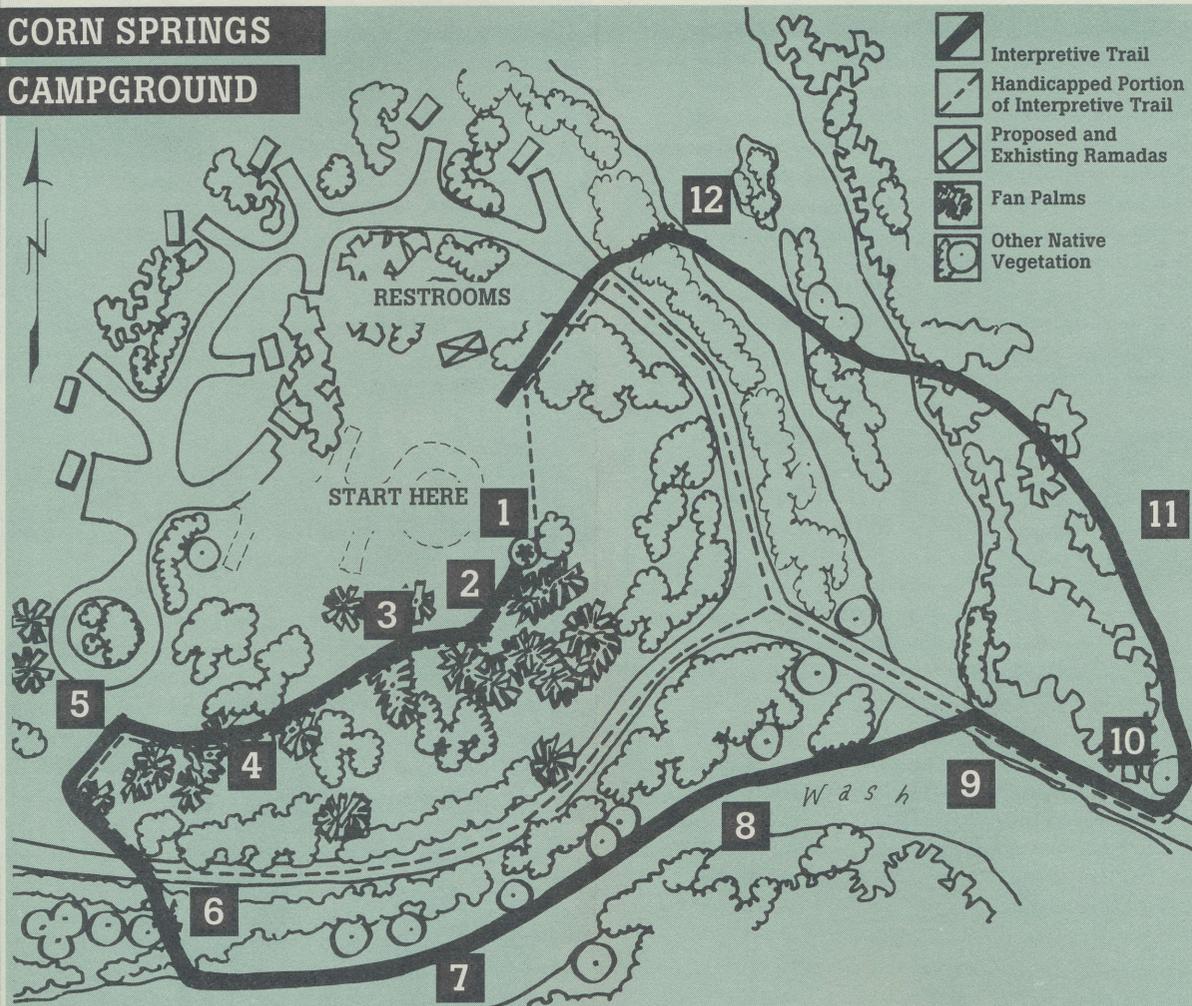


A stylized illustration of green leaves, possibly from a corn plant, set against a dark, textured background. The leaves are rendered in various shades of green, from light to dark, and are arranged in a fan-like pattern, radiating from a central point on the right side of the image. The overall style is graphic and modern.

