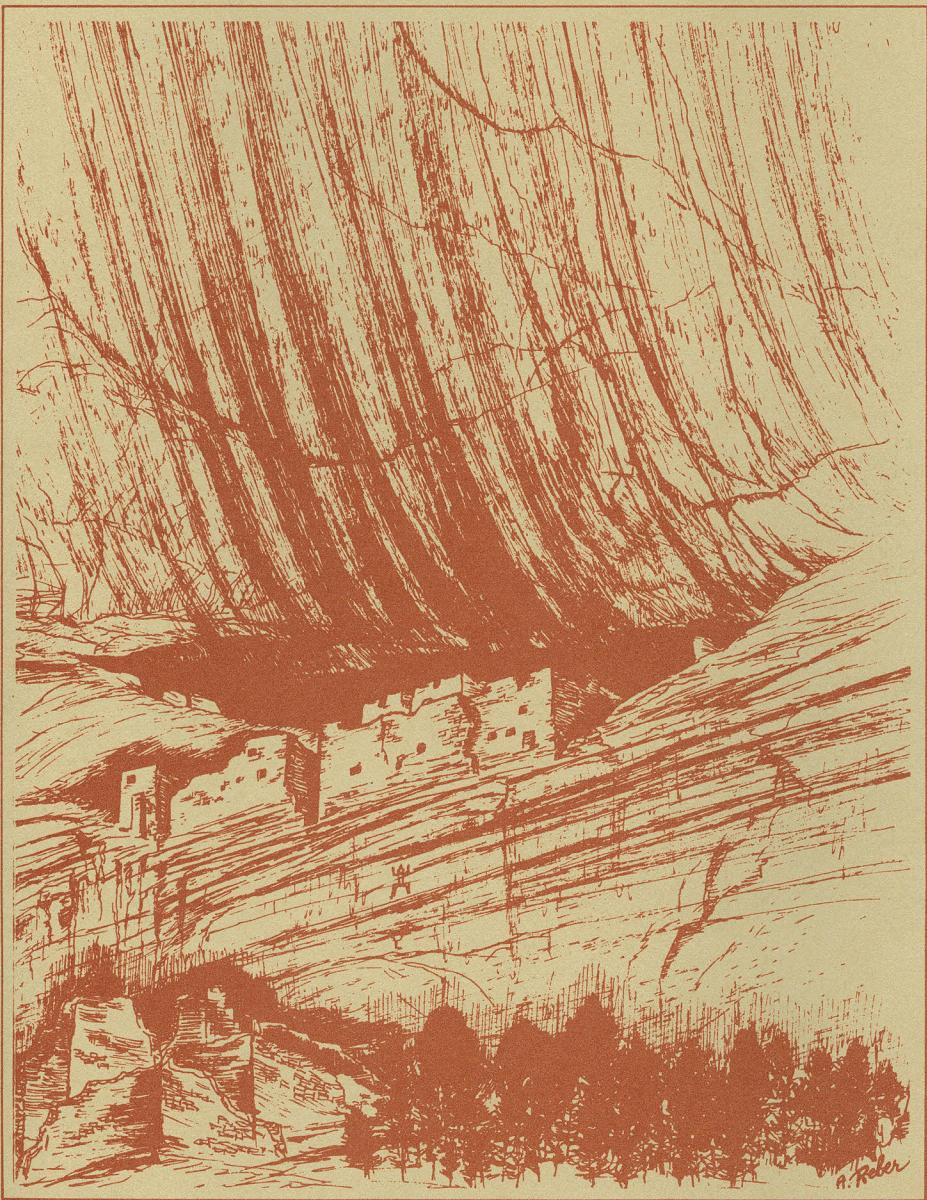


# White House Trail Guide



# Canyon de Chelly National Monument



The National Park Service welcomes you to Canyon de Chelly National Monument and hopes you will have a safe and pleasant hike to White House Ruin, a round trip of  $2\frac{1}{2}$  mi. (4 km.).

