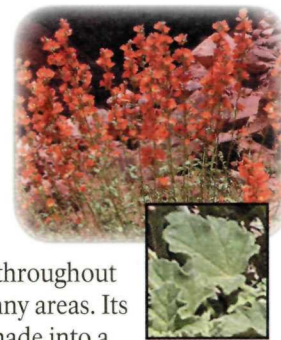


### Smallflower globemallow

*Sphaeralcea parvifolia* – Malvaceae

Perennial forb, whitish green and hairy. Leaves fan-shaped, lobed, coarsely toothed. Orange 5-petaled flowers with yellow centers; June to August.



© Al Schneider (both)

Globemallow, widespread throughout the West, thrives in dry, sunny areas. Its leaves and flowers can be made into a tea to promote calmness. The hairs on the foliage can irritate the skin and eyes of livestock, giving rise to another common name, sore-eye poppy.

### Cliffrose

*Purshia stansburiana* – Rosaceae

Evergreen shrub to 8 ft / 2.5 m tall with shaggy bark. Leaves wedge-shaped, lobed, and curled under at the end. Flowers cream-colored with 5 petals. Fruits sport 4 to 10 feathery plumes.



© Lisa Kearsley

Cliffrose leaves are bitter tasting, leading to the name quinine-bush; yet, many animals browse on it. The branches were fashioned into arrow shafts and the shaggy bark lined Navajo and Hopi cradleboards.

### Indian ricegrass

*Achnatherum hymenoides* – Poaceae

Perennial bunchgrass with narrow leaves as long as the stem. Large seeds at the ends of slender, openly branched stalks; May to August.



© Kristin Huisinga

The large seeds at the ends of the clumped grasses give them a lacy appearance. The seeds, easy to harvest, are very nutritious. Native Americans roasted them to make into mush, cereal, or bread. Mammals and birds also eat, and sometimes cache, the seeds.

### Threadleaf snakeweed

*Gutierrezia microcephala* – Asteraceae

Small perennial shrub with many slender, erect, yellow-green branches and small, narrow leaves. Produces many small, yellow flowers June to October. Like the larger rabbitbrush, this common plant is prominent in the late summer and fall when it is covered by yellow flowers. Shepherders applied a poultice of snakeweed to treat snakebit sheep.



© Al Schneider

Reach a switchback turning to the right and start down "Heartbreak Hill."

### Utah juniper

*Juniperus osteosperma* – Cupressaceae

Short tree to 20 ft / 6 m tall. Crooked, twisted trunks with shaggy bark. Needles are scale-like. A blue-gray wax coats the berry-like female cones.



© Lisa Kearsley (both)

Pinyon-juniper forests cover millions of acres in the Southwest. Birds and coyotes eat the berries and deposit the encased seed in their droppings, helping disperse the plant. Junipers provide fuel, building material, medicine, food, and ceremonial items for Native Americans.

### Fremont barberry

*Mahonia fremontii* – Berberidaceae

Evergreen shrub to 10 ft / 3 m tall. Alternate leaves with thick, gray-green leaflets have spiny tips. Yellow 6-petaled flowers appear April to July, followed by bluish-black berries.



© Al Schneider

The sharp-tipped leaves deliver a painful poke. Birds and small mammals consume the berries. The stems and roots produce a brilliant, yellow dye used to color cloth, buckskins, and baskets.

### Banana yucca

*Yucca baccata* – Agavaceae

Succulent perennial with a rosette of long, wide, spine-tipped leaves with fibers coming off the leaf edges. Flower stalks with large cream-colored flowers in spring, followed by fleshy, banana-shaped capsules.



© Al Schneider

Yucca flowers can be pollinated only by yucca moths, which lay their eggs in the flowers. Moth larvae eat only yucca seeds. Thus, each species is dependent upon the other. Yucca provided Native Americans with food, fiber, and shampoo.

### Arizona thistle

*Cirsium arizonicum* – Asteraceae

Perennial forb with one to several erect stems. Sharp spines cover the leaves and base of flower. Purple flower heads emerge from spiny bracts May to October.



