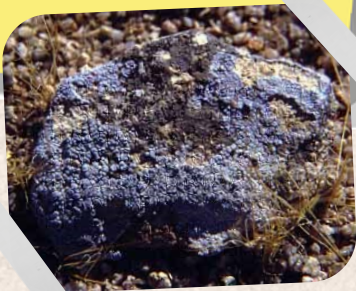


## Lichen

A lichen is two different organisms, an alga and a fungus, living together as a single unit in a symbiotic relationship. The alga provides food through photosynthesis and the fungus forms a support matrix and supplies the necessary water. Dry forage forms most of the tortoises' diet when live plants are no longer available. They eat the dried stems, leaves, flowers, and fruits of plants such as split grass, blazing star, gillias, desert dandelion, filaree and many other species. Lichens are extremely resilient and able to withstand the wide extremes in temperature found in the desert.



## Beavertail Cactus

The beavertail cactus (*Opuntia basilaris*) is a low growing member of the prickly pear family. The flat stems or "pads" lack the large spines found in the closely related cholla but are covered with dense tufts of glochidia -- tiny, needle-sharp, barbed "hairs" that are very irritating to the skin and very difficult to remove. Despite the glochidia, desert tortoises do eat the pads. The spectacular spring magenta flowers give way to small seed-laden fruits. Beavertail cactus is found at the Desert Tortoise Research Natural Area mainly at higher elevations.



## Winter Fat

Winter fat (*Krascheninnikovia lanata*) can be identified even from a distance by the white, hairy seeds that tip the branches of the plant. It is a member of the lamb's quarter family (Chenopodiaceae) and is related to the spiny hop-sage. Winter fat is valued as a winter grazing plant by ranchers throughout the western US. Native Americans made a tea from the plant to drink and to wash hair. In particular, the Zunis chewed the fresh root and used them as a burn remedy. Also, birds collect the soft hairy seed to line their nests.



Thanks for  
visiting! Please  
come again  
and have a  
beautiful  
day!

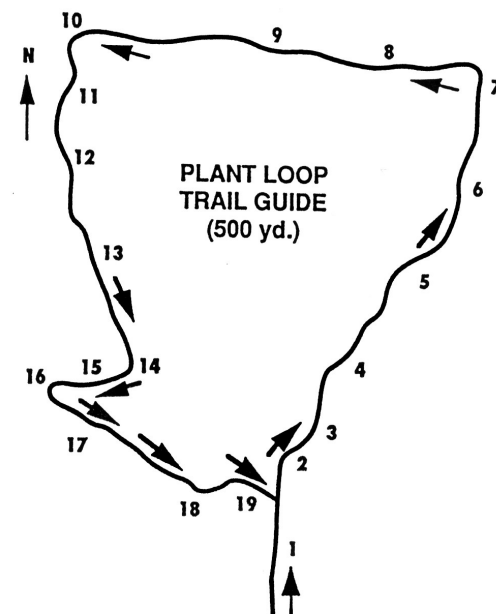
DESERT TORTOISE PRESERVE COMMITTEE



# Plant Loop

## Trail Guide

There are over 160 species of perennial and annual flowering plants in the Desert Tortoise Research Natural Area. Many of these plants provide food and shelter for the desert tortoise and the other animals that live here. Xeric adapted plants have evolved many strategies to deal with the harsh realities of life in the desert. The plants selected here illustrate some of these adaptations.





## Creosote Bush

The creosote bush is the dominant perennial plant over much of the deserts in California. It is important to wildlife by providing shade, shelter, and food. This hearty shrub displays many adaptations for moisture conservation:

- Its small leaves are covered by a wax that inhibits moisture loss;
- The leaflets fold together to decrease surface area which also decreases water loss;
- During extremely dry times, leaves are shed to further conserve moisture.



## Spiny hop-sage

The distinctive gray-tipped leaves and striated bark make the spiny hop-sage, *Grayia spinosa*, readily distinguishable from other shrubs with which it is associated. The hop-sage is dioecious, meaning that male and female flowers are found on separate plants. The female plant displays bright purplish bracts (flat fruits) in the spring, that make this one of the showiest shrubs in the Mojave desert.



## Mojave Aster

The Mojave aster (*Xylorhiza tortifolia*) is widespread in southern deserts, largely in creosote scrub community. The flower of this hardy desert perennial can vary from violet to lavender or almost white. The usual habitat for this species is rocky slopes, but it can be seen occasionally in dry, flat areas such as here at the Desert Tortoise Research Natural Area. In April and May a Mojave aster may produce as many as 20 blooms, making it very attractive and obvious. After bloom, the plant dies back leaving inconspicuous barren stems and brown leaves.



## Paperbag Bush

The inflated seed pods of the paperbag bush *Salazaria mexicana* begin as the calyx (the outer leaves that surround an unopened flower bud). As the purple and white pea-like flower dries and disintegrates, the calyx enlarges to become a papery sack about a half an inch in length, sometimes tinged pink.



## Joshua Trees

Joshua trees, *Yucca brevifolia*, can be found in the most elevated areas of the Desert Tortoise Research Natural Area. These magnificent but incredibly slow-growing members of the lily family occur throughout the Mojave desert. Indeed, the presence of Joshua trees is a useful indicator that an area is part of the Mojave desert biome. Joshua trees may reach a height of 30-35 feet.



## Goldenhead

The low, rounded goldenhead (*Acamptopappus sphaerocephalus*) has whitish bark. Pale yellow flower heads can usually be seen from May through June. Each head is composed of many tubular disk flowers with no "petal" or ray flowers. Goldenhead is a member of the highly diverse sunflower family.