CORN SPRINGS TRAIL GUIDE

CORN SPRINGS

CAMPGROUND



CAMPGROUND RULES

Camp in designated spaces only.
Use fees required for camping.

Drive only on established roads.
Cross-country is prohibited in this area.

Shooting is prohibited in the campground
and within 1/2 mile of the campground.

All pets must be on a leash within
the campground.

Quiet hours are between 9:00 p.m. and
8:00 a.m. Please Observe.

Build fires only in fire pits and stoves.

No plant or wildlife collection in
campground or oasis.

NEAREST GAS STATIONS:

Desert Center (17 miles north of Corn Springs) and
Chiriaco Summit (24 miles northwest of Corn Springs).

NEAREST PUBLIC TELEPHONES:

Desert Center and Chiriaco Summit

EMERGENCY PHONE NUMBERS:

All Emergencies 911 (24 hours)
Interagency Communications Center,
San Bernardino (909) 383-5651
(24 hours service for fire and law enforcement)

WELCOME

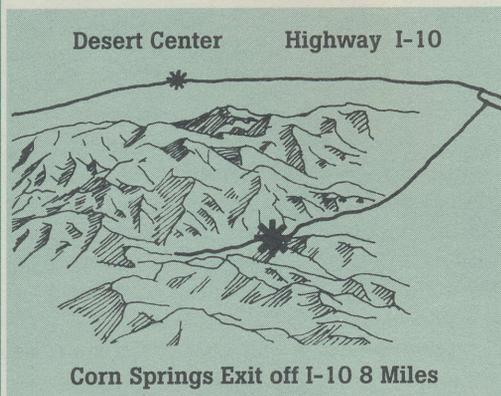
TO CORN SPRINGS

This scenic fan palm oasis is located deep in a canyon of the Chuckwalla Mountains; it has been operated by the Bureau of Land Management since 1968. Many changes have occurred in recent years, one of which was the construction of the Interpretive Trail by a group of high school students affiliated with the Student Conservation Association (SCA).

The area has been designated an Area of Critical Environmental Concern (ACEC) to provide special management attention to its rich and diverse wildlife and vegetation, unique archeological sites and scenic values.

Your cooperation is needed to assist BLM in the conservation of Corn Springs, so that its unique features and wildlife will continue to delight other visitors in the future. Use and enjoy, don't destroy. Allow yourself at least 40 minutes to complete the half-mile loop.

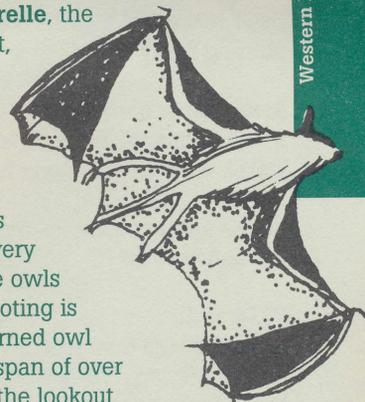
LOCATION MAP



STOP 1

The trail commences by leading you into the fan palm oasis. These are native **California fan palms** (*Washingtonia filifera*), named after George Washington. Palms of this type have been known to grow to 70 feet and are indicators of a high water table.

Many animals live in and around these trees. The **western pipistrelle**, the desert's smallest bat, may be seen around your campsite at dusk. Its zig-zag flight path enables it to capture up to 1/2 its weight in insects every night. Listen for the owls at night; the low hooting is probably a great horned owl (which has a wing span of over 4 feet). Also be on the lookout for America's smallest owl—the elf owl—about the size of a chunky sparrow.



Western Pipistrelle 4"

The large shady tree on your left is a **tamarisk** tree; the one behind you was felled in 1994. This tree is a non-native species introduced as a windbreak from the Middle East in the late 19th century. It is highly successful, competing with indigenous species for water. It also transpires salty water (try tasting the leaves), inhibiting the growth of other plants around it.

You may notice that some of the palms have little green growth, or may have died. This is believed to have been caused by a change in the water table, due to seismic activity. To conserve the available water for the native vegetation, the BLM recently removed a large tamarisk tree. The oasis is currently being monitored to note any changes in vegetation.