© James Andie

More than a dozen species of thistle occur in Arizona. This species is native, but others are exotic and highly invasive. Hummingbirds and many insects feed on the flower's nectar.

### Douglas fir

*Pseudotsuga menziesii* – Pinaceae

Evergreen tree to 130 ft / 40 m tall, tapering to a point, with drooping branches. Short, flat needles. Small cones hang down from branches with bracts protruding between cone scales.



© Lee Dittmann

In spite of its name, Douglas fir is not a true fir—cones on firs are upright and disintegrate before falling. Look for the cones with bracts or "mouse tails" between the cone's scales. Douglas firs usually grow at higher elevations. Because of the cooler, north-facing slope, they thrive here.

Watch for a small spring (damp area) on your right, Kolb Seep, with a switchback to the left.

### Cliff fendlerbush

*Fendlera rupicola* – Hydrangeaceae

Shrub to 7 ft / 2 m tall with straight, vertical stems and shaggy bark. Leaves paired, narrow, thick, and slightly rolled under. Flowers cover the plant May to July with 4 separated white petals, followed by small, acorn-like fruits.



© Al Schneider

These shrubs grow in rocky areas; the Latin name *rupicola* means

rock-dweller. A profusion of sweet-smelling flowers attracts attention in spring. Native peoples used the straight, smooth branches to make arrows, planting sticks, and awls.



© Lisa Kearsley

Halfway between Kolb Seep and the second tunnel, you may spy a prickly pear growing from a crack in the rock wall above you. Can you find it?

### Prickly pear

*Opuntia* sp. – Cactaceae

Cactus with flat pads covered with spines. Large yellow, pink, or red flowers emerge May to June. Oval, red, fleshy fruits, called tunas, ripen below the flowers. Many species of prickly pear thrive from rim to river—some with long spines, others with no spines; pad size and color varies. At the base of each group of spines are tiny tan spines termed glochids. No matter the size of the spines, they hurt, so keep your distance. People eat the tunas raw or cooked into jellies, and the calcium-rich young pads are eaten raw, boiled, or fried. Many animals from ground squirrels to coyotes also enjoy the fruits.



© Lisa Kearsley

### Pallid hoptree

*Ptelea trifoliata* – Rutaceae

Tree to 20 ft / 6 m tall with white stems. Alternate leaves in groups of 3 leaflets. Bunches of greenish white flowers with 4 petals; May to June. Seeds, surrounded by a papery wing, hang down.



© Lisa Kearsley

If you hold the leaves up to the light, you will see hundreds of tiny spots, glands filled with oily compounds that emit a citrus odor when crushed. Ancient hunters made a poison for arrows from the leaves.

While walking down the switchbacks below the second tunnel, watch for a century plant perched on the cliff. Please observe it from the trail.

### Century plant

*Agave utahensis* – Agavaceae

A succulent perennial; a rosette of thick, spine-tipped leaves with sharp teeth along leaf edges. Flower stalk grows in a few weeks to 20 ft / 6 m tall; covered with yellow flowers May to July.



© Lisa Kearsley

The century plant grows for 20 to 40 years. One spring it will rapidly sprout a huge flowering stalk, after which the entire plant dies. The agave has provided Native Americans food, fiber, and medicine for centuries.

### Beechleaf frangula

*Frangula betulifolia* – Rutaceae

Deciduous shrub to 8 ft / 2.5 m tall. Large, prominently veined leaves with tiny teeth along the edge. Small greenish flowers May to June. Round berries turn purple in the fall.



© Lee Dittmann

The most noticeable feature about this plant is the large, veined leaves, shiny on top, pale and fuzzy beneath. Wildlife relish the berries.

Continue down the switchbacks through the Coconino Sandstone cliffs.

### Skunkbush

*Rhus trilobata* – Anacardiaceae

Deciduous shrub with opposite leaves divided into three lobed leaflets. Dense, spike-like, yellowish flowers April to June, followed by red fruit. Flowers appear before the leaves emerge in spring. Glandular hairs cover the sticky berries, giving them a sweet-sour taste. Pioneers made the berries into a tart, tasty lemonade bestowing another name: lemonade-berry.



