the present-day Guadalupe Mountains. Their duties included protecting the Ndé against illness and danger, and they were the protectors of wildlife as well. The Mountain Gods were represented by the Mountain Spirit Dancers who under guidance of a spiritual leader participated in curing ceremonies and rites. These dancers impersonated the Mountain Gods in various ceremonies, and they wore elaborate costumes and adorned their bodies with highly significant symbols that represented the Ndé's cosmological view. Perhaps the most important ceremony that the Mountain Spirit Dancers participated in was the

Girl's Puberty Rite, the most significant ceremony of the Ndé.

The Ceremony of the Maidens, or girl's puberty rite, was (and is) the most important ceremony to the Ndé, which also says something about the high status a woman enjoyed in Ndé society. This ceremony marked a girl's transition into womanhood. During the four-day ceremonial, a girl is believed to be the incarnation of White Painted Woman (Farrer 1994:49). White Painted Woman, the creator goddess of the Ndé showed the people how to live: she is highly regarded by all Ndé, and women model their lives after hers.

### Conclusion

The Ndé were an integral part of the history of the Guadalupe Mountains. This place was (and to some, still is) a sacred place. It is the abode of the Creator Goddess, White Painted Woman. The Guadalupe Mountains was a place that generations of Ndé called home, and the abundant natural resources provided the Ndé with all they needed to live. The Ndé who lived in and among these mountains were experts in the ecology of the area. They had a respect for their landscape and treated the land as one would treat a family member.

## CHAPTER V

### HISTORICAL ADAPTATION OF MCKITTRICK CANYON

Historical times brought a variety of people to the Guadalupe Mountains and the surrounding Trans-Pecos region of Texas. The sometimes harsh environment and rugged landscape did not prevent people from coming to the Guadalupe Mountains. The presence of the Ndé in their traditional homeland soon attracted the attention of the Ninth and Tenth Regiments of the United States Cavalry, who had orders to “pacify” the west. This was to be accomplished by ridding the western United States of Indians, cattle thieves, and bandits in order to make room and ensure safety for the growing numbers of Anglo settlers that were moving west. Later, ranchers and more settlers moved into the Guadalupe Mountains, some choosing to make McKittrick Canyon their home. Wallace Pratt and Judge J.C. Hunter, two key figures in the later development of the region into a National Park, both purchased land in McKittrick Canyon.

#### The Buffalo Soldiers

Troops of the Ninth and Tenth Cavalry frequented the Guadalupe Mountains during the late 1800s. These regiments were composed of the renowned Buffalo Soldiers of the United States Cavalry. These African-American soldiers served the army faithfully, despite the harsh conditions under which they served. The soldiers of

the Ninth and Tenth Cavalry were routinely given inadequate supplies and old, worn-out horses. African-American soldiers were also the victims of racial prejudice and ill treatment, often by the very people they were protecting on the frontier. Despite all of this, the Buffalo Soldiers of the Ninth and Tenth Cavalry made a lasting impact on the frontier.

African-American men have a long record of service to the military of the United States, beginning with participation in the Revolutionary War. Black troops also fought for the Union during the Civil War, despite the heavy opposition of their fellow Anglo soldiers and officers. It was during this war that African-American soldiers proved themselves to the many detractors. During the Civil War 180,000 African-American men served the Union; of these one hundred and eighty thousand, thirty three thousand, three hundred and eighty lost their lives (Leckie 1967:5). The year 1865 saw the end of the Civil War and a shortage of soldiers and officers to meet the new needs of the United States Army. More and more settlers were moving into the western United States, and the army was responsible for establishing law and order along the frontier. During the early 1860s, the Army's efforts were focused on the war, leaving the indigenous populations of the west an opportunity to try and reclaim their traditional lands. As more and more violence between the settlers and Native Americans resulted in the kidnappings, property loss and deaths of white settlers, problems on the frontier were made a priority by the U S. Army. Soldiers were desperately needed in order for the United States government to protect its

Anglo settlers and make the west a safer place, free of Indian warfare and raiding. With the passing of the Indian Removal Act in 1830, the current Indian policy of this time became to rid the western frontier of its native population by rounding up Indians and forcefully moving them to reservations; if this failed they were killed. The U.S. Military was also needed to establish a tone of general lawfulness in the west. Anglo thieves and outlaws also threatened the safety of the settlers and pioneers who were moving west.

On July 28, 1866 Congress passed an act, which provided the impetus for African-Americans to serve in the post-Civil War era of the US Army. Congress authorized six new regiments that were specifically organized for African-American soldiers. These nascent units consisted of four regular infantry regiments and two regiments of cavalry.

Edward Hatch was the commanding officer of the Ninth Cavalry from 1866-1889. He was born in Maine on April 22, 1831. Hatch attended a military academy in Vermont, but later decided to become a commercial sailor. For a time, Hatch worked in the Pennsylvania lumber business. He later moved to Iowa, continuing to sell and transport lumber. The outbreak of the Civil War prompted Hatch to enlist as a captain in the newly formed Iowa Cavalry. He was promoted to colonel in June of 1862 (Kenner 1999:32). His tenure during the Civil War brought him numerous awards and commendations. Edward Hatch was recommended by General Grant to lead the Ninth Cavalry in August of 1866.

Hatch's colleague and fellow decorated Civil War veteran Benjamin Grierson was Grant's choice to command the Tenth Cavalry. Grierson was born in Pennsylvania on July 8th, 1826. His occupation as a music composer and teacher made Grierson an unlikely candidate for a Civil War hero and later commanding officer of the Tenth Cavalry. He gained status as a celebrated Civil War hero following his leadership throughout an illustrious raid in Mississippi during the spring months of 1863 against the Confederacy (Dinges 1987:157).

Edward Hatch established the headquarters of the Ninth Cavalry at Greenville, Louisiana while Benjamin Grierson located the Tenth Cavalry at Fort Leavenworth, Kansas. Both commanding officers had a good response from the African-American community. Many men enlisted, a large number of whom had prior military experience (Kenner 1999:11). Those without any previous military experience primarily came from the agricultural and service sectors of the economy. The significant response of enlisted soldiers can be attributed to the military providing an African-American male with an unprecedented social and economic opportunity that was not to be found in other occupations immediately following the Civil War. Although the average pay for a soldier enlisted in the Ninth or Tenth Cavalry was a mere thirteen dollars a month, this was attractive to the soldiers because they also received meals, housing and clothing as well as a higher social status than African-American men who did not serve in the military (Leckie 1967:10). Men enlisting in the two new divisions of the Cavalry came from various parts of the United States,

and a few were from other countries as well. While the majority came from the southern states such as Louisiana, Kentucky, and South Carolina, many came from Virginia. Places such as Pennsylvania, Texas and Arkansas also were the home places of a few recruits. Records show that a few soldiers from Canada and the West Indies enlisted in the Ninth Cavalry (Kenner 1999:13). Recruiting also took place in some of the larger northern cities such as Philadelphia, Boston, New York and Pittsburgh.

Both Grierson and Hatch had trouble finding officers who wanted to serve with the African-American soldiers. Unfortunately, the contemporary political climate made the opportunity to command African-American enlisted men undesirable to most officers of the U.S. Army. Many officers passed up the opportunities to lead the soldiers of the Ninth and Tenth Cavalry for more desirable positions commanding Anglo soldiers. Both Hatch's and Grierson's careers in the Cavalry were wrought with problems not faced by commanders serving in the other divisions. The men were routinely the object of racial prejudice and were always given inferior supplies, including food, clothing, weapons and even mounts.

As the western United States saw more and more settlers moving into its territory, clashes between the original inhabitants and newcomers were on the rise. For instance, parts of west Texas and the Trans-Pecos were particularly unstable. During the spring and summer months of 1867, both the Ninth and Tenth Cavalry moved into the western United States for what was to be the beginning of over twenty

years of operations throughout the rugged lands of the Great Plains, Texas, New Mexico and Arizona.

Edward Hatch moved the Ninth Cavalry to Ft. Davis and Ft. Stockton in the summer of 1887, with orders to protect the stage route that ran between San Antonio and El Paso. Hatch and his men were to “search out and defeat marauding Indians and maintain law and order on the troubled *Río Grandé*” (Kenner 1999:81). These so-called “marauding Indians” were the Apaches and others, that out of sheer necessity had incorporated raiding as a viable subsistence strategy in response to the gradual appropriation of their traditional homelands and natural resources by the new settlers.

