



**NATIONAL
CONSERVATION
LANDS**

Plant Guide

Kasha-Katuwe Tent Rocks
National Monument

*This land, the plants, the hills and
mountains mean a lot to us.
It is home — full of peace and harmony.
At times it is dry, other times
there is rain and snow.
I belong to this place.*

*Donald Suina
Pueblo de Cochiti*

*Researched and written by
Carolyn Dodson
a New Mexico Wildflower Specialist
Illustrations by M'Lee Beazley*

Bureau of Land Management
Albuquerque District
Rio Puerco Field Office
100 Sun Ave., N.E.
Pan American Bldg., Suite 330
Albuquerque, NM 87109
505/761-8700
the Monument 505/331-6259
www.blm.gov/nm



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The Plants of Kasha-Katuwe Tent Rocks National Monument

The exquisite, multi-hued geological treasure known as Kasha-Katuwe Tent Rocks beckons visitors with its unique volcanic hoodoos, narrow canyons and high mesas.

Equally intriguing on a smaller scale are wildflowers, be they nestled in niches, crooks and crannies of the area's white cliffs ('Kasha Katuwe' in the native Keresan language) or sprinkled throughout the almost unworldly assemblage of volcanic ash and tuff deposits, cliffs and canyons.

Wildflowers in the dry, hot Tent Rocks environment can be sparse, but they can also ornament the landscape in the spring or after a good rain. Finding these small treasures can be as much of an adventure as scaling the fantastic heights of this special place.

Perhaps one of the first things you will notice is that many of the area's shrubs are gray, because of white hairs on leaves and stems. These hairs insulate the plant from loss of moisture. Below ground, their roots are many feet long, reaching down to the deep underground water table. On the other hand, wildflowers bloom and make seeds during the wet season. When the rains end, the plants dry up and disappear from sight. They are not seen again until the underground seeds spring up in the next rainy season.

Where you see flowers, you see insects. Flowers depend on insects to fertilize their seeds, and insects depend on flowers for food. If you look closely, you will see that each kind of flower attracts a certain kind of insect.

Bees commonly approach yellow or blue flowers, ones that provide a flat place to alight. After landing, dark lines on the petals lead the bee to the nectar. On the way to the tasty drink, pollen will rub off the body onto the flower and as the bee leaves, hairs on the body will pick up more pollen.

Butterflies and moths, with their long narrow tongues, can reach the nectar deep inside long narrow flowers. Butterflies, like bees, find these tubular flowers with their acute eyesight. If you are enjoying the shadowy landscape at dusk, you will see hawkmoths flit from flower to flower. Moths wait until

their predators go to roost before feeding, but by then the light is dim, so flowers attract moths by a sweet smell.

Hummingbirds also provide a pollination service for flowers. You see hummingbirds around bright red flowers the size and shape of their bills.

Shrubs



Three-leaf Sumac (*Rhus trilobata*) Sumac Family

Inconspicuous clusters of small yellow flowers bloom in April before leaves appear on this four-foot-shrub. By summer, the red berries have matured among the bright shiny leaves. Because these sticky, pea-sized berries taste of tart lemon and are used, with a generous heap of sugar, in a refreshing drink, the plant is sometimes called lemonade bush. In fall, the leaves turn a flaming red. Another common name, Skunkbush, reflects the unpleasant odor of the plant. *Trilobata*, meaning three-lobed, refers to the three-part leaves. Native Americans used the supple branches and bark for wicker baskets.



Shrub Live Oak (*Quercus turbinella*) Beech Family

A large, spreading shrub with thick stems, this oak has holly-like leaves with spine-tipped teeth. Live oaks keep their leaves throughout the winter, only dropping them when new leaves appear in the spring. The inconspicuous early spring flowers develop into typical acorns. Presence of acorns certainly identifies these shrubs, but you may not see very many acorns because birds and other wildlife find them delectable. Native Americans also ate the nutritious nuts, but first they had to boil them to remove the poisonous tannins.