© Robert Sivinski

### Creeping barberry

*Mahonia repens* – Berberidaceae

Low, creeping evergreen shrub. Dark green, leathery, holly-like leaves with spiny teeth along the edge. Yellow flowers with 6 petals April to June, followed by blue berries.



© Lisa Kearsley

Barberry's stems trail along the ground. Many mammals and birds feed on the berries, although people may find them dry and tasteless. The Navajo use the plant to treat scorpion bites. Steep the roots for a laxative tea.

At the bottom of the Coconino switchbacks, traverse along the Hermit shale slope.

### Miner's lettuce

*Claytonia perfoliata* – Portulacaceae

Annual forb with many spreading stems. Two types of leaves—long, narrow leaves near the ground, and fleshy, circular leaves surrounding small, white flowers. The circular, flower-bearing leaves make it easy to identify miner's lettuce. Both Native Americans and pioneers used these leaves to make salads.



© Tom Chester

### Munz's bedstraw

*Galium munzii* – Rubiaceae

Perennial shrub with slender, wiry branches, to 2 ft / 60 cm tall. Leaves attach to branches in groups of four. Small, red flowers emerge June to October. Look for the groups of four leaves radiating from the stem. This species of bedstraw, found only in Arizona, prefers rocky habitats.



© Tom Chester (both)

### Fragrant ash

*Fraxinus cuspidata* – Oleaceae

Small tree to 23 ft / 7 m tall with gray, fissured trunk. Opposite leaves in groups of 3 to 7 narrow leaflets. Loose, white flowers with long petals droop from stems April to June and mature into winged seeds.



© Robert Sivinski

This ash differs from others in that it has fragrant flowers with petals. Used by Native Americans to make bows and arrow shafts.

### Navajo fleabane

*Erigeron concinnus* – Asteraceae

Perennial forb. Leaves alternate, hairy, long, and narrow. Seed heads also covered with hairs. Flowers April to October; many white petals with a large yellow center.



© Al Schneider

The fine hairs give this fleabane a fuzzy appearance. The word fleabane derives from using this plant to keep away fleas and other insects.

Congratulations on reaching Mile-and-a-Half Resthouse. After resting, while hiking back to the rim, revisit the plants you learned. Can you find any plants not listed in this guide?

Images by Lee Dittmann used with permission from nazflora.org. Images by Al Schneider used with permission from swcoloradowildflowers.com

## What's That Plant?

A guide for identifying plants along the Bright Angel Trail from the rim to Mile-and-a-Half Resthouse



## Learn the plants while walking the trail.



Cliffrose

Starting at the trailhead, this guide points out some of the plants you pass. Trail descriptions (written in red) help you find where different plants first start to appear along the trail. You will not only identify common plants, but also discover interesting facts about each. Record how many plants you can find by checking off the box next to each name.

Plants are ordered according to the first time they appear along the trail. Since they are close enough to see from the trail, please do not walk off the trail while examining them. Can you recognize the same plants in different locations along the trail?

Start at the trailhead for the Bright Angel Trail on the canyon rim near the rock corral for the mules, 300 feet / 100 meters west of Kolb Studio.

A note about terminology: All plant species are native to Grand Canyon unless they are listed as exotic. Annual indicates the plant lives for only one year, while perennial means it lives for more than a year. A forb is a plant, other than a grass, that does not have a woody stem.

A number of plants grow near the trailhead. See how many you can identify while enjoying the magnificent canyon view.

### Pinyon pine

*Pinus edulis* – Pinaceae

Short tree to 45 ft / 15 m tall, often with a crooked trunk and furrowed dark bark. Two short, curved needles per bundle. Small cones produce large seeds each fall.

Pinyon pines are one of the most common trees along the South Rim. Their cones produce large, tasty pinyon nuts. The nuts were an important food for Native Americans. Jays cache the seeds in the ground to retrieve when food is scarce. Seeds not eaten may germinate in the spring, helping propagate the tree.

