

**McCallum  
Nature Trail**



MACHELLA VALLEY RESERVE



## INTRODUCTION

The Coachella Valley Preserve comprises nearly 13,000 acres of desert habitat. Originally designed to protect the federally threatened Coachella Valley fringe-toed lizard, the preserve protects the entire spectrum of flora and fauna which was once common in the Coachella Valley. From fringe-toed lizards, to kit foxes, coyotes, roadrunners, desert iguanas and palm oases, the preserve attempts to protect them all.

The size and expense of the Coachella Valley Preserve made it a difficult, if not impossible project for any one agency or organization. The

importance of having this area protected outweighed any other concern, and a coalition of agencies, two federal, one state and one private, got together to cooperatively purchase and manage this preserve as one unit. The Bureau of Land Management, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and a private conservation organization, the Nature Conservancy, are all partners in the creation and continuing management of the Coachella Valley Preserve. The support and participation of many individuals and local governments in the valley have been integral to the success of this project. The preserve was officially dedicated in April 1986.

While the preserve is primarily for the native plants and animals of the region it is also available to the human inhabitants and visitors to the valley. We encourage you to enjoy the preserve by walking along any one of several trails which explore the various habitats we are trying to protect. Please help us to protect these areas by obeying our few rules and encourage others to do the same:

1. No motorized vehicles on any trails or dirt roads within the preserve.
2. No pets. This is a place for the native animals only.
3. No smoking in the palm groves. They are extremely flammable.
4. Pick up all trash and bring it out with you.
5. No overnight camping. Please depart by sundown.
6. Needless to say, no firearms.

## MCCALLUM NATURE TRAIL SYSTEM

### HOW TO USE THIS BOOKLET

This booklet is intended to help you enjoy your visit to the Coachella Valley Preserve and Thousand Palms Oasis. As you walk along the trail, you will find numbered stakes; each stake corresponds to the identically numbered paragraph in this booklet.

### DESCRIPTION OF THE TRAIL SYSTEM

The McCallum Trail System winds through the Thousand Palms Oasis, along a ridge, through a wash and ends at the lovely McCallum Grove. The

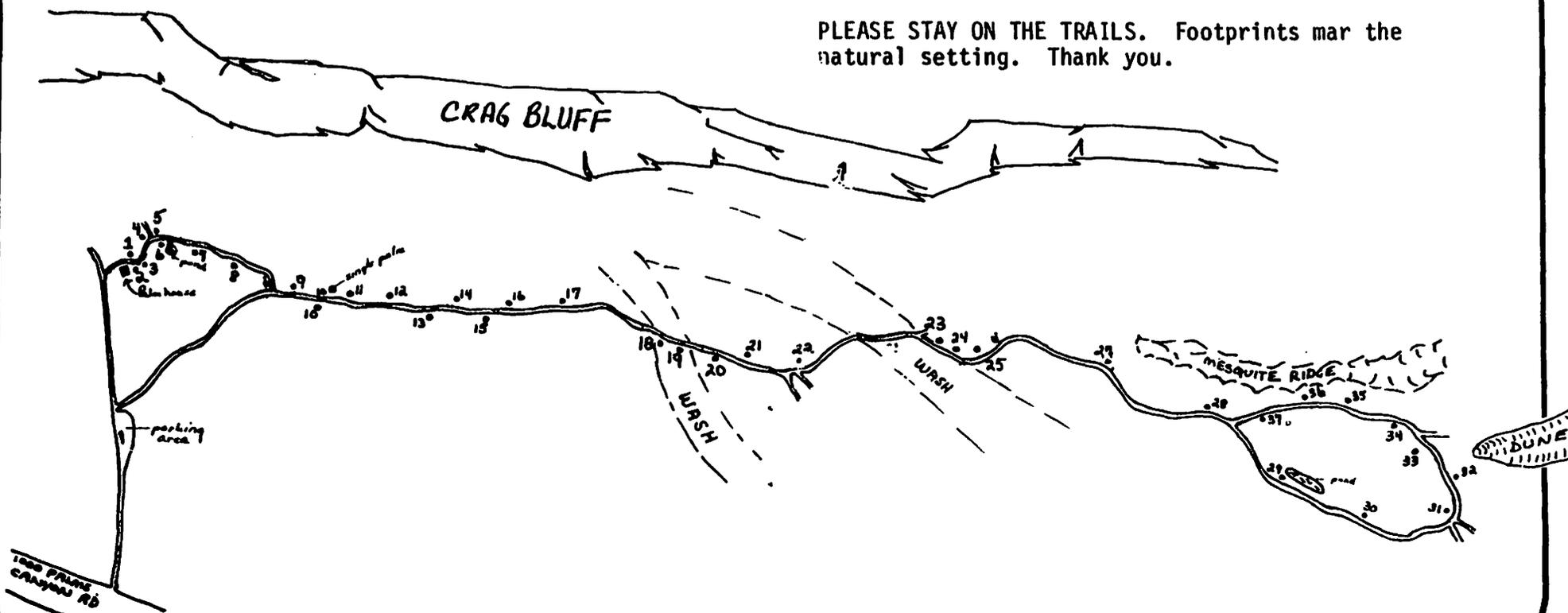
distance to the McCallum Grove is about 1 mile. You will need to retrace your steps to return to the parking area. While the path is fairly level, there are areas of soft sand.