Canyon de Chelly was established as a national monument by an act of the United States government on April 1, 1931. The monument is unique in the National Park system because the legal title to the 130 square miles (216.6 sq. km.) is vested in the Navajo tribe and not the National Park Service. Hiking in the canyon without an authorized guide is thus limited to the White House Trail.



Although hikers are welcome down at the White House Ruin, respect should be exercised toward the people who live in the canyon. Please do not wander off the trail or away from the White House Ruin, and treat the area in the same manner as any other national park or monument by not collecting or disturbing the features, and being careful to dispose of your litter in the proper places. It is customary and essential to ask permission of the Navajos before photographing them or their personal property. A nominal fee is paid as a matter of courtesy. These regulations are for the protection of the many ruins in the canyon, and in respect for the privacy of the Navajo Indians who live in the canyon.

# White House Trail



The trailhead for the walk down to White House Ruin is located about 150 yd. (137 m.) down from the parking lot toward the rim to your right as you stand facing the canyon.

The trail itself is obvious, but there are no numbered posts marking certain spots as in most trail guides. Instead of concentrating on one plant or one rock in isolation, the relationship between plants and geology and people past and present will be pointed out. It will soon become evident that Canyon de Chelly as it exists today, with its unique combination of physical features and life forms, is the result of ever-evolving relationships.

Please . . .

*Use extreme caution when approaching the canyon rim and all throughout your hike. Pets are not allowed on the trail. In the summer it is advisable to wear a hat, and carrying some drinking water is strongly encouraged. Do not drink the water that may be flowing in the wash.*

*As you walk down toward the canyon floor you will be passing through the rim and talus slope plant community. Notice the diversity of plant life. Notice, too, the similar ways plants have adapted to life in this environment.*

## Rim and Talus Slope Community



Piñon Pine



Juniper

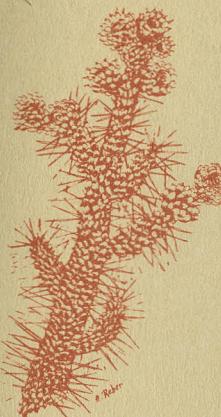


Scrub  
Oak

The trail from the rim to White House Ruin winds through a plant community marked by its ability to adapt to climatic extremes of the high desert. Both the piñon pine and the juniper, the most common trees in this area, have evolved ways to survive where there is little rainfall, poor and shallow soil, and extremes of heat and cold. Specialized leaves (short needles on the pine, scale-like leaves on the juniper) and a very slow growth rate conserve water and minimize food requirements. The scrub oak, too, has small and leathery leaves making it look more like a holly than like its oak cousins in wetter climates.

The cactus family is, of course, especially adapted to desert living, but few cacti can take the low temperatures (sometimes below 0°F) of desert winters. The Opuntia member of the cactus family with its representatives the cholla and prickly pear is a notable exception. Both the cholla and prickly pear have simply dispensed with leaves altogether and instead store water and carry on photosynthesis (food manufacture) through their jointed green stems, the stems of the cholla being rounded and those of the prickly pear being flattened pads.

The slopes leading down to White House, in addition to being dotted with cacti, are covered with two similar looking bushy green plants—snakeweed (bright green) and rabbitbrush (blue-green). The abundance of both is indication that the land has been overgrazed, for rabbitbrush and snakeweed tend to take over when the grass has been grazed off. Neither is very palatable to livestock. In fact snakeweed is sometimes called turpentine weed because it contains so much resin.