#### Buffalo Soldiers in the Guadalupe Mountains

Upon arrival at Ft. Davis and Ft. Stockton, Hatch and his men had to completely rebuild the dilapidated compounds. It was a difficult time for the soldiers, as the work was difficult and the hours were long. Those who did not rebuild left from dusk to dawn, patrolling the region for Indians and carrying out the orders of the federal government. The Ninth Cavalry encountered several different groups of Indians throughout their campaigns in the state of Texas. One of the groups that they clashed with was the Ndé, or the Mescalero Apache. The Ndé intensified their pattern of raiding, and Buffalo Soldiers from both the Ninth and Tenth Cavalry made several forays into the Guadalupe Mountains of western Texas in search of Mescalero

Apaches. In the winter of 1870, a group of two hundred men commanded by Captain Francis Dodge left Ft. Davis for the Guadalupe Mountains in pursuit of any Ndé who might be in the area. Once in the Guadalupe Mountains, the soldiers came upon a Mescalero rancheria where they initiated combat with the group. The rancheria was said to be located “in the most inaccessible region of the Guadalupe Mountains” (Leckie 1967:90). The Apaches took refuge on one of the high peaks, and Dodge commanded his men to dismount from their horses and climb after the Ndé. The soldiers spent the night on the mountain, and the next morning reported that twenty-five Apaches had been killed by the soldiers. The soldiers also reported confiscating a large amount of animals and property. Prior to this incident, numerous patrols had departed from Ft. Davis for the Guadalupe Mountains. For instance, in June of 1869, a scouting party of twenty men of the Ninth Cavalry pursued a group of Mescalero Apaches into the Guadalupe Mountains.

The Tenth Cavalry also frequented the Guadalupe Mountains during the late 1880s in search of Mescalero Apaches. In 1875, Colonel Grierson moved the Tenth Cavalry of the United States Army to its Texas headquarters at Ft. Concho, located in what is now the city of San Angelo, Texas. From this position the Tenth focused its efforts on small groups of Comanche, Kickapoo, Lipan and bands of Mescalero Apache and Warm Springs Apache. In addition to eliminating raiding Indians, the Tenth Cavalry was responsible for dealing with Anglo and Mexican bandits and horse thieves, as well as the occasional Mexican revolutionary (Leckie 1967:141). The

campaign area of the Tenth Cavalry corresponded with the boundaries of Trans-Pecos Texas (Figure 5.1).

The primary duties of both the Ninth and Tenth Cavalry were to subdue and forcefully move Indians to prescribed lands and reservations. African-American soldiers were also responsible for protecting transportation and communication routes (stage lines and telegraph lines). Along the international border of the United States and Mexico, soldiers routinely came in contact with bandits and cattle thieves, thus adding the establishment of law and order to their duties.

For over twenty years, the Buffalo Soldiers of the Ninth and Tenth Cavalry carried out the official policies of the United States Government in the west. Numerous scouting parties over the years brought these soldiers into the vicinity of the Guadalupe Mountains of Texas. A number of encounters with Mescalero Apaches in and around the mountains have been documented in post returns and letters from the commanding officers of the mounted regiments. Archaeological evidence has also placed the Buffalo Soldiers in McKittrick Canyon during this time. Several specimens of Spencer Repeating Carbine cartridges have been collected from McKittrick Canyon. Now housed in the park's museum collections, these were the cartridges (model 1865) that were typically used by the Ninth and Tenth Cavalry during their Indian Campaigns of the late 1800s.

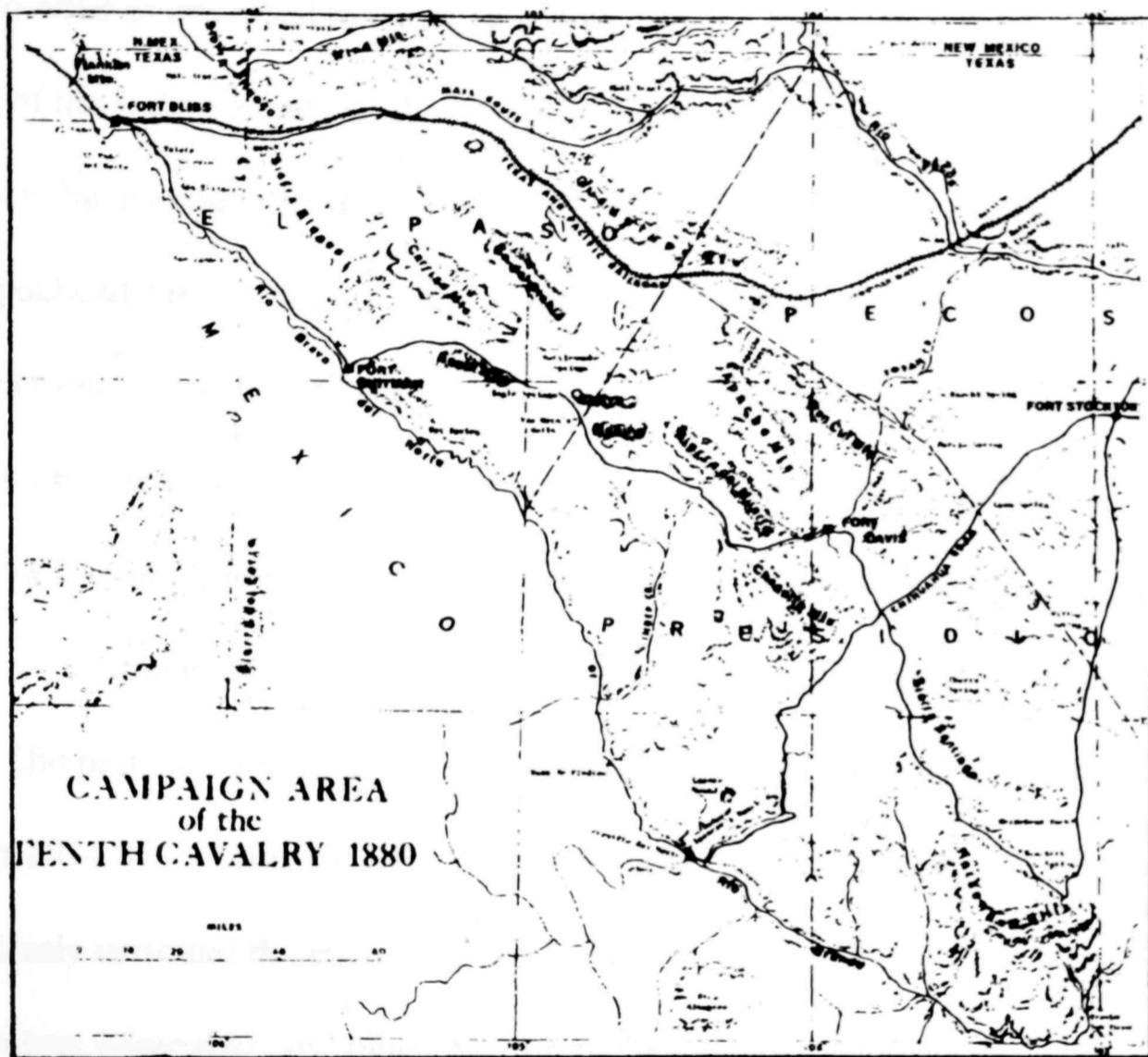


Figure 5.1 Campaign Region of the Tenth Cavalry (from Leckie 1967).

## Mescalero Apache Raiding and Warfare

The Mescalero Apache reservation was officially established on May 29, 1873. Living conditions were not favorable for the Mescalero, and many men frequently left the reservation to participate in raiding parties. Raiding was necessitated in order to compensate for the inadequate food and supplies that were not being provided as promised to reservation Mescaleros. Corruption and mistreatment by some of the Indian agents on the Mescalero reservation made it difficult for the residents to have enough food to eat. Raiding was for many years an important part of the Apachean subsistence strategy. Prior to American control of the Southwest, Apaches raided Spanish and later Mexican settlements. Raiding parties were organized only when food supplies were low or nonexistent (Basso 1971:16).

The formal raiding party usually consisted of five to fifteen men. The raids were either conducted on horse or by foot, and typically men volunteered their service. The parties were expected to be absent from camp for several months (Basehart 1974:97). Raids usually took place in the early morning hours. The men would silently surround the enemy's livestock before driving them off. Contrary to the stereotype, Mescalero and other Apache raiders tried hard to avoid armed conflict. The raiding party was always organized out of necessity to stave off hunger, which could reach the level of starvation in many instances.

Different than raiding, Apache warfare was also a concern of the U.S. Cavalry in the late Nineteenth Century. While the purpose of raiding was "to search out

enemy property,” the implicit purpose of warfare was “to take death from an enemy,” or avenge the death of a kinsman (Basso 1971 16). War parties consisting at times of up to two hundred men were organized when the death of a clansman was to be avenged. Under the leadership of a single man, the war parties would usually seek revenge on the village or settlement where the deceased had been slain. If the exact location of the murder could not be determined, the war party would attack settlements in the area.

As more and more Anglo settlers moved west, Apache raiding and warfare increased. The policy of the United States Government sought to eliminate the Indians of the Southwest by means of extermination. Bounty hunters were being paid up to one dollar for the scalp of a murdered Indian (Basso 1971.20). This and similar horrific policies led to a vicious cycle of revenge and retribution that took the lives of Apaches, soldiers and settlers alike.