### IMPORTANT INFORMATION

Please remember that there is **NO DRINKING WATER** along the trail. In order to keep the area free of litter, we ask that you picnic only at the tables provided near the Palm House. The only public restroom is located at the Palm House.

Please leave all plants, animals, and minerals as you find them, so that you and others can continue to enjoy visits to this area. Also, since palm groves are very combustible, we ask that you **DO NOT SMOKE** while visiting this area.

**PLEASE STAY ON THE TRAILS.** Footprints mar the natural setting. Thank you.



## 1. THOUSAND PALMS OASIS

One of California's largest groves of Washingtonia filifera-fan palms is located here in this Indio Hills valley. Surrounded by vegetation typical of the Colorado Desert, the jungle-like oasis of palms, willows, cottonwoods, and mesquite thrives as a result of the Mission Creek earthquake fault. In the immediate oasis area faulting has created an underground dam, which brings precious water to the surface. Wildlife flourishes in the oasis, a refuge whose permanence has spanned countless centuries. These palms, and their forefathers, have kept watch over the desert and its inhabitants and provided important food and shade to some early human visitors. Native Americans such as the mesa-dwelling Malpais were here from one to five thousand years ago. They were followed by Shoshone, Cahuillas and the settlers of European origin. More recently this oasis was used as the set for several movies: Cecil B. DeMille's "Son of the Sheik" (1922), "King of Kings" (1924) and Polanski's "Tell Them Willie Boy Is Here" (1969) starring Robert Redford, Robert Blake, and Katharine Ross were all filmed here. The establishment of the Coachella Valley Preserve, with this oasis at its heart, has insured that the reign of these majestic palms will continue for centuries to come.

## 2. THE PALM HOUSE HISTORY

- 1905: Thornburg's oasis homestead acquired by Louis Wilhelm, Hemet rancher.
- 1924: First Wilhelm family campouts at oasis.
- 1932: One room with fireplace constructed of palm logs by Paul Wilhelm over station site used in 1880s by teamsters freighting gold mine supplies; earlier, stage lines used oasis waterpoint.

1933: Desiring to make it his home, Paul leased homestead from his father. With the help of his father, and brothers Pat and Leo, he expanded the Palm House into a visitor's center/commissary for campers, science students, scouts, and weekenders in palm-shaded cottages.

1938-

1942: Oasis retreat drew nature lovers until World War II.

1946: Home from the war, Paul Wilhelm again turned the Palm House into a center for visitors to the oasis.

1986: Visitors continue to find the desert oasis, now under The Nature Conservancy's ownership, a place of peace and refreshment.

## 3. FAN PALMS

The native fan palm-Washingtonia filifera-is only found in areas where water is at or near the surface. In this case, water from desert springs caused by the action of the San Andreas fault system has provided a perfect habitat for the establishment of the many palm oases in this region.