Cholla



Prickly Pear



Snakeweed



Rabbitbrush

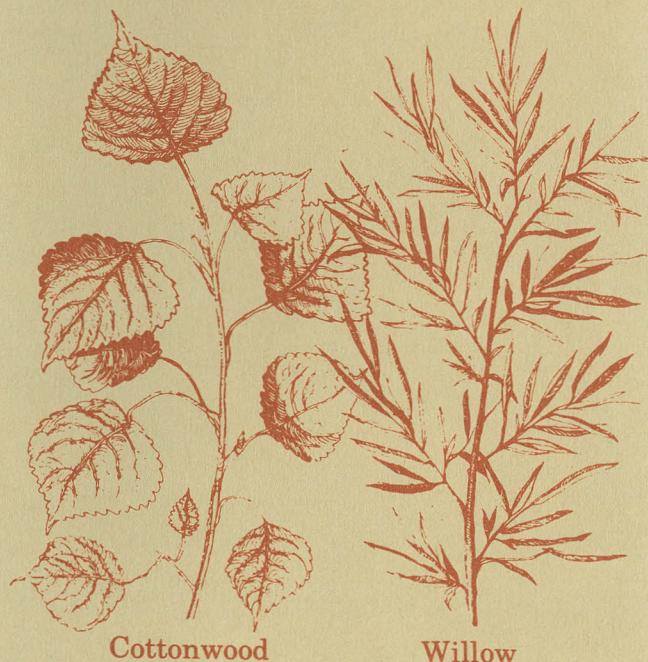
After you pass the tunnel at the base of White House trail you will encounter another plant community that has developed different adaptations.

## Bottomlands Community

The canyon bottom is home for a totally different plant community, the phreatophytes (water hogs). These plants depend upon a relatively high water table, for they soak up huge amounts of water.

The cottonwood, native to the area, is the most conspicuous tree on the canyon floor. Bright refreshing green in the spring and summer and golden in October, its ample shade is a most welcome sight to the hot desert traveler. Cottonwood gets its name from the fluffy cotton-like covering on the seeds of the female trees. Although cottonwoods were present prehistorically, they have increased because of plantings around some of the ruins (White House in 1942) to prevent further erosion and destruction of the Anasazi dwellings.

A close relative of the cottonwood, the willow, is also a native phreatophyte. Its supple twigs are used in basketry and its leaves are a food source

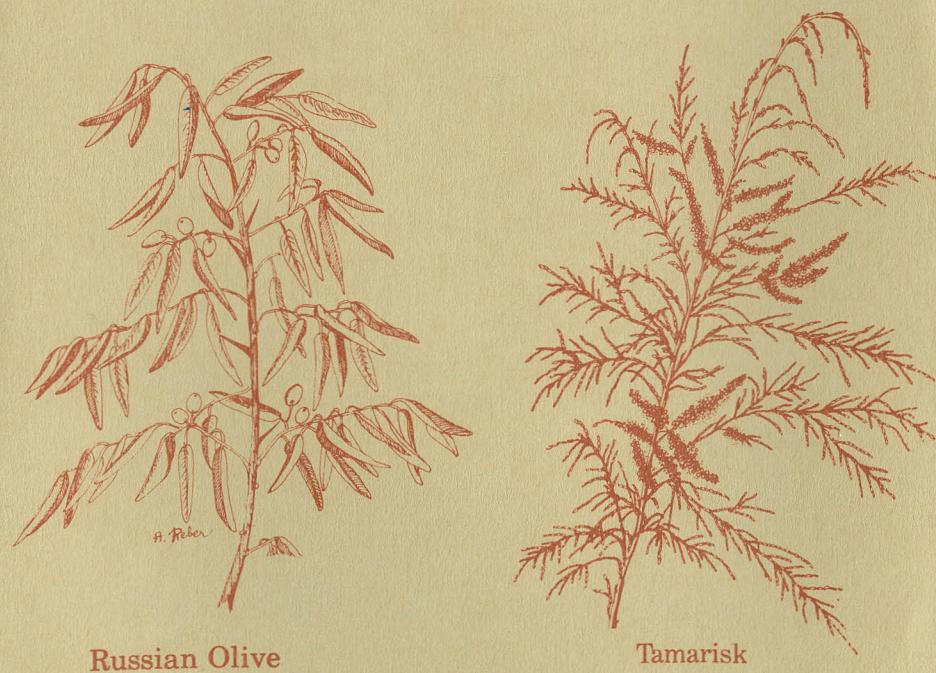


Cottonwood

Willow

for domestic and wild animals. The most common canyon willow is a shrub seldom over 6 to 8 feet (1.8 to 2.4 meters) tall, called the coyote willow.