#### Ranching and Settlements of McKittrick Canyon and the Surrounding Area

Following the tumultuous “pacification” of the west and the tragedy of the removal of Mescalero Apaches from their sacred homeland of the Guadalupe Mountains, more and more settlers and ranchers began moving into the region. The Guadalupe Mountains region of Texas has a ranching history stemming from the mid 1800s to the present. The completion of the Pinery Stage Station of the Butterfield Overland Mail Route in 1858, close to the mouth of Pine Springs Canyon,

helped to bring more people into the region. Old-timers of the Guadalupe Mountains said that in 1869 Captain Felix McKittrick, the believed namesake of McKittrick Canyon, came from northeast Texas to make his new home in present day McKittrick Canyon. In the 1870s, the Rader brothers were building the first structures of what was to become Frijole Ranch. It was during this time that the domination of cattle ranching in the region began (Southwest Region National Park Service 1974:39).

The turn of the century also saw a profound increase in settlement and the establishment of ranches in the area. The Texas Legislature passed the Eighth Section Act, thus opening up the region to further development. Families such as the Ables, Altmans, Glovers, McCombs, Williams and Usserys established homes and ranching endeavors in the area of the Guadalupe Mountains. During the early 1900s, cattle, longhorn, sheep and goat ranching endeavors were on the rise. Larger ranches and settlements were established in the 1920s and 1930s. Culberson County was attractive to ranchers because of its “good grass and rangeland” (Ussery 1982: Oral History Interview). A prominent judge, J C Hunter came from Van Horn, Texas and quickly acquired large parcels of land to be used in his ranching enterprises throughout the Guadalupe Mountains area. Wallace Pratt, a world renowned petroleum geologist established his home in McKittrick Canyon. Later, both men would play an important role in the development of Guadalupe Mountains National Park.

## Wallace Pratt Buys Land in the Guadalupe Mountains

Wallace Pratt made his first visit to McKittrick Canyon in 1920 with Judge Drane, a banker from Pecos, Texas. Judge Drane wanted to show Mr. Pratt “the most beautiful spot in Texas” (Pratt 1973: Oral History Interview). Judge Drane and Mr. Pratt drove the ninety miles from Pecos to McKittrick Canyon without the luxury of paved roads. At first look, Wallace Pratt fell in love with what was later to become his home and passion. Mr. Pratt acquired the land by purchasing it in small installments over several years. He, along with two brokers, purchased the old Green McCombs ranch from a bank that had acquired the land upon McCombs establishing a “saddle mortgage” (i.e., everything but your saddle). The ranch consisted of eleven sections each containing seven hundred acres. The bank was asking \$5900 for the 7,700 acre ranch. Pratt, who did not have enough money to purchase the entire ranch, bought a 1/8th interest, the remaining land being purchased by two broker friends of his. One friend, R.G. Cann of San Angelo, Texas sold his share to Pratt some five years later. In 1929, the Great Depression brought financial difficulties to Mr. Pratt’s remaining ownership partner, forcing the man to sell his share of the ranch to Pratt. Upon securing a loan from a banker friend from Houston, Wallace Pratt was able to buy the broker’s interest at three dollars an acre. Though it took Mr. Pratt “a long time” to pay back his friend in Houston, he eventually did (Pratt 1973: Oral History Interview). Mr. Pratt increased his ownership of property in the Guadalupe Mountains in 1934, when he was able to purchase seven additional blocks of land.

Three years later, while in New York City, Mr. Pratt received notification from a bank in Kansas City, Missouri asking him to purchase a neighboring ranch. Pratt agreed, thus increasing his total acreage to 16,000 acres. Mr. Pratt did use the ranch for several years. He had a herd of one hundred cows spread over ten pastures and was careful not to allow the cattle to graze in McKittrick Canyon (Pratt 1973: Oral History Interview).

### The Stone Cabin

Today, any visitor hiking McKittrick Canyon will surely notice the stone lodge that Mr. Pratt had built in 1930. The lodge, known as the “Stone Cabin” to Pratt and his family, was constructed on his land, “Manzanital Ranch” in McKittrick Canyon. Mr. Pratt located the cabin on the “upper terrace of the flood plain of North McKittrick Canyon at its junction with South McKittrick (1971 letter to Dayton). The stone lodge is unique in that it is constructed almost entirely of stone, the only other material used in its construction was the heart-of-pine rafters which support the roof. The lumber was brought in from the piney woods of deep East Texas. The stone was acquired locally from pastures located three miles from the building site and hauled into the canyon via a pick-up truck (Pratt 1973: Oral history interview). The rocks were silty limestone with thin beds and closely jointed vertical fractures. The majority of the stones required no working by a mason and were simply used “as is.” The roof, walls and floors of the cabin are all made of stone and were erected by a

stone mason and a civil engineering friend of Mr. Pratt's. The architect who designed and directed the construction of the stone structures was John Staub of Houston, Texas. These men were assisted by several local ranch-hands and cowboys. The stone walls that border the cabin were built by the cowboys with the assistance of saddle horses that were used to haul the individual stones up a ramp to be set in place (Pratt 1973: Oral History Interview). A two-car garage was also constructed out of the same materials and in the same manner. Pratt also directed the construction of a stone picnic table that was placed just outside the kitchen. Visitors who hike the trail to the Stone Cabin will pass by several stone benches that were added by Pratt.

Mr. Pratt and his wife Suzanne used the Stone Cabin as a vacation residence for several years. The following excerpt from a letter to Dayton from Pratt (1971), describes the floor plan of cabin and its furnishings:

It consists of a commodious, rectangular living-room flanked with a full-length, south-facing porch. A kitchen juts out from the rear side, making the plan-view of the cabin into a short-stemmed "T", and a bed-room with tub bath opens off each end of the living-room. Each room is roofed by its own gabled roof... with ordinary house hold necessities-kitchen utensils, four beds... large rustic, reclining chairs... large hammock... a large refectory table with 12 heavy matching chairs.

The precarious location of the cabin on a flood plain made things difficult for the Pratts during periods of heavy rain. On numerous occasions, the canyon would flood and both entry to and exit from Manzinital Ranch would be impossible. They later decided to relocate to another part of their land. In 1941, they started construction of their new home, the "Ship on the Desert."

Before, during and after the time spent in the Stone Cabin, Wallace Pratt would bring groups of friends and colleagues to his spot in the desert to discuss his true passion-geology. Pratt is known for saying how lucky he was to make his avocation his vocation. Before settling in the Guadalupe Mountains, Pratt traveled the world as a petroleum geologist for Humble Oil Company.

#### Judge J C Hunter in McKittrick Canyon

Jesse Coleman Hunter first came to Van Horn, Texas in 1911 (Wylie 1973:128). Here he served the community as county judge, county treasurer and superintendent of schools. J. C. Hunter later became the director of the Van Horn State Bank and served as the bank's vice president. Mr. Hunter was deeply involved in the Texas oil and gas industry; he was president of the Mid-Continent Oil and Gas Commission. Judge Hunter, as described by Wallace Pratt in an oral history interview, "was in the oil producing game with the Grisham boys of Abilene" Visitors to McKittrick Canyon that hike the trail past the Grotto can see the remains of the Hunter-Grisham cabin. Judge Hunter and his son J.C. Hunter, Jr. owned a sizeable ranch in the Guadalupe Mountains which included portions of McKittrick Canyon. J.C. Hunter, Jr would eventually sell the land in the Guadalupe Mountains to the National Park Service.

Judge Hunter made several changes to the landscape of McKittrick Canyon. He reintroduced a herd of elk to the region, which just so happened to anger one of his neighboring landowners, Wallace Pratt. Pratt was unhappy with Hunter's action because he did not believe that there was enough forage for the elks to graze upon (Pratt 1973:Oral History Interview). The Hunter family was also responsible for introducing rainbow trout into McKittrick Canyon Creek.

### Conclusion

With the doctrine of Manifest Destiny came a steady influx of newcomers to the Guadalupe Mountains of Texas. Pioneers and settlers slowly began to encroach upon the sacred traditional homelands of the Ndé and other indigenous people all over the western United States. The coming of the Anglos changed the lives of the Mescalero Apache. Governmental Policies were enforced by the U.S. Army. The Buffalo Soldiers of the Ninth and Tenth Cavalry also made an impact on the landscape. Later times brought the ranching industry to the region. Cattle, goat and sheep were to play an important role in the economy of the region. McKittrick Canyon's expansive history continued to change and adapt in the Nineteenth and early Twentieth century, setting the stage for the development of a National Park.

## CHAPTER VI

### NATIONAL PARK SERVICE ADAPTATION

Guadalupe Mountains National Park began with an act of Congress in 1966. Six years later the park was officially established for its bounty of scenic and scientific merit. Prior to Congress becoming involved, private citizens known as “boosters” worked hard to for the establishment of the park. Landowners, Texas State legislators and concerned citizens of both Texas and New Mexico were instrumental in the concept and eventual establishment of Guadalupe Mountains National Park. The new national park was first managed as an extension of Carlsbad Caverns National Park. In 1986, the decision was made to implement independent management of the park, though joint administration had helped the nascent Guadalupe Mountains National Park develop a firm foundation in the National Park System. Since 1972 the National Park Service has worked to preserve and protect the 76,293 acres of Guadalupe Mountains National Park and make its unique collection of plants, animals and rich cultural history available to the public.

