



DESERT PALM OASIS

Just six hours south of Tucson, along the east coast of the Gulf of California, pockets of native fan palms nestle in isolated mountain canyons. The fact that palm trees grow in the Sonoran Desert is evidence of the region's tropical origins long ago.

Our Desert Palm Oasis recreates the tropical forest of one of these canyons — Cañón de Nacapule — located in the Sierra El Aguaje near the town of San Carlos, Sonora, Mexico. Just ¾ mile (1.2 km) long and surrounded by sheer cliffs 260 ft. high, Nacapule hosts 285 species of plants, many found in few other places, including three species of fan palms — Hesper Palm (*Brahea brandegeei*), Sonoran Palmetto (*Sabal uresana*) and Mexican Fan Palm (*Washingtonia robusta*).

Nacapule and other palm canyons in the region are delicately balanced ecosystems; oases of life threatened by human activity, increased groundwater pumping, livestock grazing and the introduction of exotic species.

"I know of no other place in the Sonoran Desert where the (floral) species richness is so great."

— RICHARD FELGER

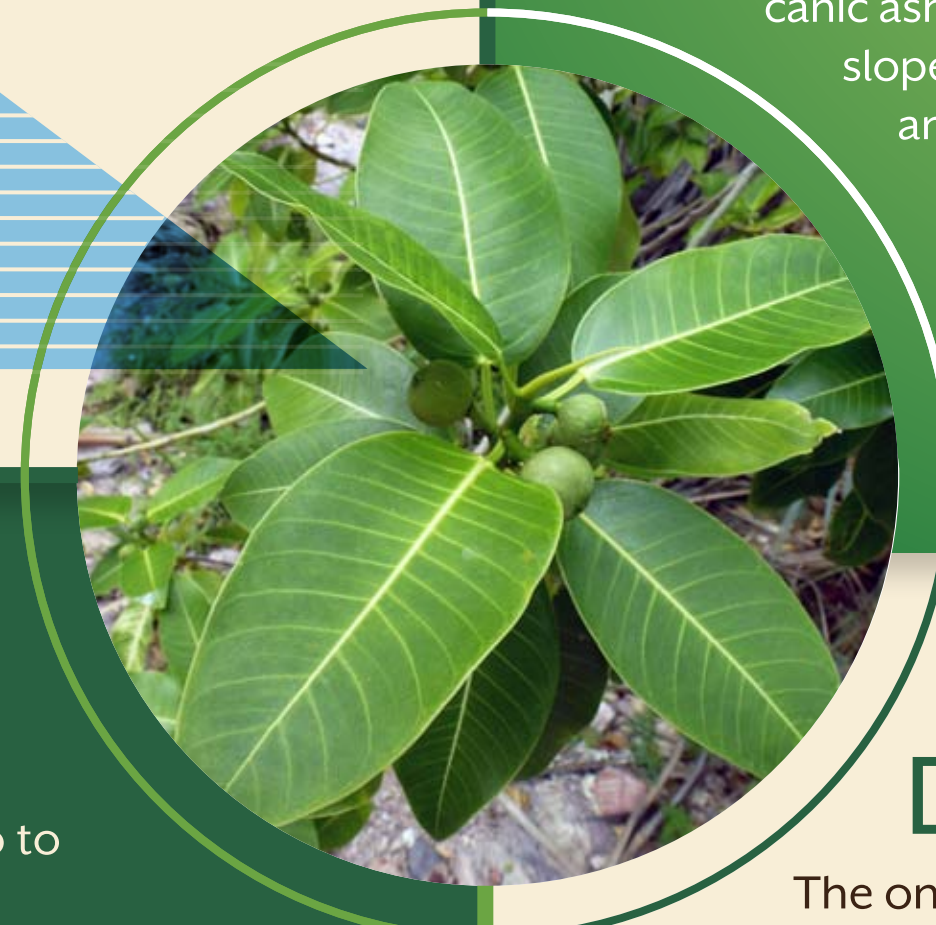


Geologic Roots

The mountains of Sonora, separated by vast stretches of arid terrain, provide havens for plants and animals that would not otherwise survive. Such is the case of the low mountain range north of San Carlos known as Sierra El Aguaje or the "mountain of water," its volcanic origins visible in its weathered colors of red rhyolite (silica laden lava) and yellow tuff (solidified volcanic ash). Over eons, erosion cut the mountain's slopes into narrow canyons where porous rock and underground fault lines channel and hold rain water, pushing it to the surface at canyon heads. These perennial springs and ephemeral seeps support shallow rooted palms and a wide variety of other plants and animals.

EARLOBE CANYON

The Yaqui/Mayo word for earlobe is "nacapul," a name also applied by locals to a native rock fig (*Ficus pertusa*) found growing wild in the canyon.



Central Gulf Coast

The Central Gulf Coast is one of six distinct regions making up the Sonoran Desert. It consists of two narrow strips bordering the central Gulf of California south to La Paz on the Baja Peninsula and extending from below Puerto Peñasco to Guaymas on the mainland.

Temperatures are relatively moderate, ranging from the mid-90s to the low-50s, rarely going higher or lower. Rainfall, however, averages less than 5 in. (125mm) per year, and not every year at that, making it one of the more arid regions of the Sonoran Desert. The Central Gulf Coast is noted for its imposing cardón cactus (*Pachycereus pringlei*), a taller and heftier cousin of the saguaro; other columnar cacti like organ pipe, senita and saguaro; and familiar drought-tolerant legume trees (e.g., palo verde, ironwood, mesquite). The more tropical and not so familiar elephant tree (*Pachycormus discolor*), palo blanco (*Lysiloma candida*) and pitaya agria (*Stenocereus gummosus*) usually associated with Baja also make an appearance on the mainland around Guaymas, having island-hopped across the Gulf in the distant past.



Arizona's Other Desert Palm Oasis

The only instance of native palms in Arizona can be found in Kofa National Wildlife Refuge near Yuma. Palm Canyon slices into the Kofa Mountains and supports a small grove of California Fan Palms (*Washingtonia filifera*).