The other two most conspicuous members of the canyon community, Russian olive and tamarisk, are not native to the Southwest. Tamarisk was introduced by the Department of Agriculture as an erosion control in the early 1900's. Russian olive was originally brought to North America as an ornamental tree. Both of these exotics have adapted themselves so well that they have become pests. Neither is palatable to livestock and both form impassable thickets that sometimes prevent animals from reaching valuable water sources, and sometimes even soak up all the water in washes and irrigation ditches. Lovely but a nuisance, the tamarisk and Russian olive have upset the natural balance of the desert plant community.



Russian Olive

Tamarisk

# White House Ruin



Kini-na-a-kai (White House or Casa Blanca) was "discovered" by Lt. J.H. Simpson during his 1848 expedition through Canyon de Chelly. The name is derived from the white plastered walls on the upper portion of the ruin. It is estimated that both levels of the ruin contained as many as 80 rooms, but due to stream erosion, evidence of only 60 rooms and 4 kivas remains today. Marks on the cliff wall indicate that at one time rooms at the lower level were built up to within 4 feet of the upper ruin which now contains 10 rooms. A maximum population of 10 to 12 families or from 50 to 60 people may have lived at White House. White House was built and occupied by the Anasazi (the prehistoric Indians who inhabited the Four Corners area) between approximately A.D. 1040 and 1275.

The Anasazi planted fields near their homes much as the Navajo do today. Some archeologists speculate that as the Anasazi population grew, homes were built up on the cliffs to conserve space on the canyon floor for farming. Anasazi farmers grew crops of corn, squash and beans and gathered various fruits and nuts from the wild plants of the canyon floor and rim. They also hunted to supple-

ment their diet with venison and rabbit. While the Anasazi did not have domesticated livestock such as sheep, horses and cattle as the Navajo now have, they did have turkeys and dogs.

The stone wall, posts and wire jetties were built by the National Park Service to protect the ruins from flood waters. The fence around White House Ruin has been installed to protect the fragile walls from wear and tear and from acts of vandalism.

*Take a close look at the ruin. Beginning with the end on your left as you face it, you will note several interesting features of Anasazi building tradition.*

The semi-circular room at the far west end of White House is called a kiva. What you see is only part of the room which has been stabilized (in 1967) and then partially replastered. The original room was circular and had a log and mud roof. The only openings were a ventilator shaft at the floor level and a rectangular opening in the center of the roof, which was used as an entranceway. Kiva is a Hopi word that simply means "room." Modern Pueblo Indian groups use a structure similar to this one to prepare for and conduct certain religious ceremonies. Since the Pueblo Indians of today are descendants of the Anasazi, it is believed that this kiva was used prehistorically in a similar manner.



Frequently archeologists will use Dendrochronology, or tree ring dating, to obtain information for the age of a ruin. This is done by taking a small core sample from a timber in the ruin. It is often possible to determine not only the year in which a certain timber was cut, but to date the cutting time within three or four months.

Dendrochronology is based on the fact that each year trees put on a new growth layer and the amount of growth depends on weather conditions, especially the amount of precipitation. In the deserts of the Southwest rainfall varies from year to year, and the narrow and wide growth rings formed in response create distinctive patterns which are characteristic of a particular set of years.

When a core sample is taken from an Anasazi structure, the ring pattern on the tree core sample is matched against a master chart to determine when the tree was cut. Tree-ring dates from White House indicate that the first building activity took place about A.D. 1060 and that there was some building as late as A.D. 1275.

On the face of the cliffs around White House are several pictographs. Some of these prehistoric paintings are at least 35 ft. (10.5 m.) above the existing ground level and would have necessitated a long sturdy ladder to reach them.

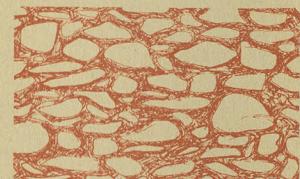
Although we aren't sure what most of the figures and designs mean, they may have been a combination of ceremonial ritual, artistic expression, communication of messages and even idle graffiti.

