



# VISITOR GUIDE

MONTEZUMA WELL • MONTEZUMA CASTLE NATIONAL MONUMENT • TUZIGOOT NATIONAL MONUMENT



## Welcome To The Monuments Of The Verde Valley

The Verde Valley, lying under the spectacular pine-clad cliffs of the Mogollon Rim of central Arizona, forms an immense biological transition between desert, grassland and forest vegetation zones.

As the seasons change, this endangered riparian or streamside habitat of the Verde River serves as a migration corridor for many animals traveling from summer to winter ranges in the south. But for thousands of years, the Verde Valley was also a haven for the movement of people, providing the food and water all life needs for survival.

The National Monuments of the Verde Valley—Montezuma Castle, Montezuma Well and Tuzigoot—protect and interpret the legacy of the Sinagua, an Ancestral Puebloan people who flourished in the area for centuries, long before Columbus claimed to have discovered this New World.

Montezuma Castle has been described as the best preserved and most dramatic cliff dwelling in the United States. Montezuma Well is a natural limestone sinkhole with prehistoric sites and several animal species found nowhere else in the world. Tuzigoot is the remains of a 110-room pueblo perched on a high ridge with a panoramic view of the Verde River.

Today's visitors marvel at the well-preserved Sinagua dwellings, but also allow some time to experience the oasis of the riparian area. As the seasons change, we invite you to – ENJOY!

— Kathy M. Davis, Superintendent

## Nature's Kaleidoscope of Color

The hot, hazy, humid days of summer at last give way to the cool refreshing respite of autumn. As the days start to shorten and nights cool off, a wondrous transformation begins to occur in nature. A crimson tide of fiery color sweeps across the high country of Arizona, descending into sheltered canyons and flowing along rivers and streams.

According to Native American legends of the north, celestial hunters slew the Great Bear in the autumn sky, and his blood dripping on the forests changed many leaves to red. Other trees were turned yellow by fat that splattered out of the kettle as the hunters cooked the meat.

Other people had different legends, but we now know that the colors of fall are the result of adaptations to survive colder weather.

Throughout the summer months, trees have been making their own food by using the green pigment chlorophyll, present in the leaves. This chlorophyll absorbs the sun's energy and uses it in converting carbon dioxide from the air, soil and water into sugars and starch; a process called photosynthesis.

In the arid Southwest, deciduous trees like quaking aspen or Arizona sycamore lose a great amount of water to the atmosphere through their leaves. On a hot summer's day, a single sycamore may give off as much as 150 gallons of water to the atmosphere through transpiration. With available water limited in dry winter months, deciduous trees cannot afford this excessive use of water. Therefore, they meet the problem by literally shutting down the food making process.

When nighttime temperatures consistently drop below 45 degrees Fahrenheit, this process becomes visible. A corky layer of cells known as the abscission layer grows between the leaf stem and twig to which it is attached, preventing water and minerals from reaching the leaf. The green pigment, chlorophyll, breaks down and the green color disappears and other colors, which have been present in leaves all along,

become evident. These include carotene, the orange pigment, and xanthophyll, which is yellow. Some trees that exhibit colors of yellow and orange are the quaking aspens, Arizona sycamores, velvet ash and cottonwoods.

The trees still need food: sugars are manufactured in the leaves during the daytime but cool nights and the abscission layer prevents movement of these sugars from the leaves. As these sugars break down in the presence of bright light, the water soluble pigment anthocyanin is formed. If tree sap is acid, the resulting color will be red; if it is alkaline, bright purples will appear.

The parade of color continues for several months in central Arizona. Some of the best areas for viewing

include:

Montezuma Castle and Montezuma Well National Monument, along the banks of Beaver Creek, is a showcase of the bright yellows of the velvet ash, cottonwoods and Arizona sycamores.

Tuzigoot National Monument gives opportunity for a sweeping view of the golden clad cottonwoods changing along the Verde River. Oak Creek Canyon, near Sedona, gives opportunity to enjoy the spectacular reds of big tooth maples, Virginia creeper and sumac.

Take advantage of nature's kaleidoscope of autumn color here in central Arizona — cinematography as only nature can present it.

—By Bob Del Carlo,  
National Park Service Ranger



## CONTENTS

What You Need to Know	2
Montezuma Castle	3
Area Map	4
Montezuma Well	6
Tuzigoot	7
Western National Parks Association	8

# GENERAL INFORMATION

## About the Monuments: Your First Visit

**MONTEZUMA CASTLE NATIONAL MONUMENT** is 3 miles off Interstate 17 (see map). Address: 2800 Montezuma Castle Road, Camp Verde AZ. This is one of the best preserved prehistoric cliff dwellings in the United States. Summer hours are 8am to 6pm; winter hours are 8am to 5pm, 7 days a week. The flat, paved trail is an easy third of a mile total loop that takes 20 to 30 minutes. The Castle is not open to the public but the trail runs beneath it with many panoramic views. The Visitor Center and most of the trail are accessible to wheelchairs, with only one portion of the trail to "Castle A" that is too steep. There is a shaded picnic area, but this is not accessible to wheelchairs.