Palm trees can reach a height of up to 60 feet. Their broad leaves can be over 6 feet across. In the late spring they produce blue-berry sized fruits, which are eaten by many species of birds and small animals. The seeds are often transported by birds and mammals from one water source to the next, dispersing the palms. Unlike other trees, palms do not have growth rings. Thus, there is no way to determine their exact age. It is thought that some of the largest are probably as much as 250 years old. Their root system is made up of thousands of small roots, most of which are no thicker than your thumb or index finger. The roots seldom reach more than 8 to 12 feet beneath the surface. Thus, if the water level in the area recedes below that point, the trees may die.

#### 4. THE FLOOD

On September 10th, 1977, five and one-half inches of rain fell on Thousand Palms Canyon in one hour. Compounding an already serious situation, the California aqueduct, flowing through the Little San Bernardino Mountains just north of Thousand Palms Canyon, became plugged with mud and debris and so overflowed, sending 1 billion gallons of water through the canyon. The result was a wall of water which roared down the canyon taking palm trees and buildings with it. The water was two feet deep in the Palm House; a water line can still be seen on many of the logs and on the piano. The flood also scoured the creek bed, dropping it fifteen feet below its pre-flood level. Prior to the flood there was a gentle slope from the Palm House to the creek bed, nothing like the precipitous cliff we see today.

#### 5. DRIP IRRIGATION SYSTEM

Palm trees have probably thrived on this site for thousands of years. The palms' reign was nearly ended when in the aftermath of the 1977 flood, the water table dropped 15 feet. The palms that survived the force of the flood could no longer reach the water table and soon began dying. The previous owners quickly installed drip irrigation which saved the trees. Black tubes at the base of the palms delivered 100 gallons of water per day to each tree in this grove. In the decade or more since the flood, the water table has risen and there is no longer a need for artificial irrigation. The irrigation system was turned off in February of 1987.

#### 6. PONDS AND FISH

The Thousand Palms Canyon creekbed has several springs which bring warm water to the surface. Historically these springs have been enshrouded with a thick growth of willows and cottonwoods. Previous owners of this land hoped to see it developed into a new desert recreation and housing

area. To attract people, they opened up the springs to create ponds and small lakes. Then, to control algae and mosquitos, the owners introduced Tilapia, a fish native to Africa. The ponds and fish do attract people but they also bring in many other wildlife species. Herons, egrets, ducks, and sandpipers are all attracted to this area.

#### 7. NARROW LEAVED WILLOW

There are several species of willow found in the Colorado desert. This plant is slender or narrow-leaved willow-Salix exigua. This species seldom grows over 6 feet tall. It forms dense thickets which provide shelter for many species of birds and small mammals. Willows belong to the same family of plants as cottonwood trees. They can only be found in wet areas around desert springs and streams.



#### 8. ARROW WEED AND COMMON REED

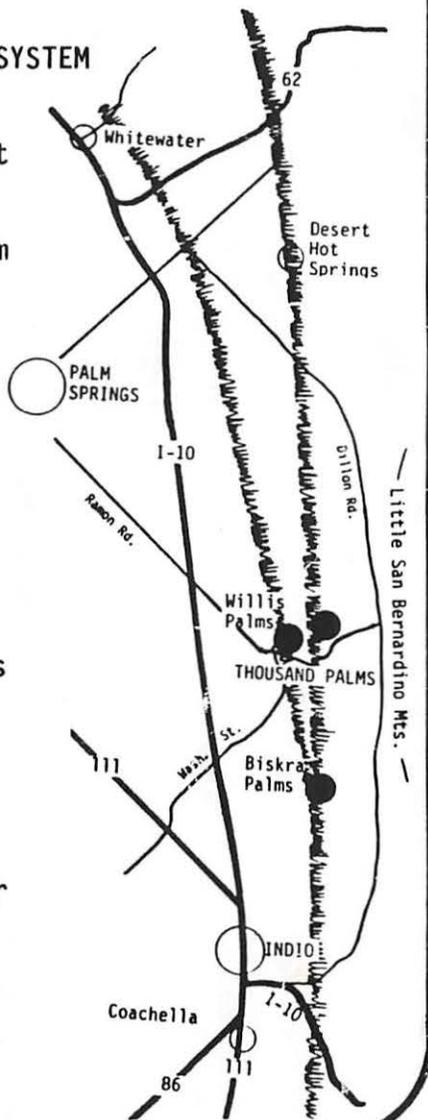
The straight stems of the arrow weed-Pluchea sericea-were used by local Indians for arrowshafts and for the construction of baskets and mats. They

were even used for the walls of their dwelling houses-kish. Arrow weed forms low thickets in areas where water is available at or near the surface. In the spring each wand-like branch will end in a cluster of lavender flowers.

