Cacti of Saguaro National Park

The cacti of Saguaro National Park are a diverse group of plants, ranging from the tiny fishhook pincushion to the massive and majestic saguaro. Not only does the Sonoran Desert offer an amazing variety of cactus species, it also exhibits some of the most fascinating adaptations in the plant world.

Adaptations

Adaptations are what enable the cacti you see all around you to thrive under the harsh conditions of the Sonoran Desert. Plants must adapt to the extreme heat, constant sun and scarce water, or they will die.

The most conspicuous adaptation of the cactus family is the spines, which are modified leaves. In addition to protecting the plant from hungry or thirsty animals, spines provide shade during hot summer days and warmth on cold winter nights. Spines also help prevent water loss due to dry winds.

On cholla cacti, which are often called jumping cactus, the spines also play a major role in reproduction. Cholla are segmented cacti. The plants are made up of many segments, which are loosely attached to the preceeding segment. Additionally, each spine is covered with a thin sheath, which separates from the spine quite easily. When an animal accidentally brushes against the cactus, the sharp spines stick into its skin and the segment breaks off the parent plant. The segment may travel with the animal for a few minutes or a few hours. Eventually, the spines slip from their sheaths and the segment falls to the ground. If soil conditions are right, the segment may take root and grow into a new plant.

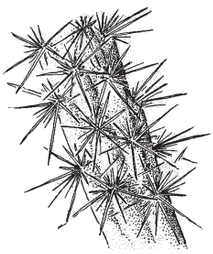
As with most desert plants, cacti have a shallow root system. These shallow roots enable cacti to capture rainwater from even the lightest showers.

If you take a close look at a saguaro or barrel cactus, you will notice a series of distinct accordion-like pleats on the outside of the plant. These pleats allow the plant to expand while it is absorbing rainwater, and to shrink when using its stores of water. Without the pleats, damage would certainly occur to the plant's skin. Even so, a saguaro may take in more water than its pleats will allow. When this happens, the skin splits into an open wound. If this split does not heal quickly, bacteria may get into the warm, moist tissue of the plant and possibly kill the plant.

As with most plants, cacti make their food through a process called photosynthesis. Unlike most plants that only take in carbon dioxide (CO_2) during the day, cacti utilize a complex form of CO_2 fixation known as Crassulacean Acid Metabolism, or CAM. This method of taking in CO_2 reduces the amount of water lost to the atmosphere because the stomata (pores) are open only at night when temperatures are lower and humidities are higher. The plant changes the CO_2 into four-carbon compounds, which are largely malic acid, and stores it overnight. The following day, with sunlight as its energy source, the plant completes its cycle of photosynthesis.

As a result of CAM, the liquids within many cacti are very acidic. Contrary to popular myth, you are not able to get potable water from a saguaro.

Safety in the Desert



Cacti are armed with an assortment of sharp spines. They vary from tiny, hair-like glochids, to large curving hooks, to 3 inch long spears. Whichever type you bump into, spines can pose a painful hazard to the unwary desert enthusiast.

The most frequently encountered cactus in the park is one of the 7 varieties of cholla. While extremely painful to remove, cholla and other cactus spines are not poisonous.

To remove a cholla segment, slide a pocket comb between the segment and your body. Once the comb is held securely under the segment, a quick, firm flick will usually dislodge it. A pair of tweezers or pliers may be needed to remove any spines or spine sheaths left behind.

After removing spines or glochids, you should clean the area well with soap and warm water. If infection sets in, see your doctor.

Common Cacti

If you would like to identify the cactus you see while exploring the park, the cactus gardens at both visitor centers offer interpretive signs that identify many of the common cacti found here. If you want to learn more about these fascinating plants, a variety of resource books are available at either visitor center bookstore.

These two books are a great place to start:

A Field Guide to the Plants of Arizona
Anne Orth Epple
Falcon Publishing Company

70 Common Cacti of the Southwest
Pierre C. Fischer
Southwest Parks and Monuments Assoc.

Common Name	Blooming Period
Teddy Bear Cholla	February - May
Fendler Hedgehog	March & April
Buckhorn Cholla (west district only)	April & May
Englemann's Prickly Pear	April - June
Fishhook Pincushion	April - August
Staghorn Cholla	May
Saguaro	April - June
Pencil Cholla	May & June
Christmas Cholla	May & June
Cane Cholla	May & June
Claret Cup Hedgehog	May - July
Chainfruit Cholla	May - August
Night-blooming Cereus	June & July
Arizona Rainbow	June - August
Fishhook Barrel	July - September

Preservation

All native plants within the state of Arizona are protected by law. Permits are required for removal or sale of any native plants, even from private land.

You can help discourage theft of cactus and other native plants by purchasing your landscaping plants from legitimate sources.