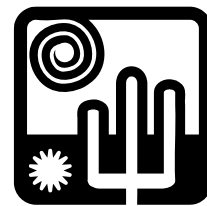


Baja California's Sonoran Desert

By Debra Valov



What is a Desert?

It would be difficult to find any one description that would fit all of the twenty or so deserts found on our planet because each one is a unique landscape. While an expanse of scorching hot sand dunes with the occasional palm oasis is the image that often comes to mind for the word desert, in fact, only about 10% of the world's deserts are covered by sand dunes. The other 90% comprise a wide variety of landscapes, among these cactus covered plains, foggy coastal slopes, barren salt flats, and high-altitude, snow-covered plateaus. However, one characteristic that all deserts share is aridity—any place that receives less than 10 inches (25 centimeters) of rain per year is generally considered to be a desert and the world's driest deserts average less than 10 mm (3/8 in.) annually.

But why are deserts dry? There are a number of factors involved, including: low rainfall; high temperatures; clear skies; high rates of solar radiation and evaporation; and desiccating winds. Soils low in organic content and high in minerals also decrease moisture retention. Geography plays an important role as well. Many of the world's hot deserts are located around 30° north or south of the equator while other deserts, such as the Gobi in Mongolia, are formed as a result of being in the rain shadow of a significant mountain range. High temperatures are not requisite for desert formation and therefore not all deserts are hot—the Gobi, Argentina's Patagonian desert and the Taklamakan Desert of China are examples of cold deserts, where the only moisture falls in the form of winter snow. The polar icecaps, where all moisture is locked up in the form of ice and snow, are also considered deserts.

***Desert:** "A place where lack of water is severely limiting to living things most of the time". ASDM*

Baja California's Desert Regions

Over 60% of the Baja California peninsula falls within the boundaries of the hot, dry Sonoran Desert. In the summer, average temperatures can exceed 104° F with a humidity of <10% in some regions and around-the-clock temperatures of 90-100° F are not uncommon. Daily temperature fluctuations during other seasons of the year can exceed 50° F (e.g., ranging between 35° and 85° F). Rainfall is

scarce and sporadic, with an annual average of 12-30 cm (4.7-12 inches). There are two rainy seasons, December-March and July-September, with the northern peninsula dominated by winter rains and the south by summer rains. Some areas experience both seasons, while in other areas, such as parts of the Gulf coast region, rain may fail for years on end.

Permanent above-ground water reserves are scarce throughout most of the peninsula but ephemeral, seasonal pools and rivers do appear after winter storms in the north or summer storms (hurricanes and thunderstorms—chubascos) in the south. There are also a number of permanent oases, most often formed where aquifers (subterranean water) rise to the surface. Pacific coastal regions along the entire peninsula enjoy the relatively cooling effects of fog throughout the year, generated as a result of the cool California Current; in some years, this may be the only source of moisture for wildlife.

Life in the Desert?

Plants and animals have developed many adaptations to deal with the desert's harsh environment. Organisms depend, above all, on water for survival and have developed a wide variety of characteristics and strategies for obtaining and retaining water. No sane, seasoned hiker would willingly face the challenge of the midday, desert sun in August, and if s/he had to, surely would not do so without first donning sturdy shoes, protective clothing, a wide-brimmed hat and sunscreen and carrying a water bottle. In the same manner, desert plants and animals have their own protective coverings and behaviors. Cacti, with their expandable ribs, as well as other succulent plants, are masters of water storage and retention. Dense hairs, spines, waxes and gummy exudates all protect plant foliage from damaging UV exposure, slow down water loss and help prevent overheating. Animals may sport large ears to help dissipate body heat or have the ability to recycle water from bodily wastes. Others will avoid the harsh environment altogether, migrating, hibernating or living a nocturnal lifestyle in which they spend their daytime hours in the shade or in underground burrows. Some plants avoid energy expenditure for special adaptations by living only a

* Underlined text—see vocabulary list

brief lifecycle in which they sprout, flower and go to seed within a few short months or seasons, dying back before the harsh weather begins.

In more temperate regions of North America, where water is relatively abundant, plant and animal life appears to be lush in comparison to the desert regions. However, the Sonoran Desert is far from being a sterile, lifeless region. Relatively speaking, it is one of the wettest North American deserts where

the dual rainy seasons, combined with the lack of hard freezes in winter, have led to an overall high diversity of plant and animal life—life that not only survives, but thrives in the desert.