Growing with the arrow weed is common reed-*Phragmites australis*. It is the plant with the large blade-like leaves. Common reed is found throughout California.

## 9. THE SAN ANDREAS FAULT SYSTEM

The most famous and most conspicuous earthquake rift of its kind in the world, the San Andreas Fault System, runs 700 miles from the Mexican border to Cape Mendocino north of San Francisco, where it dives into the Pacific Ocean. The Pacific Plate, on the west side of the fault, moves northwest about 2 inches a year relative to the American Plate on the east side of the fault. The two hard faces along the fault grind past one another, crushing the rocks in between. The rocks may also undergo extensive chemical alteration that converts many of the minerals to clay. Thus, the San Andreas Fault, not a single crack but a linear "zone" of crushed rock and clay, acts as an impenetrable barrier to groundwater. The water



rises near or to the surface and supports a long series of oases along the northeast border of the Coachella Valley, the largest of which is Thousand Palms.

## 10. SOILS

Where earthquake fault altered crushed rock and clay soil is visible at the surface, it is called "fault gouge". You are standing on fault gouge right now, which means you are standing directly atop one of the San Andreas Fault's many branches that pass through this region. These flour-like, fault gouge soils are often associated with palm oases along this fault system. Fault gouge soils often have a white crust, especially soon after a period of heavy rains. The crust is indicative of alkaline soils and results when water, heavily laden with alkali salts and minerals, evaporates at the soil surface. As the water quickly evaporates in the dry desert air, it leaves behind the white, alkaline salts to accumulate at the surface. Weeks and months after rainy periods, when the hot, dry surface temperatures don't allow saturated ground water to reach the surface, the white crust often disappears, having been blown away by strong winds.

## 11. GEOLOGY OF THE BLUFF

Surface evidence of the San Andreas Fault begins at about Salt Creek, just east of the Salton Sea, and extends north along the base of the Mecca and Indio Hills. Where the oasis of Biskra Palms is located the San Andreas breaks into the Banning and Mission Creek Faults. Note the mixed sandy/gravelly/rocky layers exposed on the bluff to your left. You are looking at a huge chunk of an ancient alluvial fan which was sheared off intact, and thrust up by the squeezing action between these parallel fault branches. The Indio Hills were forced up by action along the fault.

## 12. INKWEED

Inkweed-Suaeda moquinii-is found only in soils containing salt and alkali, generally around the edge of dry lakes, seeps or springs. The name inkweed was given because a black dye or ink can be made from the leaves and stems. The local Cahuilla Indians used the dye in their art work.

## 13. FOUR-WINGED SALTBUSH

The shape of the seed pods of the female plant give the four-winged saltbush-Atriplex canescens-its common name. This species, along with inkweed, can survive in areas of alkaline soil. It is one of the most commonly found and widely distributed species of saltbush. It is very nutritious and is a valuable forage plant for range livestock. Like many other desert shrubs, saltbush grow and shed their leaves in response to water conditions.



## 14. ALKALI GOLDENBUSH

There are many members in the genus Haplopappus-the Goldenbushes. All are members of the sunflower family. Alkali goldenbush-H. acradenius-is common throughout the Colorado and Mojave deserts. Different varieties are found from one area to the other, each with slightly different leaf structure. As the name implies they prefer rather alkaline soils. Their flowers are bright yellow.

## 15. CHEESE BUSH

Cheese bush-Hymenoclea salsola-like many of our desert plants, has a descriptive name. If you crush the leaves of this plant you may agree that the odor on your fingers smells like cheese. Don't try eating it however, since it has a very unpleasant flavor. Cheese bush is a member of the sunflower family. In spring it will be covered with white, papery flowers. Cheese bush can be found growing throughout the wash bed because it seems to prefer soil that has been disturbed by flood waters. This plant is also very common along roadsides and in vacant lots, areas where man has disturbed the soil.