### Gooseberry / Currant

*Ribes* sp. – Saxifragaceae

Perennial shrub to 6 ft / 2 m tall. Leaves alternate with 3 to 5 lobes and prominent veins. White tubular flowers appear May to July, followed by red berries.

Two species grow along the trail. Gooseberry has spines, while currant does not. The berries are edible, but please leave them for other animals. Birds love the berries. Mule deer and other wildlife browse the foliage.

### Hoary-tansyaster

*Machaeranthera canescens* – Asteraceae

Forb with many branches. Leaves alternate and very narrow, often with bristly tips. Flowers brilliantly blue or purple with many petals surrounding a yellow center; July to November.

These eye-catching flowers add color along the trail well into the fall. They grow in areas that have been disturbed or have poor soils. The Navajo use this plant to help with nasal congestion and stomach aches.

### Cheatgrass

*Bromus tectorum* – Poaceae

Exotic annual grass with drooping seed heads. Plants solitary or in clumps. Flowers and dries in May.

Cheatgrass invaded the United States in the late 1800s. It spread quickly, outcompeting native grasses and crops, “cheating” farmers and wildlife alike from more edible and nutritious native grasses. Cheatgrass often moves into areas damaged by overgrazing or other disturbances. Seed heads stick in hikers’ socks, which helps disperse the seeds.

### Gambel oak

*Quercus gambelii* – Fagaceae

Tree to 15 ft / 5 m tall with gray, furrowed bark. Deeply lobed leaves are smooth above and hairy below. Large acorns mature in fall.

Oak provides shelter and food for many animals. Early cultures ground the acorn into meal. Its hard wood is important for tool-making, and its bark produces a tan dye for Navajo rugs. While the leaves turn brown in fall, many do not drop off until spring when new leaves replace them.

### Smooth spreading four o'clock

*Mirabilis oxybaphoides* – Nyctaginaceae

Perennial forb. Leaves opposite, heart-shaped, with wavy margins. Stems many-branched and hairy. Purple funnel-shaped flowers with 3 lobes; August to September.

You will see this plant trailing along the ground. The genus name, *Mirabilis*, translates as “wonderful,” for its large, beautiful flowers. Native Americans used the root to treat colic, rheumatism, and infections.

50 feet / 15 meters down the trail is a geology sign introducing the Kaibab Formation. The next two shrubs surround it.

### Mountain snowberry

*Symphoricarpos oreophilus* – Caprifoliaceae

Deciduous shrub to 5 ft / 1.5 m tall with smooth stems. Leaves opposite and oval. Tubular pink flowers with 5 lobes bloom May to August; followed by white berries.

Snowberry reproduces both by seed and by vegetative clones. Birds and small mammals eat the brilliantly white berries. The Havasupai fashion cradleboards from the stems.

### Utah serviceberry

*Amelanchier utahensis* – Rosaceae

Shrub to 15 ft / 5 m tall. Leaves alternate, oval, hairy, and toothed. White flowers with 5 petals appear April to May. Orange fruits ripen in summer.

The foliage and berries are an important food for a variety of wildlife. People have long eaten the berries. The name originates from the early settlers who placed serviceberry flowers on grave sites.

### Rubber rabbitbrush

*Ericameria nauseosa* – Asteraceae

Perennial shrub with felt-like, greyish-green upright branches. Leaves alternate and narrow. Yellow flowers cover the plant July to October.

Rabbitbrush becomes one of the most noticeable shrubs in late summer and fall when it is covered with dense masses of tiny yellow flowers. Rabbits browse and hide in the plant. The Hopi use the branches in basket making.

### California brickellbush

*Brickellia californica* – Asteraceae

Many-branched, aromatic shrub to 3 ft / 1 m tall. Leaves triangular, toothed, and covered with fine hairs. Flowers cylindrical, white to yellowish, and clustered; July to October.

Brickellbush, while quite common, is often overlooked since its features are not distinctive. Can you find it along the trail? This drought-tolerant bush grows best in rocky areas with full sun.

### Penstemon

*Penstemon* sp. – Scrophulariaceae

Perennial forb of tall stalks with flowers along upper portion; March to September. Leaves opposite, triangular shaped, sometimes clasping the stem.