#### History of the National Park Service

Established in 1916, the Park Service itself was preceded by the creation of the first National Park. Yellowstone was set aside in 1872, when on March 1, President Ulysses S. Grant signed an act that incorporated an impressive two million

acres into what was to be known as Yellowstone National Park. The area had long been known to various people for its marvelous natural phenomena. Early fur trappers and prospectors told stories of the earth smoking and spouting water. In 1870 an official survey was conducted to take stock of the area. The official designation as a national park was a significant event: for the very first time in the United States, land was explicitly set aside “as a public park or pleasuring ground for the benefit and enjoyment of the people” (Everhart 1972:7).

New parks soon followed Yellowstone. The turn of the century saw the development of several more national parks. Yosemite, Mt. Rainer, Sequoia and General Grant were up and running. Mesa Verde National Park was established in 1906, but there was still a lack of centralized management for the growing number of new parks. The early 1900s also began to see a shift in public awareness about the environment. Some people were beginning to realize that the country’s natural resources were not infinite. President Theodore Roosevelt also saw the need for conservation, and in 1908 he organized a conference that addressed such matters (Everhart 1972:13). Attending the meetings were park promoters who were working hard to convince Congress that the newly formed national parks needed an organization that would offer proficient administration to the emerging system of parks.

Roosevelt was not the only president to take an interest in the National Parks. In 1912, President Taft made a recommendation to Congress for the establishment of

a Bureau of National Parks. Concerned that the lack of efficient management and orderliness would harm the parks, Taft pushed for the development of an organization that would be responsible for all of the National Parks. Though an important step in its development, the Park Service would not be established for several more years. An important figure in the establishment of the National Park Service was Stephen T. Mather. Mather was an assistant to the Secretary of the Interior and as well as an active member of the Sierra Club. He wanted very much for there to be a National Park Bureau and worked tirelessly to get a bill passed that would ensure its organization. Mather spent his time working to raise public awareness of the parks as well as working to increase funding for the parks. His efforts paid off, and in 1916 the Organic Act was signed, officially establishing the National Park Service as a service of the Department of the Interior.

The purpose of the National Park Service as stated in the Organic Act of 1916 was:

... to promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. (Dilsaver 1994:46)

### Organization of the Park Service

Today, the National Park Service manages over three hundred and sixty-five sites that make up the national park system (Figure 6.1). The National Park Service

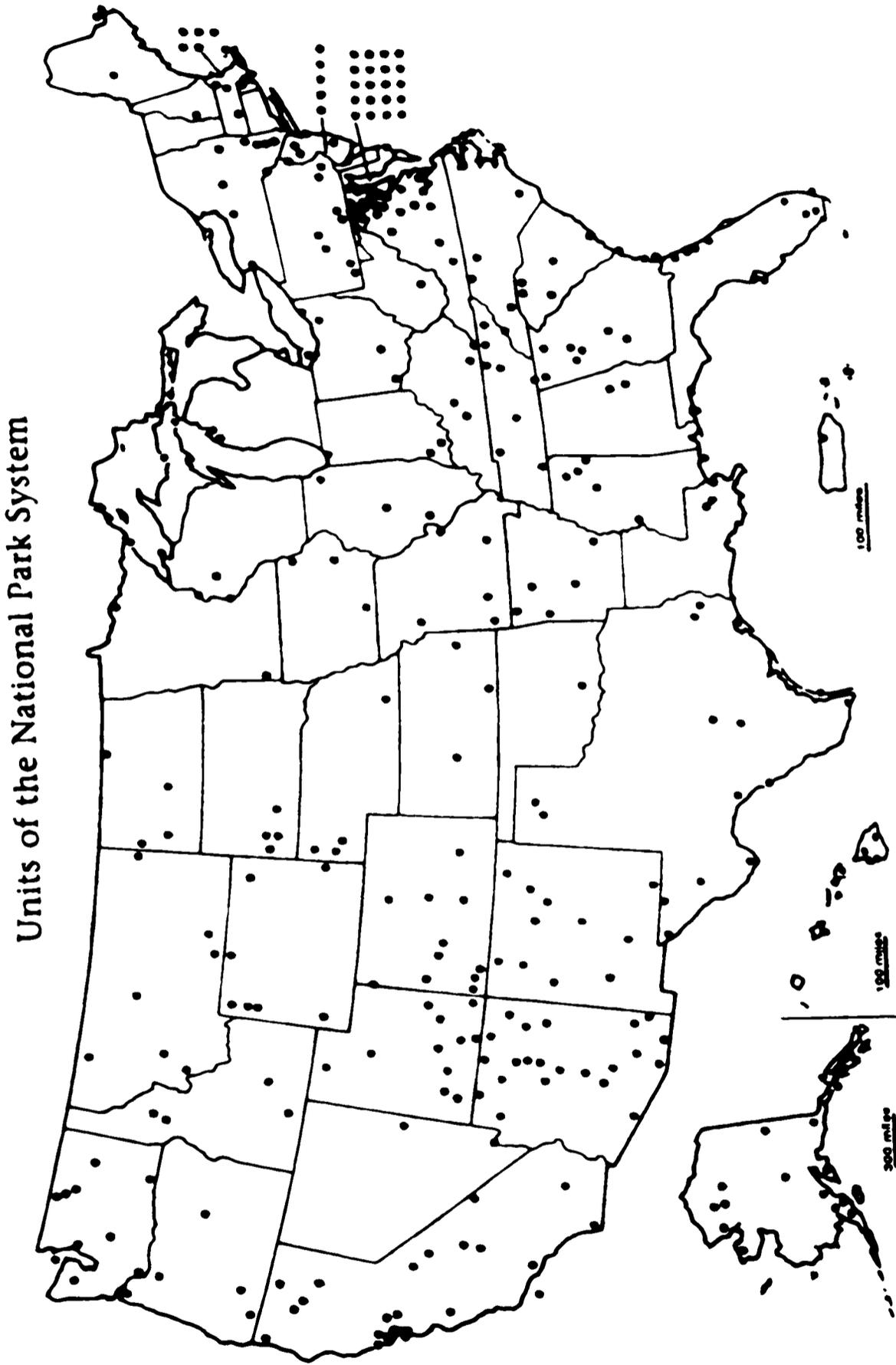


Figure 6.1 Units of the National Park Service (from Rettie 1995)

is a division of the Department of the Interior and was organized into five divisions: administrative component, field service component, editorial component, law component, and the publications component (Cameron 1922:60). The administrative division is headed by the Director of the National Park Service, who supervises and manages the control of the individual parks, monuments, wildlife and recreational areas that are part of the park system. The field service component refers to all of the National Park Service employees that do not work in Washington D C., but in “the field.” This includes all of the park’s superintendents, park rangers, and all other employees of the National Park Service. The editorial and publication division’s duties concern the drafting and publications of the National Park Service, as well as the distribution of all published materials. The law component handles all legal questions and activities, preparing documents, leases and contracts for the National Park Service.

The Park Service is further divided into six regional offices that are each responsible for providing support for up to fifty parks. Headquarters for the regional offices are located in all parts of the country, forming accessible communication links between the individual parks and Washington, D.C. The Southwest Regional Office, which supports Guadalupe Mountains National Park, is located in Santa Fe, New Mexico. Regional offices not only serve as liaisons between the individual parks and the Director of the National Park Service, but also make available to the

parks support staff and resources that can help the park with all matters, including interpretation projects.

The organization of the individual park staffs make up the fundamental unit of Park Service organization (Everhart 1972:41). Each park must have on its staff a park superintendent whose duties include management and supervision of all aspects of the park, a park ranger who is in charge of the protection and interpretation of the park land (there can be more than one ranger, with more than one specialty), a park guide to facilitate the interpretation of the area, an administrative assistant that handles the general day-to-day administration of the park, and a maintenance specialist who is in charge of the upkeep of all facilities and trails. This makes up the essential staff at a national park, but for parks who support a large number of visitors this staff is increased, especially during the peak travel and tourism seasons.

### Guadalupe Mountains Becomes a National Park

On October 15, 1966, President Johnson authorized the establishment of a new National Park. Guadalupe Mountains National Park was unique in that it was the very first national park to be acquired in part by the purchase of private lands with federal funds (Monroe 1991:8). Years before the park was signed into being, many people worked hard to convince the government to include Texas's Guadalupe Mountains in the National Park System. Since the inception of the National Park Service, parks were well accepted by the American public. Many local communities surrounding national and state parks enjoyed the economic boost that came with the

tourist dollars that parks attracted. Local individuals and organizations worked throughout the country to promote their particular town or region for economic development. This concept known, as “boosterism,” also helped to eventually bring about the development of Guadalupe Mountains National Park.