## 15. DYEWEEED

Dyeweed-Psoralethamnus emoryi-is found throughout the Colorado desert. It is a member of the Pea family and is closely related to many other desert plants, including smoke trees and indigo bush. Its common name comes from the fact that a saffron yellow dye can be made from its flowers. Dyeweed seems to prefer to grow in the disturbed soil of wash beds and along road edges.

## 17. SMOKE TREE AND INDIGO BUSH

The tall gray-green tree behind the numbered marker is a smoke tree-Psoralethamnus spinosus. It is one of the plants that can be found only in a desert wash. It is dependent upon summer cloudbursts as well as winter rains. These spiny trees belong to the pea family and are covered with bright bluish-purple flowers in May or June. The trees offer nesting sites for many species of desert birds, particularly verdins and gnatcatchers. Watch for the completely round softball sized nests of the verdins as you hike.

The large shrub in front of the smoke tree is indigo bush-Psoralethamnus schottii. Most of the year the gray stems of the indigo bush seem lifeless, but soon after the spring rains narrow green leaves and buds appear, quickly followed by dark indigo blue flowers. This species is closely related to smoke trees and the flowers are similar in color, form and size.

#### 18. WASH BED COMMUNITY

Many moisture-loving trees and shrubs thrive in wash beds because more water is received and retained there. Smoke trees and desert willows have deep root systems that serve to anchor them against the force of flooding water as well as to collect moisture. Because of the extra moisture available, wash beds support a denser concentration of plants than any other desert habitat except an oasis. The availability of a variety of plants provides food and shelter to a large number of animals, making the wash bed one of the most diverse plant and animal communities of the desert.

#### 19. GEOLOGY OF THE WASH

Bend over and pick up two rocks-any two will do. Look at their color, their texture, their shape. Pick up two others and compare them with the first two, and with each other. Chances are they will be quite different. And they should be, because the only probable relation they have is that they were carried here by water flowing down the canyon. If you dig down into the ground a foot, ten feet or even 100 feet you will find more rocks just like these. For thousands of years the flood waters have collected rocks and dumped them all in the wash. There is no connection between any of the rocks you are holding other than they have each come from somewhere on the south slope of the

Little San Bernardino Mountains. As you walk down the trail be aware of the variety of rocks beneath your feet. But only look-LEAVE THEM FOR OTHERS TO SEE.



#### 20. CREOSOTE BUSH

Creosote Bush is one of our most abundant desert shrubs, growing throughout the Sonoran and Mojave deserts. The name Creosote comes from a resinous, musty odor given off by the plant after rains. It may smell remotely like the chemical wood preservative called creosote, however, there is no other similarity between the plant and that toxic chemical. The odoriferous resin emitted by this shrub adheres to its leaves and helps prevent evaporation of precious water, and also reflects solar radiation to help keep the plant's surface temperature down-both are important adaptations to desert living. Perhaps the most interesting fact about Creosote Bush is its age. These shrubs can reproduce by cloning into ever enlarging rings. By examining the average growth of these ring clones, and through radiocarbon dating, a good estimate for their age can be found. The largest ring is thought to be 11,700 years old, making that clone the oldest living thing on earth.

Creosote Bush was a medicinal cornucopia to the early American Indians. A tea made from various portions of this shrub was used to cure coughs, colds, ulcers, and relieve arthritic pain. The resin was used to mend pottery and waterproof baskets.

The bright yellow flowers can bloom any time of the year and are a favorite food of the Desert Iguana, Dipsosaurus dorsalis.

#### 21. TAMARISK

Several species of Tamarisk, (or Salt Cedar), were introduced into the arid southwest to be used as wind breaks and hedgerows. Native to Africa and Asia, the Tamarisks became weeds here in America, invading virtually every moist area throughout the region. The Tamarisks are dominant competitors, taking space and vital water away from native plant species. The Tamarisks also exude salt from their leaves onto the ground, inhibiting germination of native plant seeds. In many areas, Tamarisks have excluded all other plant species. Controlling Tamarisks has become one of the major challenges of land stewards in the desert. The cut stumps before you are all that is left of a Tamarisk forest that once dominated this site. We hope to eventually remove all the Tamarisks from the oases and washes that are within the Coachella Valley Preserve and allow the native species to dominate again.