Resources

Arizona Sonoran Desert Museum (ASDM): www.desertmuseum.org (info. in English and Spanish)
 Flora of Baja California: <http://bajaflora.org>
 San Diego Natural History Museum: www.sdnhm.org



Vocabulary

adapt; adaptation	adaptar; adaptación <i>f</i>
alluvial fan	bajada <i>f</i>
annual	anual <i>adj</i>
amphibian	anfibia
arid; aridity	árido <i>adj</i> ; aridez <i>f</i>
aquifer	acuífero
avoid	evitar
basin (geology)	cuenca <i>f</i>
bat	murciélago <i>m</i>
bighorn sheep	borrego cimarrón <i>m</i>
bobcat	gato montés <i>m</i>
burrow	madriguera <i>f</i>
cactus 1 Cardón, 2 Old Man, 3 Organpipe, 4 Pincushion	cacto o cactus <i>m</i> 1 cardón, 2 garambullo, 3 pitaya dulce, 4 viejita
caterpillar	oruga <i>f</i>
cliff	acantilado <i>m</i>
coyote	coyote <i>m</i>
deciduous	caduco, caducifolio
desert <i>n</i> ; desert <i>adj</i> ;	desierto <i>m</i> ; desértico (<i>adj.</i>)
diurnal	diurno <i>adj</i>
drought	sequía <i>f</i>
environment	medioambiente <i>m</i> (also: medio ambiente)
ephemeral	efímero <i>adj</i>
exudate	emanación <i>f</i>
flood	inundación <i>f</i>
foliage	follaje <i>m</i>
fur	pelaje <i>m</i>
gland	glándula <i>f</i>
grade (up or downhill)	cuesta <i>f</i>
ground squirrel	juancito <i>m</i> (local Baja usage) ardilla <i>f</i>
gummy	pegajoso <i>adj</i>
habitat, habitats	hábitat <i>m</i> , los hábitats <i>m pl</i>
hair; hairy	pelo <i>m</i> ; peludo <i>adj</i>
herb	hierba <i>f</i>
hibernate; hibernation	hibernar; hibernación <i>f</i>
hill, peak	cerro <i>m</i> , pico <i>m</i>
horned lizard, horny toad	cameleón <i>m</i>

hummingbird	chuparosa <i>f</i>
hurricane	huracán <i>m</i>
jack rabbit	liebre <i>m</i>
kangaroo rat	rata canguro <i>f</i>
leaf	hoja <i>f</i>
life cycle	ciclo de vida <i>m</i>
lizard	largarto <i>m</i> , lagartija <i>f</i>
plateau	mesa <i>f</i>
moth	mariposa nocturna, polilla <i>f</i>
nature	naturaleza <i>f</i>
nocturnal	nocturno <i>adj</i>
oasis <i>n</i> ; oases <i>npl</i>	oasis <i>m</i> ; oases <i>mpl</i>
organism	organismo <i>m</i>
península	península <i>f</i>
perennial	perenne <i>adj</i>
plain	llano <i>m</i>
pronghorn antelope	berrendo <i>m</i>
rain/thunder storm	chubasco <i>m</i>
rainfall	precipitación (pluvial) <i>f</i>
rattlesnake	casabel <i>f</i> serpiente de cascabel <i>f</i>
reptile	reptil
salt flat, drainage pan	playa <i>f</i>
sap, juice	savia <i>f</i>
slope, hillside	ladera <i>f</i>
snake	víbora, culebra, serpiente <i>f</i>
solar radiation	radiación solar <i>f</i>
sphinx (hawk) moth	mariposa esfinge <i>f</i>
spine	espina <i>f</i>
stem	tallo <i>m</i>
survive; survival	sobrevivir; sobrevivencia
tarantula	tarántula <i>f</i>
trees and shrubs mesquite tree Palo Blanco tree Elephant tree	árboles y arbustos <i>m pl</i> mezquite <i>m</i> palo blanco <i>m</i> torote <i>m</i>
wash, gully or stream	arroyo <i>m</i>
wasp (tarantula wasp)	avispa (de tarántula) <i>f</i>
wax; waxy	cera <i>f</i> ; ceroso <i>adj</i>