Manzanita (*Arctostaphylos pungens*) Heather Family

This handsome three-foot-tall shrub with leathery evergreen leaves and smooth reddish-brown bark forms thickets on the mesa and in lower areas of the Monument. In early spring, clusters of small pink bell-shaped flowers bloom, and by summer shiny brown berries have replaced them. The fine hairs covering the leaves protect the surface from losing water to the dry air. Depending on the amount of rain during the previous year, the crop of manzanita berries may be lush or sparse. Prehistoric Indians ate the berries raw, cooked or dried. A jelly made from manzanita is delicious.



Apache Plume (*Fallugia paradoxa*) Rose Family

The abundant white flowers on the openly branched shrub are saucer-shaped and as large as apple blossoms. While new flowers are appearing, older flowers develop seed clusters with pink feathery tails like miniature war bonnets. The small leaves are divided into several narrow lobes. When covered with seed plumes, in late summer, this shrub is like a six-foot high powder-puff. The straight stems were used for arrow shafts. Apache plume is a favorite ornamental for xeric gardens, and you frequently see it planted along roadsides for erosion control. The plant is named for Fallugi, a 17th century Italian botanist.



Chamisa (*Ericameria nauseosa*) Aster Family

A bushy plant with slender stems and narrow leaves, chamisa appears nearly white because of the silvery hairs covering the foliage. It blooms late in the season, and when it does, it is covered with dense clusters of small flowers. These are rich yellow, turning the shrubs into golden spheres that are stunning in contrast to the surrounding red-orange tent formations. This large shrub is common in sandy areas. Also referred to as rub-

ber rabbitbrush because the plant tissue does contain rubber, although not in a quantity to extract economically.



Cholla (*Cylindropuntia imbricata*) Cactus Family

This is a five-foot-tall shrubby cactus, with long cylindrical stems divided into joints. Like all cacti, its stems are leafless but bear long sharp spines. In May, when it blossoms out with large magenta flowers, the cholla rivals a rose bush. After flowering, seeds ripen in fleshy yellow fruits at the stem tips.

The plant grows by adding new joints or branches annually. These joints are easily broken off the plant and hooked onto the fur of a passing animal or clothing of a human. Wherever they happen to fall to the ground, they start a new plant.



Banana Yucca (*Yucca baccata*) Agave Family

Broad lance-shaped leaves, stemming from the ground, enclose

clusters of large white flowers. The tips of the three-foot-long, stiff leaves are often twisted, with backward curving fibers on the margins. After the spring blooming, the flower stalk bears a cluster of large plump fruit, like a bunch of bananas. Native Americans of the Southwest enjoyed the juicy, succulent fruit raw, baked, or dried. In addition, they made textiles, baskets and cordage from yucca leaf fibers, and shampoo from the roots. *Baccata* means "pulpy or fleshy," descriptive of the fruit.

Wildflowers



White Prairie Clover (*Dalea candida*) Legume Family

Several foot-long stems rise from a common base. They terminate in an elongated green spike with a ring of crowded small white flowers. The long stamens are tipped with golden anthers. Below the ring of strongly scented flowers are the maturing seeds, and above it are the developing buds. The scanty leaves along the stems are divided into long narrow leaflets. White prairie clover is most common in sandy soil at cliff bases, blooming in summer. The Latin name commemorates Samuel Dale, an 18th century English botanist, who studied plants that explorers collected in Colonial America.



Evening Primrose (*Oenothera coronopifolia*) Evening Primrose Family

The bright white flowers on these low spreading plants have four heart-shaped petals joined at the base into a long tube. Stems are crowded with lacy leaves, and all plant parts are somewhat hairy. Flowers open in late afternoon and by the following morning are wilted. Therefore, on every plant, you will see faded pink flowers

from the previous day, and green buds for the next day, as well as open flowers. Evening primrose has a long tradition of medicinal use among Native Americans and is even now found in modern health food stores.