#### 22. INHOLDINGS

Lured by the promise of inexpensive land, people homesteaded in the desert on parcels as small as five acres. The houses you see before you are left over from the 1948 Homestead Act. Most of these homes are owned by the Coachella Valley Preserve. Most will eventually be removed to restore the land to its natural condition. Others serve as homes for the Preserve's management staff or visiting researchers. Still others are privately owned. Please respect the rights of other's property and privacy and stay well away from the houses.



#### 23. DESERT REPTILES

There may be as many as 25 different species of reptiles found on the Preserve. These range in size from the four inch banded gecko-Coleonyx variegatus-to the five foot long gopher snake-Pituophis melanoleucus. Of the various species found here, only four are potentially dangerous to man; all are rattlesnakes, the sidewinder-Crotalus cerastes-being the most common.

As you walk through this area, look for the large, whitish desert iguana-Dipsosaurus dorsalis, the speedy, blue-black whiptail lizard-Cnemidoporus tigris-whose tail is longer than his body, and the zebra-tailed lizard-Callisaurus draconoides-who runs with his black and white striped tail waving over his back like a scorpion.

#### 24. WHAT IS A DESERT?

About 1/7 of the earth's surface-ten million square miles-is considered desert. In North America the desert covers a large part of Mexico and reaches up through the western United States as far north as Oregon and Washington.

Climatologists consider an area a desert if the rate of evaporation of moisture from the ground is twice the rate of precipitation. To this we usually add extreme temperatures and almost constant winds.

There are four distinct desert regions in North America. The northernmost is the Great Basin Desert. Just south of this region is the Mohave Desert. The third region is the Chihuahuan Desert of central Mexico. The last is the Sonoran Desert which reaches up into Arizona and Southern California from Mexico.

Thousand Palms Oasis is located in the Colorado Desert-a division of the Sonoran Desert.

## 25. WHY IS THIS AREA A DESERT?

The presence of tall mountain ranges, such as the San Jacintos and San Bernardinos, act as a barrier to the moisture-bearing air from the ocean. As the wet air from the coast is forced upwards over the mountains, it cools. The cool air cannot hold moisture so the mountains receive most of the rain. By the time the air reaches the Coachella Valley nearly all the moisture has been removed. Occasionally, strong winter storms filter into the Valley through the San Gorgonio Pass. During the early fall, tropical storms may have enough force to move up into the Valley from the Gulf of California. The movement of the storms into the Valley is very erratic. The normal annual rainfall for this area is 4-5" but some years there can be twice that much and in others there will be practically none.

## 26. COTTONWOOD

Cottonwood-Populus fremontii-are fast growing trees which are found in the canyons of the Sonoran Desert. Often they are the only sizable tree in the area. They offer shelter to birds to roost during the heat of the day and to nest. Even dead trees, such as this one, are used, particularly by birds of prey, to survey the surrounding countryside for potential prey. In colder climates, cottonwoods completely lose their leaves

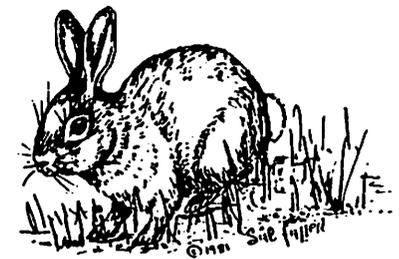
in the winter. In the warmer desert environment it is not unusual for the trees to only lose some of their leaves during the colder months.



## 27. DESERT MAMMALS

Perhaps during your walk today the only desert mammal you have seen is an antelope ground squirrel-Citellus leucurus-racing for the entrance of his burrow, his tail curled over his back. He and his relative, the round-tailed ground squirrel-Citellus tereticaudus-are among the few desert mammals which are diurnal, active during the day. Most others are nocturnal, active at night.

Small rodents like the deer mice-Peromyscus sps.- and the pocket mice-Perognathus sps.-spend their evenings gathering seeds for their larder. Predators such as the coyote-Canis latrans, the gray fox-Urocyon cinereoargenteus and the bobcat-Lynx rufus-also hunt at night, since that is when most of their prey are active. During the day most mammals retreat into their burrows to escape the heat and, more importantly, to conserve moisture.