Carlsbad Cave received designation as a National Monument in 1923. The town of Carlsbad, New Mexico, was soon abuzz with the new tourist industry that the caves were fueling. Carlsbad area boosters began mentioning the surrounding Guadalupe Mountains as a place of remarkable scenery and cultural significance (Fabry 1988:15). It was at this point that the automobile began to come into its own. More and more people were suddenly given access to remote or distant locales through the automobile. Families and individuals were making more trips via their automobile and were seeing and exploring places they once would have never had the opportunity to. Boosters of the region had realized the potential for the establishment of a park in the southern Guadalupe Mountains, but they realized that the lack of a sufficient thoroughfare would be a sizable stumbling block to recognizing their dream. Local boosters worked closely with organizations, such as chambers of commerce, who in turn worked in lobbying state and federal agencies for highway dollars. The close tie between roads, parks and funding in Trans-Pecos Texas cannot be underestimated (Fabry 1988:16).

A direct link between El Paso and Carlsbad was essential if a park were ever to become a reality for the Guadalupe Mountains of western Texas. Judge Hunter,

who owned land in McKittrick Canyon, was one such booster and was extremely interested in seeing a road and a subsequent park. From the very first time he visited the canyon in 1924, J.C. Hunter and others had wanted the area to be made into a state park. Later the next year, Hunter and an entourage that included highway commissioners of Texas and New Mexico, as well as the governor of the state of Texas, Pat Neff, toured Carlsbad Caverns and McKittrick Canyon. All members of the party had hopes of developing the area into a state park. This is what prompted Hunter to make his initial purchase of canyon land; he was going to donate it to the state for the purpose of creating a new park. The wheels were set into motion, or so it seemed. The highway men had promised a road; plans were being made to secure more land in the McKittrick Canyon for potential parkland.

Unfortunately, these early efforts to set aside land in the southern Guadalupe Mountains for a park did not pan out as they were intended. No more land was to be purchased for park use at this time, and Hunter ended up selling his land in McKittrick Canyon to the Grisham-Hunter Corporation, an oil and gas exploration group that he had formed with M. McAlpine and Matt and Thomas Grisham. For the time being, park plans were put on the back burner and Judge Hunter and his newly formed corporation continued acquiring land in the southern Guadalupe. Despite the failed park plans, Hunter continued to be a devoted supporter of area tourism and development.

A few years later, enthusiasm for McKittrick Canyon and the surrounding Guadalupe Mountains to be made into a park resurfaced. It began with a visit from the Director of the National Park Service, Stephen T. Mather. In 1928, Mather came to New Mexico with the prospects of establishing a new national park near Los Alamos and the famous caves in Carlsbad. Local boosters along with the Carlsbad Chamber of Commerce took the idea of a new national park in their own backyard to heart. They worked on gaining support for such a park and began promoting the idea of including the neighboring Guadalupe Mountains in the national park plan.

As mentioned earlier, J. C. Hunter continued to promote the area and work towards the reality of a new highway system that would make the Guadalupe Mountains and McKittrick Canyon more accessible to the tourist. In 1928, his corporation hosted an overnight outing to the canyon to raise awareness for the need of a new road to link El Paso with Carlsbad. The overnight "picnic," as it was called, in McKittrick Canyon was attended by over five hundred people including highway commissioners from New Mexico and Texas, Chamber of Commerce members and even the respective governors of Texas and New Mexico. Speakers addressed the attendees and spoke about the potentiality of making the canyon and the Guadalupe Mountains a park. Plans for building a road leading to the proposed park were also discussed. Once again the plans for McKittrick Canyon as a park were not successful. Despite the letdown, two new roads were finally completed by 1931; the dream of connecting El Paso, Texas with Carlsbad, New Mexico had finally come to fruition.

The completion of the new roads would prove to be very helpful in future attempts to make the McKittrick Canyon and the Guadalupe Mountains part of a park.

Again, the park plan continued, this time with the backing of the El Paso Chamber of Commerce. During the early thirties, the Guadalupe Mountains Park Association, part of the El Paso Chamber of Commerce, worked at getting a park established in the southern Guadalupe Mountains of western Texas. The association worked with the Texas highway department and the state legislature and eventually drummed up enough support to prompt the Texas state legislature to consider a bill that would provide the necessary funds to acquire park land in the Guadalupe Mountains. Following a familiar pattern, the proposed park bill failed to gain momentum, and the effort to make the area a state park again failed.

When Carlsbad Cave National Monument became Carlsbad Caverns National Park in 1930, plans were being made to extend the boundaries of the park. Several researchers surveyed the surrounding lands, including the southern Guadalupe Mountains of Texas, and recommended that these lands be incorporated into the boundaries of Carlsbad Caverns National Park. In 1931, researchers from the University of California were particularly interested in the rich wildlife found in the area of the Guadalupe Mountains. Specifically, the researchers found that the region contained native species that were not to be found in any of the existing national parks (Fabry 1988:20). Mearns quail, Merriam turkey, collard peccary and the Texas bighorn sheep made the preservation of the southern Guadalupe Mountains as a state

or national park very important to biologists working for the National Park System. As before, this was not the time to make the southern Guadalupe Mountains a protected park. Despite the recommendations and interest in the wildlife, the area was not incorporated into the National Park System via Carlsbad Caverns National Park.

During the early 1930s, there were more proposals made to set aside land in the Guadalupe Mountains. Suggestions to make the Guadalupe Mountains of Texas a national park, and a separate proposal advocating a McKittrick Canyon National Monument, were combined, but nothing substantial came of this round of proposals. A few years later, the Director of the National Park Service, Roger W. Toll, came to Texas to survey the recently proposed park lands. In 1934, Toll met with J.C. Hunter to discuss the possibility of establishing a national park in the Guadalupe Mountains. Hunter, on behalf of the Grisham-Hunter Corporation, offered to sell the land they owned in the Guadalupe Mountains to the National Park Service. Ultimately, the National Park Service lost interest in the idea due to the fact that all of the land in the proposed area was privately owned, and it was not common practice at the time for the National Park Service to purchase private lands for park development. As a result this Guadalupe Mountains park proposal also failed.

It was not until 1938 that more efforts were made to set aside land in the Guadalupe Mountains. By this time, J.C. Hunter was once again the sole owner of the land that he had earlier sold to his corporation. He was very interested in

protecting the land and was an avid participant in the conservation of his property in the Guadalupe Mountains. He made the land off-limits to grazing and only allowed limited deer hunting every autumn. Hunter wanted very much for the land to be a protected park, be it state or national, and he was planning to donate one thousand acres to the State of Texas for such a purpose. Once again, Hunter invited more visitors, including officials from the National Park System and the State of Texas and journalists from El Paso, and they made their way to McKittrick Canyon and the surrounding Guadalupe Mountains. All participants were very interested in seeing this part of Texas become a park that could be protected and enjoyed by all. Yet again, this was not the time; the proposal to purchase private lands for park use was not to be considered for years to come.

From the 1920s through the 1940s, numerous individuals and groups tried to make the idea of a park in the southern Guadalupe Mountains a reality. Logistics and lack of funding made the park proposals fall short of their intended goal. Though many people recognized the potential for the area, the push to establish a park never seemed to get more than a few feet off the ground, but the park idea would be revived in the years to come.

### Wallace Pratt Revives the Possibility of a Park

In 1958 Wallace Pratt contacted officials at Carlsbad Caverns National Park with a proposal to donate his land in McKittrick Canyon to the National Park Service.

Pratt was offering the Park Service 7,000 acres that were valued at over two-hundred thousand dollars (Fabry 1988:32). After several months time and several inspections the National Park Service accepted 5,632 acres of the Pratt Family's donation. This gift was accessioned by the Park Service in three separate components. In 1959, the first donation of 4,942 acres was deeded to the Park Service. The second donation of 690 acres was finalized in 1960, while the third and final parcel of 690 acres was accepted by the Park Service in early January of 1961. The Pratt Family's land donation refueled the idea of establishing a park in McKittrick Canyon.

Pratt also worked hard to bring attention to the McKittrick Canyon/Guadalupe Mountains park idea. He wrote letters to local and state newspapers which made his idea known to the public. Pratt favored the expansion of the proposed park area; he wanted the adjacent land that was now owned by J.C. Hunter, Jr. to also be protected park land. In one letter Pratt wrote to the Dallas Morning News, he stressed the need for some wealthy person to buy the land and donate it to the Park Service. Pratt also met with Hunter and discussed the park idea. Hunter was receptive; he and his father had always carefully protected and managed the land, and the park idea was one that he was in favor of.

In 1961, representatives from the National Park Service, along with Wallace Pratt and J.C. Hunter, Jr. surveyed Hunter's ranch. A report was filed with the Park Service that stating that the biological, geological and cultural significance of Hunter's property made this land very attractive (Fabry 1988:36). The Park Service

was definitely interested in the Guadalupe Mountains Ranch and believed it would enhance Pratt's donation, ultimately making a highly desirable new park for the National Park System. Hunter was ready to sell all of his land to the Park Service, but the question was whether the Park Service was ready to buy it. At that point in time, there had never been a national park established by utilizing federal funds to purchase private lands.