Finely ground minerals mixed with a binder of water, egg white, urine or seed oil made up the

paints, and fingers or yucca leaves served as brushes. Petroglyphs were made by using rocks in a hammer and chisel fashion.

If you have visited other major Anasazi sites in the Southwest, such as Mesa Verde or Chaco Canyon, you probably learned that these areas had very fine masonry. The prehistoric Pueblo masons at Canyon de Chelly were good craftsmen, but did not produce as distinctive a masonry style. The stonework here, called Kayenta, is cruder than that found at either Mesa Verde or Chaco Canyon. In some areas of the canyon, though, we find evidence of building techniques similar to those found in other areas. For example, these walls at White House exhibit what many archeologists would call a Chacoan style. Notice how well the stones had been shaped and carefully laid in place with neat small stones called "spalls" inserted in the mud mortar. These spalls add strength to the wall by minimizing the shrinkage of the mortar. They are particularly common in ruins at Chaco Canyon.

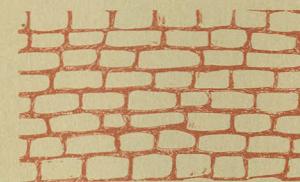
*Before your trip back out of the canyon, take time to observe the Navajo farm at the foot of the trail. Please observe the privacy of the people living in the hogan and do not take photographs without permission of the residents.*



Kayenta



Chaco



Mesa Verde



Navajo Farm

Near the bottom of the White House trail is a traditional Navajo home or hogan (hoh-gone) and farm. Being constructed of logs or stone, chinked with mud, and roofed with brush and dirt or asphalt roofing paper, the hogan provides a well-insulated, dirt-floored home.

Although this is not a rich farming area due to lack of moisture and soil poor in organic materials, the silty sand of the canyon floor offers more of a soil base than the rim. The shelter of the canyon and the warmth absorbed by its red walls provide additional frost-free growing days. The high water table of the canyon floor also makes it possible to water crops by hand from shallow wells. Some-

times mud diversion dams built in the spring when the wash is flowing will feed water into fields before they are planted. These small advantages of canyon farming over rim farming, coupled with the spring rains at planting time and summer rains in July or August, are often sufficient for crops to reach maturity.

Corn (a drought-resistant local variety) is the main crop grown on canyon farms, but beans, squash, melons, and alfalfa are also common. Peach trees, brought into the canyon by the Hopi Indians in the 1600s, are cultivated, and in some sheltered alcoves apple, plum and apricot trees are grown. Yields are not high, and most produce is used for home consumption rather than being sold as a source of income.

Many of the Navajo families supplement their farming with flocks of sheep which graze on the rim in the winter months and are brought into the canyon during the summer. Sheep are a major source of food and a source of cash income for some Navajos. Wool finds a market at trading posts and weaving cooperatives. Navajo weavers who do not sell the wool use it themselves, spinning the raw wool into yarn, sometimes coloring it with dyes from various plants in and around the canyon, and weaving it into rugs which are then sold.

*The ascent out of the canyon is all uphill! So take your time and rest when tired or out of breath. Notice the dramatic geologic formations around you and the difference between the rock of most of the trail and the rock near the top.*

At the point where the White House trail descends, the canyon is about 550 ft. (150 m.) deep. Red de Chelly sandstone constitutes the major portion of the canyon walls and in the upper

Natural processes have created canyons where sand dunes once existed, and before that, a sea. Natural forces and processes have also made human life and cultural development possible in these canyons for the past 2,000 years. The processes continue today. You now have had the chance to look into the past and now you have the opportunity to think of the future of Canyon de Chelly.

This guide was developed by National Park Service employees Anne Marie Reber, Eric Beringause, Cynthia Davis and Gary M. Hasty. We hope you enjoy it.

Southwest Parks and Monuments Association is a nonprofit organization dedicated to furthering visitor understanding of our natural and human history. It works closely with the National Park Service in programs of interpretation, education and research.

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