## 28. COMMON BIRDS

The Coachella Valley Preserve and Thousand Palms Oasis is a haven for a great variety of birds. The lush vegetation, tall trees and open water attract everything from black-chinned hummingbirds to great blue herons. On a walk through the area you are likely to see small yellow-headed verdins not much larger than hummingbirds as well as elegant Gambel's quail moving through the underbrush searching for seeds to eat. Other common species include the cactus wren, the largest of all the North American wrens, mourning doves and house finches. At certain times of the year a medium sized solid black bird with a crest can be seen moving through the mesquite branches feeding on mistletoe. This is a silky flycatcher known as the phainopepla. A short checklist to the common birds of the oasis is included in the back of this field guide. It only lists some 25 of the approximately 150 species that have been recorded in the area.

## 29. SCREW BEAN MESQUITE

There are 2 varieties of mesquites found in the Colorado desert. This one is commonly called screw bean-*Prosopis pubescens*-because its seed pods are twisted into tight spirals. Screw bean mesquite is not as common as its relative the honey pod mesquite which we will see further along the trail. The mesquites flower in the spring with bright yellow blossoms. Their beans were eaten by grazing animals as well as by local Indians. Its wood was used for fuel and fence posts. Where the 2 species grow together, the screw bean can be distinguished from honey pod mesquite because its twigs are much

grayer, while those of the honey pod mesquite are distinctly brownish-red.

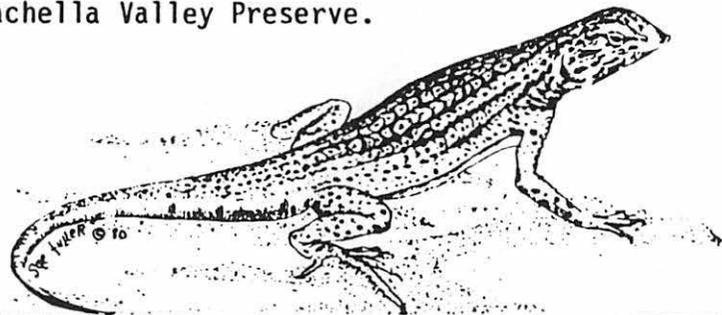
## 30. SAND DUNE & SAND SHADOW

From this trail marker please look ahead, through the palms, and you will see part of a large sand dune. Wind is responsible for the creation of sand dunes and shadows (piles of sand on the sides of certain hills). Fast moving winds will pick up and carry fine grains of sand for long distances until the wind abates. Once it has lost its velocity the wind cannot carry as much sand; as it strikes small hills or even plants, it drops its load and a dune or shadow begins to form.

The sand dune is the home of the Coachella Valley fringe-toed lizard-*Uma inornata*-which escapes predators and the heat by burrowing under the sand with the aid of its shovel-like snout. The fringes of scales along its toes enable it to move easily across the loose sand.

WALKING ACROSS THE FACE OF A SAND DUNE DESTROYS ITS NATURAL BEAUTY. THE TRACKS WILL REMAIN FOR OVER A MONTH, SINCE THE WIND DOES NOT BLOW HERE OFTEN. PLEASE STAY ON THE MAIN TRAIL.

The Coachella Valley fringe-toed lizard's sand dune habitat is fast being converted to golf courses and condominiums. With its habitat shrinking, the fringe-toed lizard is becoming increasingly rare. In 1980 the federal government listed the lizard as threatened. This action initiated a series of events which culminated in the establishment of the Coachella Valley Preserve.



### 31. PALMS AND FIRE

We have asked that when you are walking through the Coachella Valley Preserve that you do not smoke, as the dry fronds of the palms are particularly combustible. As we have learned, a host of wild species use the fronds for shelter and nesting materials. It is a shame to see an oasis which has been negligently burned. In many instances the palm trees themselves survive the fire, for as long as their central heart at the top of the plant is not damaged they usually can continue to grow successfully. It is believed now that the early Cahuilla Indians may have purposely burnt the palm groves either as part of religious ceremonies or to open up the groves so that they could make better use of them. Regardless, it is important to the conservation of this area that the grove is not burned, so please be careful.