Yarrow (*Achillea millefolium*) Aster Family

The flat-topped clusters of white flower heads on upright, foot-tall stems are scattered throughout the sandy areas, blooming throughout the season.

If you lightly crush a gray-green leaf you will detect a medicinal odor, and, in fact, yarrow does have healing qualities. Achilles used yarrow on the wounds of his soldiers during the Trojan war. The Latin name for this plant bears his name. *Millefolium*, the other part of the Latin name, means "thousand leaves" describing the dissected, fern-like leaves. The local Spanish name, plumajillo, means "little feather" for the feather-like appearance of the leaves.



Clammyweed (*Polanisia dodecandra*) Caper Family

The bushy 18-inch-high plants have large clusters of white flowers with long red stamens. Some field guides refer to this plant as the redwhisker clammyweed because of the prominent stamens. The

botanical name, *dodecandra*, means twelve stamens. Sticky, strong-smelling glands are responsible for the clammy feel and disagreeable odor of the stems and the three-part leaves. The two-inch-long erect seedpods are attached beneath the flower clusters. Clammyweed is common on the sandy flats, blooming throughout the season.



Perky Sue (*Tetaneuris argentea*) Sunflower Family

The cheerful daisy-like floral head has a velvety yellow center surrounded by a dozen long, golden ray petals with notched tips. Several eight-inch-long leafless stems, each with one perky sue at the top, rise from a rosette of long narrow leaves. Stems and leaves glisten with a covering of silky hairs. Perky sue blooms profusely in early spring

and has another burst of flowering after the summer rains. *Tetaneuris* refers to the four prominent veins on each leaf. *Argentea* means "silvery," referring to the color of the leaves.



Western Wallflower (*Erysimum capitatum*) Mustard Family

Yellow flowers form a large round cluster at the top of the two-foot-long stem. Below the group of flowers, long slender seedpods branch out, appearing not very different from narrow leaves. The characteristic four petals tapering down to a thin strip at the base are typical of flowers in the mustard family. Linear, toothed leaves form a basal rosette and extend up along the erect stems. Western wallflowers emit

a strong sweet aroma. The English name comes from the habit of these plants of growing on old stone walls in Britain.



Golden Pea (*Thermopsis montanus*) Legume Family

Bright yellow flowers are clustered at the tops of leafy foot-tall stems. The sweetpea-like flowers bloom in spring and are followed by seeds in erect, hairy 'pea pods.' A mass of golden peas at a cliff base contrasts brilliantly with the pink-ocher wall. *Thermopsis* means lupine-like and indeed it does resemble lupine, except for flower color and number of leaflets. Lupine flowers can be blue, pink or white, but never yellow. Furthermore, lupine leaves are divided into five or more leaflets while golden pea leaves have only three leaflets.

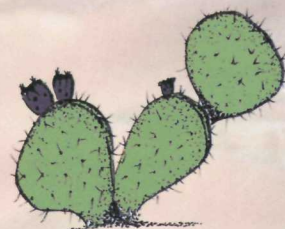
Further, lupine leaves are divided into five or more leaflets while golden pea leaves have only three leaflets.



Threadleaf Groundsel (*Senecio flaccidus*) Aster Family

This two-foot tall, open, bushy plant is covered with a dense mat of woolly white hairs. The grayish leaves along the stem are dissected into thread-like segments. Floral heads, with yellow, twisted ray petals are in flat-topped clusters. This groundsel is common where the sandy soil

catches moisture at cliff bases and blooms in late summer and early fall. The Latin name *Senecio* is related to the word for "old man," because in fall the flower head, with its covering of white cottony seeds, resembles an old man's head.