STOP 2

As you move along the trail, notice the upright, slender, willow-like plant lining the path. This is **arrowweed**, a plant commonly used by the Indians for making arrows. The straightest stalks were cut to

the desired length, moistened, and placed in the groove of a heated stone arrow straightener; a point was then affixed to the end.

Directly in front of you is a **cottonwood** tree. You can distinguish this plant when in leaf by the bright green triangular leaves and powdery-colored grey trunks. Listen for the sound of this tree rustling in the wind as the leaves flutter. Cottonwoods, like palms, are indicators of high ground water. Indians ate the clusters of flowers raw; the starchy sap found between the bark and wood was eaten either raw or cooked. Cord was made from the roots by soaking them in hot water and scraping away the bark.

STOP 3

In front of you is the well which provides water for the campground.

Water is scarce in the desert, and because of the lowering water table it should be used sparingly.

Notice the **date palm** directly behind the well. You can distinguish the date palm from native fan palms by the arrangement of the leaf blades.

The fan palm blade is circular and divided like the fingers of a human hand; the date palm blade is like a feather with leaflets along an elongated midrib. The date palm, has been introduced to California from North Africa.

Also notice the palm seedlings in the area. The health of a palm grove is difficult to measure but regeneration must take place at least every 100 years to insure its continued existence.

STOP 4

You are standing on what is believed to be the site where the most famous occupant of Corn Springs built his home. Between 1915 and 1932, Gus Lederer, the "Mayor of Corn Springs" was a permanent resident here. Gus lived here among the burros, for whom he would cook pancakes each

dicotyledons (most hardwood trees) have theirs in a ring around the edge of the stem. Thus when a palm is burned, it retains some of its transport system and can still live.

An unburnt palm "skirt" beautifully reveals the palm in its true glory, and provides homes for many creatures.

Now turn left at the road to find your way on the remainder of the trail; look out for the cairns (mounds of stones) which mark the path.



Antelope
Ground
Squirrel 6"

STOP 6

Notice the **ironwood** tree in the wash to the right of you. The ironwood, one of the desert's most beautiful trees, is covered with wisteria-like flowers in May and June. The wood is so hard that it can't be worked with ordinary tools, but Indians used it for arrow points and tool handles.

The **mistletoe** that heavily infests this plant is a parasite which saps the tree's energy and will eventually kill it. Ironwoods exude a gummy substance to push off mistletoe seeds as they try to implant; unfortunately it is not always effective.

To your right on the hill above you is an **ocotillo**. It has splendid red flowers in the spring which are highly prized by hummingbirds as a source of nectar. Although it has spines, it is not a cactus. The stems can function as leaves in a drought, and new leaves appear shortly thereafter.

Also note the **creosote bush** up on the hill. This is one of the most common and easily recognizable of the desert plants with its green, sticky leaves and yellow flowers. It releases an acrid, creosote-like odor after rain (hence the name) and creates black smoke when burnt. However it is not the source of the wood

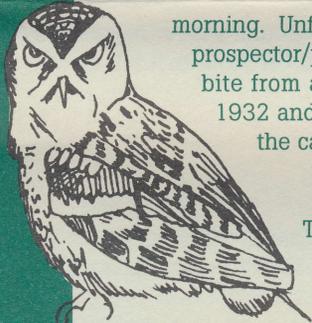


Kangaroo Rat 4"



Cottontail 14"

morning. Unfortunately this kind, quiet prospector/painter received a deadly bite from a black widow spider in 1932 and was buried 3 miles from the campground at Aztec Well, under a mound of stones.



The **barrel cactus** in front of you is common on the hillsides and in the canyons in this area.

During the remainder of your walk, you may see quite a few of the regular Corn Springs wildlife residents:

Antelope ground squirrel – listen for its high-pitched “chip” as you approach.

Black-tailed hare (“jackrabbit”) – actually a hare since the young are born fully furred in forms (shallow hollows), as opposed to rabbits which are born blind and hairless in burrows.

Cottontail rabbit – smaller and chunkier than a jackrabbit; when alarmed they thud the ground with their hindfeet.

Merriam’s kangaroo rat – they are active only at night, so keep a lookout when it gets dark. They are very efficient at conserving water and can survive on a diet of dry seeds, using the water produced through digestion instead of drinking.