### 32. WILDLIFE IN THE PALMS

The fan palm provides safe refuge for a great variety of animal species. Among its skirt of fronds can be found everything from black widow spiders to bats. Lizards and snakes often move through the fronds, especially at the base of the palm, searching for their prey. Rodents, such as mice and even packrats, have been known to nest in the skirts of the fan palm as well. Even some of the solitary bats roost under the fronds at the tops of the trees. Birds too use the plant both



for shelter and for nesting. Best known are the orioles which take the fibers from the edge of the palm fronds and intricately weave them into hanging teardrop shaped nests. Also, doves and even roadrunners will nest at the base of the fronds. In one location a red-tailed hawk built her nest in the top of a decapitated palm.

### 33. MCCALLUM GROVE

This cathedral like grove of palm trees has been christened the McCallum Grove to commemorate a generous gift by the McCallum Foundation of Palm Springs. The palms were previously known as the Simone Grove after the Simone family which homesteaded here. The long skirts of dead palm fronds indicate that fire has been absent from this grove in recent history. This characteristic sets this grove apart from most other palm oases in the Colorado Desert. Almost all other groves have been burned by either lightning or vandals. Fire seldom kills the trees and may have a beneficial effect by removing accumulations of dead fronds, opening up ground for young seedling palms to become established.

The pristine character of these palm groves has attracted more than just lovers of natural areas; the movie "Tell Them Willy Boy is Here" starring Robert Blake and Katharine Ross was filmed here. For the movie set the grove was turned into an authentic looking Indian village.

### 34. DESERT CONSERVATION

Once thought of as an endless wasteland, our deserts are finally being recognized for the diversity and beauty of life which inhabits them. Deserts are also becoming an increasingly popular

place for people to both live and play. Planners have projected that the entire Coachella Valley will be filled with houses, condominiums and golf courses by early in the 21st century. When this comes to pass the Coachella Valley Preserve will have the added significance of being the last large and accessible tract of native desert left in the region. Deserts are every bit as unique as redwood forests and towering mountain ranges, and are perhaps more fragile and easily destroyed. Insuring that our deserts are protected from over development, too much recreation, and our continuing consumption of the precious water table, is one of the major challenges of the coming decades.

### 35. HONEY-POD MESQUITE

Honey-pod mesquite-Prosopis glandulosa torreyana-will grow only where there is available water. It can send down a tap root 50 to 60 feet in length to find moisture. It is a member of the pea family.



The seed pods of the mesquite are eaten by many mammals. They also provided a staple food for the Indians who lived in the area. The whole pod was ground into a fine meal which was sprinkled with water and baked into a cake.

Mesquite, besides growing in washbeds, often grows in sand hummocks. Here many small rodents, such as kangaroo rats and ground squirrels, construct their burrows among the mesquite's roots.

### 36. MISTLETOE

The large clumps hanging in the mesquite trees are desert mistletoe-Phoradendron californicum. It is a parasite, sending out suckers which penetrate the tissues of the host plant. The coral-pink berries are a favorite food of the phainopepla, a bird who usually eats insects. The berries are also eaten by Gambel's quail, thrashers, and doves.

### 37. TRAIL END

On your walk today you have met many species of plants-smoke trees, mesquite, cheese bush, creosote bush. Many call the desert a wasteland, devoid of life. Yet there are over 500 species of native plants growing on the floor of the Coachella Valley. These plants support a tremendously varied and interesting number of animals. There are over 30 species of mammals ranging in size from bats to bighorn sheep. Over 200 species of birds are known either to be residents in the Coachella Valley or to migrate through the area. New species of insects and other invertebrates are being discovered by researchers continuously. Devoid of life? A wasteland? Hardly!!!

FROM THIS POINT YOU CAN RETURN TO THOUSAND PALMS GROVE AND THE PARKING AREA BY RETRACING YOUR STEPS TO STAKE #9. AT THAT POINT YOU CAN GO DIRECTLY TO THE PARKING AREA BY FOLLOWING THE LEFT FORK OF THE TRAIL.