#### J.C. Hunter, Jr. and Glenn Biggs

J.C. Hunter, Jr. was ready to sell his ranch in the Guadalupe Mountains. He earnestly wanted the Park Service to have it, but he was not in a position to make a donation. For financial reasons, he was prepared to entertain any serious offer, National Park Service or not. In 1961, Hunter procured the services of Glenn Biggs to help him to find a buyer for the ranch. Biggs was a partner in a brokerage firm in Abilene, Texas and was soon to become extremely interested, as was Hunter, in seeing the ranch become part of a park. As Biggs saw it, Hunter had three options: Hunter could sell the entire property as a working ranch or prospective resort. He could trade the 72,000 acres for mineral investments of equivalent value, or he could sell the ranch as prospective park land that would be donated to the National Park Service at a later date (Monroe 1991:16).

Biggs focused on all of Hunter's options, working hard to find a buyer. In the early stages, Biggs sought to sell the ranch to a private or commercial buyer. He

played up the land's resort and ranching potential, but there were no serious ranching buyers. Biggs soon abandoned this strategy and pushed for selling the ranch to the National Park Service. He was convinced that this was a special place that needed to be preserved. Biggs began working with the Department of the Interior and also focused on the solicitation of private and commercial benefactors that might be interested in purchasing the land and donating it to the Park Service. Hunter and Biggs listed the property at one-and-half million dollars, and Biggs' fee, contingent upon the sale, was to be seventy-five thousand dollars. This price was set based upon the land's scenic bounty as well as the consideration of oil and gas possibilities.

The National Park Service was interested in the land, and in the fall of 1963, during McKittrick Canyon's well-known "Fall Colors Season," sent an advisory board to survey the Guadalupe Mountains Ranch and McKittrick Canyon (Monroe 1991:58). This "tour" hosted by Hunter, Pratt and Biggs was a monthly event designed to draw attention to the park idea. The overnight trips were attended by local and state officials, members of chambers of commerce, and journalists from Texas and New Mexico. This intensified effort by Biggs paid off, as in November of 1963, Senator Yarborough introduced a bill to create Guadalupe Mountains National Park (Fabry 1988:45). Soon thereafter, in December, another bill was introduced by Congressman Pool (H.R. 9312) that outlined the boundaries of the proposed Guadalupe Mountains National Park.

In early 1965 during the session of the 89<sup>th</sup> Congress, another bill was proposed by Congressman White of El Paso (H.R. 698), while for unknown reasons Pool's bill was dropped (Fabry 1988:47). Congressional hearings concerning the establishment of a Guadalupe Mountains National Park began in July of 1965. The primary topic was a discussion as to the value of the mineral rights of the proposed park acquisition. Wallace Pratt spoke before the House Subcommittee and testified that the probability of finding oil beneath the land was low. A representative from Texaco Inc. who owned a sizable portion of the mineral rights in the proposed park land, gave testimony that vehemently opposed the relinquishing of mineral rights to the Federal Government. The hearings ended with no definitive solution concerning mineral rights in the Guadalupe Mountains..

The hearings reconvened the following year in March, in the House of Representatives. The hearings went on until May and culminated with the passing of House Resolution 698. In August of 1966, the Senate Subcommittee hearings were reopened and in October, H.R. 698 was approved by the Senate. The passing of this resolution was slow and complex, as many questions concerning the mineral rights were answered. Ultimately, the resolution was passed and the mineral rights problems were ironed out; all mineral rights would be donated to the National Park and would be returned to the donors in the event of the park lands ever falling from ownership of the National Park Service. On October 15, 1966, President Johnson signed the bill that authorized the creation of Guadalupe Mountains National Park.

In 1968, legislation took place within the State of Texas that ensured that all mineral rights in the Guadalupe Mountains park area that were still owned by the state would be transferred to the National Park Service. In the Federal Government, the Department of the Interior had made its formal request for the funds to purchase the land from Hunter. The contemporary national economic situation impeded the approval of the requested park acquisition funds, but funds were eventually made available and the park land was acquired. This feat was monumental in that it was the first time that federal funds had been used to purchase private land for the establishment of a national park (Tilden 1968:208). On September 30, 1972, Guadalupe Mountains National Park was finally a reality.

#### The National Park Service and McKittrick Canyon

McKittrick Canyon is an extremely popular destination for visitors to Guadalupe Mountains National Park. In fact, it is the most frequented portion of the entire park (National Park Service 1994:21). Most people who hike the canyon explore South McKittrick, making this part of the canyon typically a day-use area. Since the inception of the park, employees of the National Park Service have recognized the special status of McKittrick Canyon and the logical result of that status. Its popularity among visitors makes the canyon particularly susceptible to the inevitable “wear and tear” that comes with high visitor numbers. Before major additions were constructed, McKittrick Canyon experienced less stress caused by

humans. For instance, before the right-of-way for a permanent access road was obtained by the National Park Service, the only way visitors could reach McKittrick Canyon was via a private ranch road. Hikers were ferried from park headquarters to the mouth of McKittrick Canyon early in the morning and picked up late in the afternoon (Lubbock Avalanche Journal 1977). Due to the canyon's relative inaccessibility, visitor usage was much lower than it is today. Regardless of visitor numbers, the National Park Service has always made the protection of McKittrick Canyon a priority, but increase in visitors to the area made the need for this protection even more evident. When Guadalupe Mountains National Park developed its Proposed Master Plan in the early 1970s, it was noted that "significant public use and the accompanying development would seriously endanger the continuance of the aquatic system [of McKittrick Canyon] (Southwest Region National Park Service 1974:36). All of the facility development that has subsequently occurred in McKittrick Canyon has been guided by this recommendation. The master plan outlines specific guidelines that have allowed for facility development and increased visitation with limited negative effects on the environment.

#### Facility Development in McKittrick Canyon

The first major development of McKittrick Canyon began in 1977, when a construction company from El Paso began work on the new, permanent access road to the mouth of the canyon (Fabry 1988:129). The new paved access road was

completed by another company in 1978 and linked McKittrick Canyon with U. S. Highway 180-62. As expected, this new route to the canyon made McKittrick more accessible to the public and visitation increased as a result.

After completion of the access road, a temporary contact center was established in a mobile camping trailer. Increased visitor numbers facilitated the need for the construction of a permanent visitor contact center at the mouth of the canyon, and in 1979 plans were made to construct such a station. Construction began the following year, but it was not completed until late 1982 due to many problems and subsequent delays. The McKittrick Canyon contact station is composed of a ranger station/office, a sheltered deck area which contains exhibits relating to the canyon (including an audio-visual exhibit narrated by none other than Wallace Pratt), and restroom and water facilities. Other visitor amenities include a paved parking area and several picnic tables. Visitors may now begin hikes at the ranger station, which provides them access to trail information and park brochures relating to the canyon.

Guadalupe Mountains National Park contains over eighty miles of trails. The trail system in the park is unique in that, at the time, it was one of only a few national park trail systems that was professionally developed and constructed. Keeping with the park's intended goals, trails were designed and built that they would not severely alter or harm the natural environment. McKittrick Canyon contains several trails, varying in degree of difficulty and terrain. Trails in McKittrick Canyon were constructed by two trail-building companies and all completed (at various stages) in

1980 (Fabry 1988:142). Beginning at the mouth of the canyon, near the visitor contact station, hikers have several options in exploring the canyon. The McKittrick Nature Trail is a 1.03 mile loop that highlights the unique vegetation of the canyon. This trail contains interpretive signs that identify various flora and their native uses. The Permian Reef Geology Trail is 4.17 miles long (to the Wilderness Ridge Campground), and highlights McKittrick Canyon's dramatic geology by winding its way through Permian Reef rock formations. Interpretive signs that correlate with a geological guidebook are interspersed along the trail, enabling park visitors to conduct an informative, self-guided tour. The McKittrick Canyon Trail is the path to several popular destinations in the canyon. Visitors hike 1.10 miles before they first cross the fragile McKittrick Canyon Creek and cross the stream again at mile marker 1.5. The staff at Guadalupe Mountains National Park has taken special measures to protect the delicate ecosystem of the stream: signs are posted prohibiting wading and bathing in the stream, and during peak visitor seasons park employees are stationed at the stream crossings. Elevated stepping stones provide hikers the means of crossing without disturbing the stream. Wallace Pratt's stone cabin is 2.43 miles from the contact station. The stone lodge is open to visitors as an interpretive center and is usually staffed by a park ranger or seasonal volunteer. Restrooms and picnic tables are available to hikers at this point along the trail. The McKittrick Canyon Trail continues for another 2.14 miles from the Pratt Cabin to the Grotto picnic area, and just southeast of the Grotto the trail continues to the Hunter Line Shack. The

McKittrick Ridge campground is approximately 4 miles from the Hunter Shack and requires a permit for overnight camping. The trail continues westward, following South McKittrick Canyon for several more miles, where it eventually terminates with the intersection of the Tejas Trail.