STOP 5

As you have probably noticed, many of the palms in the grove have been burned. Legend has it that Indians burned the dead fronds because they believed the thatch was the hiding place of evil spirits. However, some historians believed that the burning was done only to increase fruit production by eliminating insect pests.

Burning does not kill palms unless the growth tip at the top of the plant (where the leaves are) is destroyed. The reason palms can survive burning is due to the position of their water and nutrient distribution system of the vascular bundles.

The diagram and burnt stump may help you to understand the structure of palms and other monocotyledons (like grasses). The bundles are scattered throughout the stem, whereas

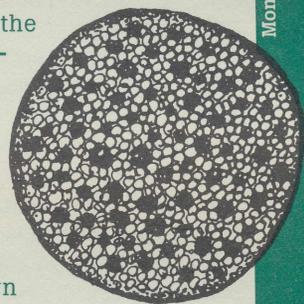
preservative that is made from petroleum. The creosote bush may be one of the world’s oldest living things, with some specimens believed to be 10,000-years old clones of successive generations growing outward in “creosote rings”.

STOP 7

In front of you is a **palo verde** tree. Palo verde means “green stick” in Spanish. In the spring, the yellow flowers make a spectacular show. During the dry season, the green branches drop their leaves and take over the job of the leaves (to produce food). The wood is soft and brittle and unsuitable for burning; it burns rapidly to ash, leaving no coals, and gives off an unpleasant odor.

On the other side of the wash is a **catclaw acacia**, named because of the short, curved, claw-like thorns. It is also called “wait a minute” bush, for obvious reasons.

As you proceed down the wash, rub and smell leaves of the green **cheesebush** (it may remind you of cheese), which has small, white flowers in the spring. The taller trees are the **smoke trees** which appear as a smoky haze, and carry attractive purple flowers which emerge in the late spring.



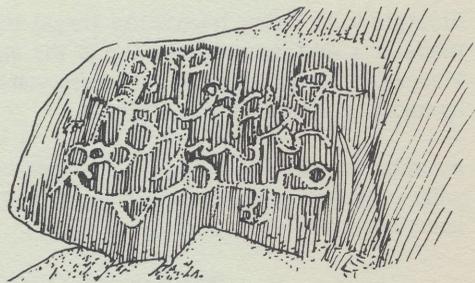
Monocot



Dicot

STOP 8

Search for this stop off to the left, close to the **palo verde** and **mesquite** trees; the latter was an important food source for southwestern Indian tribes. The bean is sweet and nutritious and can be eaten raw or cooked, or even made into an alcoholic drink. The gum was made into glue or eaten, or a black dye was produced from it which was then used as hair tonic or for painting pottery.



The wood was vital for building homes and making furniture; it also made excellent charcoal as it burns slowly and gives out much heat.

Mesquite can also be used as a modern day energy source. The beans produce methanol gas and alcohol that can be mixed with gaso



line to produce "gasohol". However, problems of slow growth, harvesting, and refining would have to be worked out before this would be a viable supplement to gasoline.

STOP 9

The **petroglyph** panel before you is the most obvious evidence of occupation of this area by Native Americans. It is not possible at present to determine the exact dates of the petroglyphs or who created them.

The purpose and meaning of the petroglyphs may also never be known. One recurrent theory has been that they were created in hunting places by Shamans (priests) to insure a successful hunt. Some people have identified a "corn symbol" on the rock face nearest the top. See if you can find it.

A major East-West Indian trail runs through Corn Springs. The spring was probably visited by a number of groups moving through the area. However, Corn Springs falls within Chemehuevi territory. The Chemehuevis occupied the eastern portion of Riverside County except along the Colorado River, which was

have sharp spines to protect them from being eaten. Some carry out their metabolic activities at night or are dormant or leafless in the very hot summer period.

Animals have a similar range of adaptations. Many are efficient at conserving water in metabolic/life processes, other can withstand a high body temperature (e.g. ground squirrels) and most exhibit behavioral adaptations to protect them from the harsh midday temperatures.