Many penstemon species inhabit Grand Canyon. Eaton’s firecracker (left) with beautiful narrow, red flowers is most abundant at higher elevations. Palmer’s penstemon (right) exhibits showy pink flowers. Look for it farther down the trail.

### White sagebrush

*Artemisia ludoviciana* – Asteraceae

Perennial forb with foliage that becomes gray-green as it matures. Leaves deeply divided into 3–5 lobes. Many yellow flowers arranged in a branched stalk; August to October.

White sagebrush, found throughout Grand Canyon, is one of the most widely distributed species in western North America. Native Americans boil it into a tea, burn it as an incense, and crush it to use as a poultice.

Walk down to the Bright Angel Trail information sign at the first switchback.

### Squirreltail

*Elymus elymoides* – Poaceae

Perennial bunchgrass with leaves that are often folded or rolled down. Flowers March to September with loose and open seed heads.

The seed heads look like a bushy squirrel’s tail or bottle brush. It survives when exposed to fire and competes well against invasive cheatgrass. Deer and elk graze the grass. Its seeds are eaten by rodents and rabbits.

### Grand Canyon rockdaisy

*Perilyte congesta* – Asteraceae

Perennial shrub to 1 ft / 30 cm tall with many slender stems. Leaves alternate, mostly along stem, oval, and sometimes toothed. Tiny yellow flowers June to October. This small, rounded plant has a delicate appearance. Watch for it growing out of cracks in the rock wall above the trail. Restricted almost exclusively to Grand Canyon, it thrives from river to rim.

Pass beneath the tunnel blasted through the Kaibab Limestone cliff.

### Deer goldenbush

*Ericameria arizonica* – Asteraceae

Perennial shrub to 1.5 ft / 50 cm tall. Reddish-tan stems with long, narrow leaves. Yellow flowers with a big, fluffy center and 5 narrow petals appear in the fall.

Like Grand Canyon rockdaisy, these plants occur mainly along the rock wall above the trail. They also are endemic to (i.e. found only at) Grand Canyon. Botanists recently designated this plant as a new species.

### Big sagebrush

*Artemisia tridentata* – Asteraceae

Perennial shrub with thick, crooked trunk and silvery gray-green foliage. Leaves wedge-shaped and hairy with 3 rounded lobes at the tip. Flower stalks emerge from ends of branches; August to September.

One of the most widely distributed shrubs in the southwestern United States, sagebrush is known for its pungent odor. Native Americans and pioneers depended upon it for medicine, fuel, and food.

### Gray aster

*Eurybia glauca* – Asteraceae

Perennial forb with alternate, pale green leaves. Violet-tinged white flowers with narrow petals and a yellow center; July to September. The showy flowers highlight the large, dense patches of gray aster. A powdery coating makes the firm, wide leaves appear grayish-green.

### Muttongrass

*Poa fendleriana* – Poaceae

Perennial bunchgrass. Leaves mainly come from the base of plant with sheaths closed along the lower third of the leaf. Branched seed heads taper towards the top; April–August.

A widespread grass often found in open woodlands and grasslands, this is an important food source for elk, deer, and bighorn sheep. The Havasupai grind and eat the seeds or boil them to make dumplings.

Continue to the sign warning of the danger of hiking to the river and back in one day.

### Fernbush

*Chamaebatiaria millefolium* – Rosaceae

Shrub to 5 ft / 1.5 m tall. Leaves alternate and fernlike. White flowers with 5 petals; July to November. Fernbush is easily identified by its sticky leaves, which look like miniature ferns. The flowers, showy and sweet-smelling, attract bees. Deer and sheep browse the foliage.

### Green ephedra

*Ephedra viridis* – Ephedraceae

Perennial shrub with many upright, green, jointed stems. Look closely at the stems for the small, scale-like leaves and in the spring, for small yellow-green cones.

Ephedra looks like a branched, upside-down broom, its leaves hardly noticeable. Related to pines and juniper, it bears cones instead of flowers. Ephedra produce caffeine and ephedrine and have been used as decongestants to relieve colds and asthma. The stems are steeped to make tea.