### Protection of McKittrick Canyon

The park staff at Guadalupe Mountains National Park has planned and implemented policies and actions focused on the protection and preservation of McKittrick Canyon's unique natural landscape. The canyon has long been identified as containing "a treasury of scientific and scenic wealth" (National Park Service 1974:6). In order to prevent degradation of the natural landscape, the Park Service limits and controls access to the canyon. McKittrick Canyon contains two of the three areas of the park designated as "Research Natural Areas." These are areas that, because of their unique natural scientific value, are closed to visitors, thus preserving their pristine environments. The natural research areas are protected, outdoor laboratories that are only available to researchers who have obtained the necessary permits. In McKittrick Canyon, these areas include the portion of South McKittrick Canyon, just above the Grisham-Hunter Cabin and the middle fork of North McKittrick Creek (National Park Service 1994:37). These protected areas are not accessible by trail and are marked with a sign that conveys their research status.

## Conclusion

It took over half a century, but a park in the Guadalupe Mountains of Texas was finally established. Numerous individuals and organizations worked tirelessly to see the establishment of the park. Roads were built and articles were written to attract the tourist and naturalist alike to this unique spot in Texas that now is a part of the National Park System. The National Park Service has always recognized that their own presence, along with that of the park patrons, leaves an indelible mark upon the land. Park planners and developers continue to operate in such a manner so as to minimize the negative effects that come with the operation of a popular national park.

Today the National Park Service at Guadalupe Mountains has made numerous improvements and additions in and around McKittrick Canyon that have changed the landscape to make visitors' experience a meaningful and memorable one. The access road leading to the mouth of McKittrick Canyon has made this part of Guadalupe Mountains National Park easily accessible to the visitor. The McKittrick Canyon Visitor Center provides park patrons with necessary and useful interpretive information that explains and highlights the cultural and natural significance of the canyon. Improved trails provide the means for park patrons to explore the unique biological, geological and cultural landscapes of McKittrick Canyon. The canyon remains today, especially during its "Fall Colors Season," a very popular destination for park visitors and tourists just passing by, via US Highway 180-62.

## CHAPTER VII

### CONCLUSIONS

McKittrick Canyon, Guadalupe Mountains, Texas has been described as “the most beautiful spot in Texas,” and those that have been there can understand why. Its unique ecosystem, which supports a mosaic of desert and woodland species, makes the canyon a true “oasis” in the surrounding desert. People have existed in the canyon for thousands of years, drawn to its abundant supplies of food, water and shelter. Today part of the National Park System, McKittrick Canyon continues to entice people with its pristine natural surroundings, who come not because they have to, but because they want to. In order to understand why McKittrick Canyon has always been a place that people want to be, it is necessary to examine the relationship that people over the years have had with the canyon. What brought people to the canyon was the land itself. To understand the cultures that have lived in the canyon, it is imperative to examine the interwoven ties these people have had and continue to have with the land.

Situated between the lowlands of the Chihuahuan Desert and the highlands of the Guadalupe Mountains, McKittrick Canyon contains a unique representation of plants and animals. Here, desert plant species such as agave, sotol and prickly pear intermingle with plants more commonly found in woodland environments, such as the

Texas madrone and ponderosa pine. A diverse collection of mammals, reptiles, birds, and insects can also be found in the canyon.

Archaeologists have found evidence that supports a continuous occupation of the region for at least 10,000 years. Paleo-Indian (8000-6500 B.C.), Early Archaic (6500-3000 B.C.), Middle Archaic (3000-500 B.C.), Late Archaic (500 B.C.-A.D. 1000) and Late Prehistoric (A.D. 1000-1519) cultural remains have been documented at numerous sites throughout the park. The Late Paleo-Indian period was characterized by the hunting of now-extinct big game animals and the gathering of wild plant foods. Late Paleo-Indian remains found in the Guadalupe Mountains area have primarily been lithic artifact scatters associated with the hunting of larger game animals. The Early Archaic began what was to be a long tradition of a generalized hunting and gathering adaptation, with subtle changes throughout the Middle and Late stages. Pratt Cave, a Late Archaic site in McKittrick Canyon, yielded a cache of prehistoric artifacts that have helped archaeologists better understand the prehistory of the area. The Late Prehistoric period was a transitional time in the Guadalupe Mountains and surrounding area; the general hunting and gathering adaptation persisted, but people began to exploit a more wide variety of ecological niches. It was during this time that the area was most intensively utilized by prehistoric peoples.

More recently, the Ndé People had a significant presence in the park lands. McKittrick Canyon and the Guadalupe Mountains were very special places to the Mescalero Apache, as Ndé traditional history places the Guadalupe Mountains at the

center of their traditional territory. The Ndé People believed that this was the place where they were created, and they viewed themselves as a part of the natural landscape, bound to the land by a sacred edict set forth by their Creator Goddess, White Painted Woman. The abundant supply of plants, animals and fresh water, coupled with the spiritual significance of the land, made this area highly desirable to the Ndé People. Their intricate knowledge of and reverence for the landscape made it possible for them not merely to survive, but to thrive in what some have called a harsh, intolerable environment.

In the late 1800s, McKittrick Canyon was frequented by soldiers of the United States Army. Cavalry detachments from Ft. Davis periodically negotiated the rugged terrain of the canyon in pursuit of the Mescalero Apache. The “Buffalo Soldiers” of the Ninth and Tenth Cavalry routinely fought with the Mescalero Apache of the Guadalupe Mountains, carrying out the government’s policy to subdue and pacify the Indians of the West.

After the Mescalero Apache had been forcefully driven from their traditional homeland, ranchers and settlers eventually moved into the Guadalupe Mountains. These newcomers were attracted to the area for some of the same reasons that had attracted the Paleo-Indians and the Ndé People. The landscape and climate was conducive to ranching operations, and by the early twentieth century, cattle, goat and sheep ranching was on the rise in the Guadalupe Mountains region. Judge Hunter, who established an angora goat ranch in McKittrick Canyon, also was an avid

conservationist. Wallace Pratt, a noted petroleum geologist also made his home in the canyon and devoted much time and effort to teaching people about the unique geology of McKittrick Canyon and the Guadalupe Mountains. Both Hunter and Pratt were important players in the history of the establishment of the park.

The National Park Service has made a substantial impact on the landscape of McKittrick Canyon. Recognizing the inevitable manipulation of the landscape that accompanies the presence of the National Park Service and park visitors in the canyon, park plans for development have been designed in such a manner so as to preserve the pristine wilderness conditions and delicate ecosystem that characterizes McKittrick Canyon. For the purpose of making McKittrick Canyon more accessible to park patrons, several major facilities have been established in and around the canyon by the National Park Service. A paved access road that links the canyon with the highway, accompanied by a paved parking lot, provides relatively easy entrance into the canyon. The McKittrick Canyon Visitor center, completed in 1982, provides canyon hikers with trail maps and various other important information about the natural and cultural landscape of McKittrick Canyon. The visitor complex also makes available to the park patron interpretive exhibits, picnic tables and a comfort station. The National Park Service also authorized the construction of three interconnected trails that wind their way through the southern and northern portions of McKittrick Canyon.

Although the people who have made McKittrick Canyon their home have been researched and documented, it is important to look at these people in relation to their natural environment. To understand the impact that people have made on the canyon, one must examine the impact that the canyon has made on the people. As more and more visitors tour McKittrick Canyon each year, the attraction that this place holds for people is still evident. Just as it has always been, people still are drawn to McKittrick Canyon's remarkable beauty and pristine natural surroundings.

## BIBLIOGRAPHY

- Basehart, Harry W  
1967      *The Resource Holding Corporation Among The Mescalero Apache. *Southwestern Journal of Anthropology* 23:277-291.*
- 1974      *Mescalero Apache Subsistence Patterns and Sociopolitical Organization.* Garland Press, New York.
- Basso, Keith H.      (editor)  
1971      *Western Apache Raiding and Warfare: From the Notes of Grenville Goodwin.* University of Arizona Press, Tucson.
- Blair, W. Frank  
1950      The Biotic Provinces of Texas. *Texas Journal of Science* 2:93-117.
- Boisvert, Richard  
1980      *A Technological Analysis of Lithic Assemblages from the Guadalupe Mountains National Park.* Master's Thesis, University of Kentucky, Lexington.
- Brand, Donald E.  
1937      *The Natural Landscape of Northwestern Chihuahua.* University of New Mexico Press, Albuquerque.
- Brand, John P. and Alonzo D. Jacka  
1979      Geology of the Guadalupe Mountains National Park. In *Biological Investigations in the Guadalupe Mountains National Park, Texas*, Edited by H.H. Genoways and R.J. Baker, pp.1-11. National Park Service Proceedings and Transactions Series 4. Museum of Texas Tech University, Lubbock.
- Bryant, Vaughn M. Jr, and Harry J. Shafer  
1977      The Late Quaternary Paleoenvironment of Texas: A Model for the Archeologist. *Bulletin of the Texas Archaeological Society* 48:1-25.