Verdin 4"

The long ears of the **rabbit** function as radiator to disperse heat, while reptiles must burrow or hide in a bush to escape from the heat of the day. Although birds have a higher body temperature than mammals, they carry out most of their activities in the early morning and evening to prevent overheating.

Compare these various designs with those of man; we rely on air conditioning and swimming pools to keep us cool in the hot summer months. Man is not well adapted naturally to the desert, which is why the Indians migrated to cooler areas during the hot summer months.



Burrobush

STOP 11

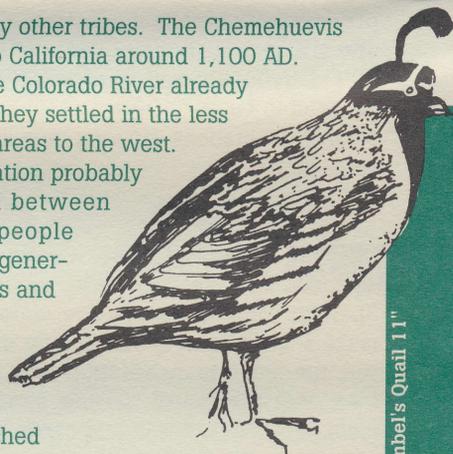
When you climbed up this rocky face, you may have noticed many low, rounded, grayish shrubs with white stems. This is **burrobush**, so named because wild burros seem to prefer it to all other available plants despite its bitter taste.

Also common in this rocky area is **brittlebush**. It is the silvery- grey rounded shrub. Notice that the leaves are much larger than the burrobushes. In March through May this plant

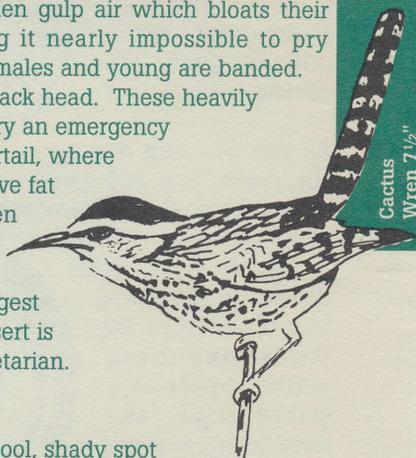
occupied by other tribes. The Chemehuevis moved into California around 1,100 AD. Finding the Colorado River already occupied, they settled in the less attractive areas to the west. The population probably numbered between 500-800 people who were generally hunters and gatherers.

You are probably being watched at this moment by at least one denizen of the rock ledges above you—the large, slow-moving **chuckwalla**.

The rock outcrops provide shelter and basking sites. When "chucks" are frightened and retreat, they wedge themselves in rocky crevices and then gulp air which bloats their bodies, making it nearly impossible to pry them loose. Females and young are banded. Males have a black head. These heavily built lizards carry an emergency "pantry" in their tail, where they store reserve fat to use later when food is scarce. It is surprising that the largest lizard in the desert is completely vegetarian.



Gambel's Quail 11"

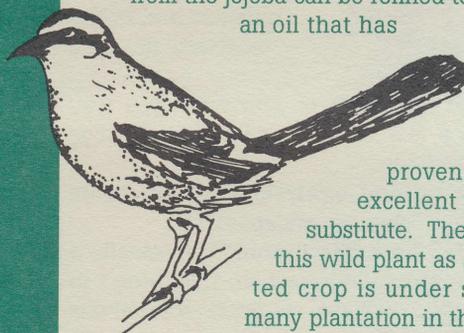


Cactus Wren 7 1/2"

burst into a bouquet of beautiful yellow daisy-like flowers. Indians used the resin that fell to the ground when the plant was in bloom for a chewing gum/ pain reliever; it was also used to make incense.

A few **jojoba** plants are on this ridge; one can be found to the right of this stop. The beans from the jojoba can be refined to produce an oil that has

been proven to be an excellent whale oil substitute. The future of this wild plant as a cultivated crop is under study on many plantation in the desert.



STOP 12

The **desert willow** to the right of you marks your last stop. Although commonly called a willow due to its resemblance to the narrow-leaved weeping willows, this wash-loving tree is actually related to the catalpa. Unlike true willows, the desert willow has large, lavender, orchid-like flowers, making it a prized ornamental.