Prickly Pear (*Opuntia* spp.) Cactus Family

Clusters of round, flat pads are common in sunny areas. You can see several species of prickly pear cacti in the Monument. They differ by size of pads, density of spines on

the pads, and, in the spring flower season, by color of flower, which can be red, orange or yellow. Native Americans ate the sweet, juicy fruits that ripen in the summer. The pads are also edible, especially diced and fried with scrambled eggs, but, of course, only after the spines are removed. During the summer rainy season, water is stored in the plump pads. As water is used up, the pads become thinner.



Hairy Goldenaster (*Heterotheca villosa*) Aster Family

This foot-high leafy, bushy plant is often overlooked most of the year, but in late summer, it becomes a golden flower-covered sphere. Leaves are narrow and somewhat twisted, with pointed tips. The name *villosa*, meaning hairy, is well chosen for this hairy plant. Each 'flower' is like a yellow aster, and like an aster,

what appears to be one flower is a composite of many small flowers. The center disk is composed of dozens of tiny flowers, each with sepals, petals, stamens, and pistil.



James' Beardtongue (*Penstemon jamesii*) Snapdragon Family

The plump lavender flowers along one side of the foot-long stems resemble snapdragons. And like snapdragons, each flower has an upper lip and lower lip. Inside the upper lip you can see four stamens, the pollen producers. The lower lip spreads out to form a landing platform for visiting insects. After landing, the insects follow the purple lines, called guidelines, that lead them to the

nectar supply. A fifth stamen, covered with long hairs, lies along the lower lip like a bearded tongue. James' beardtongue is an early spring bloomer in sandy areas.



Pale Trumpets (*Ipomopsis longiflora*) Phlox Family

The most delicate of the Tent Rock wildflowers, these exceptionally long, narrow flowers seem out of place in the stark landscape. The thin, lavender floral tube flares out into a star pattern of five pointed lobes, the

reason this is also named "starflower." The spindly plant is erect, with two-foot-long branching stems and thread-like leaves. Pale trumpets grow in profusion in the lower, sandy areas of the Monument, blooming throughout the summer. Hummingbird moths locate the flowers at night by the sweet fragrance and with their long slender tongues they reach the nectar deep inside the flowers.



Desert Four O'clock (*Mirabilis multiflora*) Four O'clock Family

An abundance of large purple flowers with long curved stamens adorns this 18-inch-high spreading, bushy plant. The dark green, leathery leaves are heartshaped. But to appreciate

the colorful effect, you have to see it in early morning or late afternoon, probably after about four o'clock. During the middle of the day, the flowers are closed.

The lush plant is common in piñon-juniper woodlands throughout the season. *Mirabilis* is Latin for "marvelous;" *multiflora* means "many-flowered." Desert four o'clock was extensively used in Native American medicine.



Scarlet Gilia (*Ipomopsis aggregata*) Phlox Family

Brilliant red flowers hang down along the length of the two-foot-long erect stem. The trumpet-shaped flowers flare out into five sharply pointed lobes. Leaves along the lower part of the stem are gray and finely divided into narrow sections. A skunky odor emitted by sticky glands on the stems and leaves repels plant-eating insects. A biennial, scarlet gilia is a low mound of gray leaves in the first year; the next year

the tall flowering stalk rises. The nectar of these red flowers provides Rufous Hummingbirds with the high energy nourishment they need for their long migration travels.



Indian Paintbrush (*Castilleja* sp.) Snapdragon Family

Stunning flame-colored leaves on the upper part of the foot-tall plant enclose inconspicuous green flowers. You see only the flower tip projecting beyond the red. The bright red leaves on the top half of the plant attract hummingbird pollinators. Only the lower green leaves manufacture food through photosynthesis, but they do not make enough sugar to sustain the plant, which augments its resources by taking nutrients from nearby plants through root connections. Botanists term Indian paintbrush a 'hemi-parasite.' Domingo Castillejo was an 18th century botanist.

Enjoy your day at Kasha-Katuwe Tent Rocks National Monument!