- Burley, Joanne  
ca. 1980s  
Glenn Biggs and the Establishment of Guadalupe Mountains National Park. Ms. On file, Glenn Biggs Reference File, Special Collection/Southwest Collections, Texas Tech University, Lubbock.
- Cameron, Jenks  
1922  
*The National Park Service*. D. Appleton and Company, New York.
- Castetter, Edward F. and Morris E. Opler  
1936  
The Ethnobotany of the Chiricahua and Mescalero Apache. *Ethnobiological Studies in the American Southwest* Vol.4. University of New Mexico Press, Albuquerque.
- Clifton, Don  
1992  
An Archaeological Survey of 26 Miles of the Boundary of Guadalupe Mountains National Park Culberson and Hudspeth Counties, Tx. *Prepared for Guadalupe Mountains National Park Contract # RFQ7170-90001*.
- Cornely, John E.  
1976  
*Checklist of Mammals for Guadalupe Mountains National Park*. Texas Tech University Press, Lubbock.
- Cremony, John C.  
1868  
*Life Among the Apache*. Roman and Company, San Francisco.
- Dilsaver, Larry M. (editor)  
1994  
*America's National Park System: The Critical Documents*. Roman & Littlefield Publishers, Lanham.
- Dinges, Bruce J  
1987  
*Soldiers West: Biographies from the Military Frontier*, Edited by Paul Andrew Hutton. University of Nebraska Press, Lincoln.
- Dixon, Boyd  
1995  
*An Archaeological Survey of the Proposed Windpower Project Culberson County, Texas*. Espey, Huston, and Associates, Inc., Austin.

- Dutton, Bertha P.  
1975 *Navajos and Apaches*. Prentice Hall, Englewood Cliffs, New Jersey
- Everhart, William C.  
1972 *The National Park Service*. Praeger Publishers, New York.
- Fabry, Judith K.  
1988 *Guadalupe Mountains National Park: An Administrative History*. Southwest Cultural Resources Center Professional Papers No. 19. National Park Service, Santa Fe.
- Farrer, Claire R.  
1991 *Living Life's Circle: Mescalero Apache Cosmivision*. University of New Mexico Press, Albuquerque.
- 1994 *Thunder Rides a Black Horse: Mescalero Apaches and the Mythic Present*. Waveland Press, Prospect Heights, Illinois.
- Forbes, Jack D.  
1960 *Apache Navajo and Spaniard*. University of Oklahoma Press, Norman.
- Gelbach, Fredrick R.  
1963 A Biological Visit to McKittrick Canyon. *National Parks Magazine* 37:2-7
- 1966 Plant Formations in the Natural History Interpretation of Southwest Desert Regions. *National Parks* 40 16-18.
- Goss, James A., PhD.  
1991 Reconstructing Mescalero Apache Subsistence Patterns at Guadalupe Mountains National Park. *Forum of the Association for Arid Land Studies, Vol. III. Ed. C.M. Davison*. Texas Tech University Press, Lubbock.
- Hester, Thomas R.  
1979 Early Populations in Texas. *Archaeology* 32:26-33.

- Katz, Susanna and Paul Katz  
1974 *An Inventory and Interpretation of Prehistoric Resources in Guadalupe Mountains National Park, Texas. In fulfillment of National Park Service Contract #CX700030203.*
- Katz, Paul  
1978 *An Inventory and Assessment of Archaeological Sites in the High Country of Guadalupe Mountains National Park, Texas. Center for Archaeological Survey Report. 36. The University of Texas at San Antonio.*
- Katz, Susanna  
1983 *Late Prehistoric Period Environment and Economy of the Southern Guadalupe Mountains, Texas. Ph D Dissertation, Department of Anthropology, University of Kansas.*
- Katz, William Loren  
1971 *The Black West. Doubleday & Company, New York.*
- Kenner, Charles L.  
1999 *Buffalo Soldiers and Officers of the Ninth Cavalry 1867-1898: Black and White Together. University of Oklahoma Press, Norman.*
- King, Philip B.  
1948 *Geology of the Southern Guadalupe Mountains Texas. United States Government Printing Office, Washington.*
- Klepper, Don  
1966 *Treasure of the Guadalupe. Texas Parks and Wildlife 26 24-27.*
- Leckie, William H.  
1967 *The Buffalo Soldiers: A Narrative of the Negro Cavalry in the West. University of Oklahoma Press, Norman.*
- Lubbock Avalanche Journal  
1977 *"Guadalupe Mountains Park Has High Solitude-To Spare" 31 July. Lubbock, Texas.*

- Lind, Owen T  
1979      Limonology of McKittrick Creek, Guadalupe Mountains National Park. In *Biological Investigations in the Guadalupe Mountains National Park, Texas*, Edited by H.H. Genoways and R.J. Baker, pp. 123-139 National Park Service Proceedings and Transactions Series. Museum of Texas Tech, Lubbock.
- Mallouf, Robert J.  
1985      *A Synthesis of Eastern Trans-Pecos Prehistory*. Master's Thesis, University of Texas at Austin, Austin.
- McGee, R. Jon and Richard L. Warms  
1996      *Anthropological Theory: An Introductory History*. Mayfield Publishing. Mountain View, California.
- Monroe, Monte Latimer  
1991      *Glenn Biggs and the Crusade for a Guadalupe Mountains National Park*. Master's Thesis, Texas Tech University, Lubbock.
- National Park Service  
1994      *Backcountry/Wilderness Management Plan and Environmental Assessment Guadalupe Mountains National Park, Texas*. National Park Service, Salt Flat.
- Northington, David K. and Tony L. Burgess  
1979      Summary of the Vegetative Zones of Guadalupe Mountains National Park, Texas. In *Biological Investigations in the Guadalupe Mountains National Park, Texas*, Edited by H.H. Genoways and R.J. Baker, pp.51-57. National Park Service Proceedings and Transactions Series Museum of Texas Tech, Lubbock.
- Opler, Morris E.  
1935      The Concept of Supernatural Power Among the Chiricahua and Mescalero Apaches. *American Anthropology* 37:65-70.
- 1969      *Apache Odyssey*. Holt, Rinehart and Winston, New York.
- 1983      Mescalero Apache. *Handbook of North American Indians, Vol. X. ed. Alfonso Ortiz*. Smithsonian Institution, Washington D.C.

- Powell, A. Michael  
1998 *Trees and Shrubs of the Trans-Pecos and Adjacent Areas.* University of Texas Press, Austin.
- Pratt, Wallace  
1971 Letter to Donald A. Dayton. Wallace Pratt Files, Museum of Guadalupe Mountains National Park, Salt Flat.  
1973 Oral History Interview by Bill Griggs, 29 December 1973. Southwest Collection/ Special Collections Library, Texas Tech University, Lubbock.
- Ramos, Mary G. (editor)  
1999 *2000-2001 Texas Almanac.* Texas A & M University Press, College Station.
- Rettie, Dwight F.  
1995 *Our National Park System: Caring For America's Greatest Natural and Historic Treasures.* University of Illinois Press, Urbana.
- Schmidly, David J.  
1977 *The Mammals of Trans-Pecos Texas.* Texas A & M University Press, College Station.
- Schroeder, Albert H. (editor)  
1983 Pratt Cave Studies, Guadalupe Mountains National Park. *Bulletin of El Paso Archaeological Society* 21:1,2,3 and 4.
- Simmons, Alan H., Ann L. Wiener Stodder, Douglass Dykeman, and Patricia Hicks  
1989 *Human Adaptation and Cultural Change in the Greater Southwest: An Overview of Archeological Resources in the Basin and Range Province.* Arkansas Archeological Survey, Fayetteville.
- Sonnichsen, C.L.  
1958 *The Mescalero Apaches.* University of Oklahoma Press, Norman.
- Southwest Region National Park Service  
1974 *Proposed Master Plan Guadalupe Mountains National Park, Texas.* National Park Service, Santa Fe.

- Steward, Julian H  
1938 *Basin-Plateau Sociopolitical and Aboriginal Groups.*  
Bulletin of American Ethnology No. 130. Smithsonian  
Institution, Washington, D C.
- Suhm, Dee Ann and Alex D. Krieger  
1954 *An Introductory Handbook of Texas Archeology.* Abilene  
Printing and Stationary Company, Abilene.
- Tennant, Allen  
1980 *The Guadalupe Mountains of Texas.* University of Texas  
Press, Austin.
- Tilden, Freeman  
1968 *The National Parks.* Alfred A. Knopf, New York.
- Ussery, Hulling  
1982 Oral History Interview by Richard Mason. 22 February 1982.  
Southwest Collection/Special Collections Library, Texas Tech  
University, Lubbock.
- Wauer, Roland H.  
1992 *Naturalist's Big Bend.* Texas A & M University Press, College  
Station.
- Wernert, Susan J. (editor)  
1985 *Our National Parks.* Reader's Digest Association, New York.
- Wylie, Rosa L.  
1973 *History of Van Horn and Culberson County.* Pioneer Book  
Publishers, Hereford.