Many birds occur in the area; here are a few species to look out for during your time here **Loggerhead shrike** — a black, white, and grey bird with swooping flight. Their lack of strong talons necessitates their impaling prey on thorns before consuming it.

Cactus wren — nests primarily in cholla and has a loud harsh, persistent call (similar to a dying car engine being turned over).

Black-tailed gnatcatcher — a small grey bird with a black tail. It is found most commonly in the mesquite and scrubby trees. This little bird must take in moist insects to compensate for water loss.

Verdin — a small grayish bird with a yellow head and almost white belly found along the road and in the wash. Like the antelope ground squirrel, they are active year-round, even on the hottest days.

Roadrunner — this comical large bird is built to run, and seldom flies. It gets most of its

STOP 10

This cool, shady spot will give you an opportunity to rest after your walk in the sun and explore how plants and animals cope with the desert's extreme conditions. Water and extreme temperatures are, of course, the limiting factors, and plants and animals that survive have adapted in some way.

Plants exhibit a variety of mechanisms for reducing water loss. They might have few small openings for breathing, or small lacquered leaves to minimize evaporation. Some have small, light-colored hairs to deflect light away from the plant; others (like most cacti)

moisture from a diet of insects, lizards, snakes, and occasionally the eggs and young of other birds.

Gambel's quail – the guzzler (drinker) near the pump is primarily for these birds. The concrete apron collects rainwater which is stored for future wildlife use. Quail usually water early each morning, and post a guard to warn the others of impending danger.

Orioles – if you are here in the spring or summer months look out for these spectacular birds.

Scott's oriole – Brilliant black and yellow, with lemon yellow underparts.

Hooded oriole – orange hood and underparts, black bib.

Phainopepla – eats mistletoe berries. Is recognized by a distinctive

headcrest and its black coloration, with white patches under each wing.



Black-Tailed
Gnatcatcher 4 1/2"

This concludes your guided tour. Please follow the trail back into the campground. Feel free to keep this brochure or return it to the holder where you picked it up. We hope you enjoy your visit at Corn Springs.



Brittlebush

INDIAN USE OF THE OASIS

In addition to being on the route for Indians moving east and west, Corn Springs was used by the Chemehuevi Indians who moved into California about 1,100 A.D. These Indians lived in harmony with the desert ecosystem, utilizing many of the native plants.

Some plants are unpalatable or even poisonous if not prepared properly, so **DO YOUR HOMEWORK** before you try any Indian recipes!

Below are just some of the ways Indians used the native flora:

MEDICINAL

mesquite gum (hair dye)
creosote (colds, chest infections, stomach cramps),
sage (colds, shampoo),
brittlebush (pain reliever).

FOOD

agave stalks, cactus flowers, fan palm seeds,
mesquite, saltbush, mistletoe berries, palo
verde seeds, smoke tree seeds.

SHELTER

ocotillo, fan palm, arrowweed, mesquite

TOOLS

desert willow, arrowweed (arrows)
ironwood (arrow points and tool handles)
mesquite gum (paint)
smoke tree twigs (baskets)
creosote (adhesives)

SOUTHWEST



NATURAL
AND CULTURAL
HERITAGE
ASSOCIATION

SNCHA — Southwest Natural and Cultural Heritage Association is a nonprofit interpretive association whose purpose is to promote the educational, interpretive and research programs of the Bureau of Management in the Southwest

BUREAU OF LAND MANAGEMENT

The vast open spaces of the California Desert are uniquely situated within a few hours' drive of over 15 million people.

In recognition of the special challenges created by this situation, Congress established the California Desert Conservation Area (CDCA) in 1976. Approximately one-third of the desert's 25 million acres are public lands administered by the Bureau of Land Management (BLM), an agency of the U.S. Department of the Interior. Congress directed the BLM to provide for the administration of public lands in the CDCA in a way that would protect its unusual natural and cultural values while providing for the wise use of its resources. The administrative headquarters for the CDCA are located at the BLM's California Desert District Office in Riverside. Public lands are managed for a variety of uses, including minerals, livestock grazing, wildlife, watershed, wilderness and recreation.

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(909) 697- 5200

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