Detailed information is available on the website at [www.nps.gov/moca](http://www.nps.gov/moca)  
Phone: 928-567-3322

**MONTEZUMA WELL** is open 8am to 6pm in the summer and 8am to 5pm during the winter, 7 days a week. It is 4 miles off Interstate 17 (see map) and 11 miles from Montezuma Castle. Address: 5525 Beaver Creek Road, Rimrock AZ. Montezuma Well is a limestone sinkhole formed by the collapse of an immense underground cavern. Prehistoric dwellings are visible along the rim and interpretive signs explain the unique ecosystem. The third of a mile trail is easy to moderate with some steps to the rim of the Well. The trail is too steep for wheelchairs. Visitors who just want to view the Well should allow 20 minutes; walking the entire loop trail requires about 45 minutes. There is a separate, shaded picnic area with restrooms and is wheelchair accessible.

Detailed information is available on the website at [www.nps.gov/moca](http://www.nps.gov/moca)  
Phone: 928-567-4521

**TUZIGOOT NATIONAL MONUMENT** is approximately 20 miles from Interstate 17 near the town of Clarkdale (see map). Address: 25 W. Tuzigoot Rd., Clarkdale AZ. Hours are 8am to 6pm in the summer, 8am to 5pm in the winter, 7 days a week, closed Christmas Day. Tuzigoot is a 110 room pueblo on a high ridge overlooking the Verde River. The Visitor Center Museum houses one of the finest collections of Sinagua artifacts. The fourth of a mile trail is rated easy to moderate because there is some elevation gain to reach the site. The trail is too steep for wheelchairs but the Visitor Center and Museum are accessible. There are no picnic facilities.

A separate nature trail, one-half of a mile, overlooks Tavasci Marsh, an Audubon Society-designated Important Birding Area. This trail is accessible to wheelchairs but has some elevation gain.

More detailed information is available on the website at [www.nps.gov/tuzi](http://www.nps.gov/tuzi)  
Phone: 928-634-5564

The mailing address for all three monuments is: National Park Service, PO Box 219, Camp Verde, Arizona 86322.

## Protect Yourself

- Remember to drink lots of water, use sunscreen and wear a hat! If you feel thirsty you are already on the way to being dehydrated. Be prepared with appropriate footwear and clothing for temperatures that can exceed 100 degrees in the summer and below freezing in the winter.
- Please stay on the path. Rattlesnakes live here although they are rarely sighted.
- Remember to lock your car and put valuables out of sight.
- Handrails are there for your safety; please do not go past them. Rock surfaces can be slippery; please stay away from any cliff edge.

## Protect your Monuments

- The desert landscape is very fragile. Smoking is permitted in designated areas only.
- All the Monuments are protecting archeological sites as well as natural resources. It is against the law to tamper with, deface or remove any artifact, plant, rock or other natural feature of the park.
- Hiking off the trails can damage the soil crust — a living groundcover of lichens, mosses and other organisms.
- Off-road parking or driving is prohibited.
- Pets on a short leash are allowed on the trails but must be carried into Visitor Centers. Do not leave pets in a vehicle during warm weather. Please clean up after your pet.
- Camping is prohibited in all areas of the Monuments.
- Bicycles, skateboards and any motorized vehicle other than wheelchairs are not permitted on the trails.
- Gas stoves are permitted only at the Montezuma Well picnic area. No ash producing fires are allowed in the Monuments.
- Please help with trash removal and use the waste receptacles. We have an active recycling program for aluminum cans and plastic bottles, with designated receptacles. Help by removing the caps from bottles — caps cannot be recycled.

## Entrance Fees

Both Montezuma Castle and Tuzigoot have a separate per person entrance fee of \$3.00 per adult through January 31, 2006. There is no charge for children 16 and younger, and there are no fees to visit Montezuma Well, a unit of Montezuma Castle.

National Parks Pass, Golden Eagle Pass, Golden Age Pass and Golden Access are honored. There are no other discounts available. For information on any of these programs, contact a Park Ranger.

Entrance fee waivers are available to school groups for educational purposes that relate to the Monument visited. Submit requests one month in advance to: fee manager, 928-567-3322, ext. 23; FAX 928-567-3057.

## Transportation

There is no public transportation to any of the Monuments. The nearest major airport is in Phoenix AZ., 100 miles to the south. Visitors may also fly into Flagstaff AZ., 50 miles to the north.

**EFFECTIVE FEBRUARY 1, 2006:**  
The fee per adult is \$5.00. There is no charge for children 15 and under. A combination ticket to visit Tuzigoot and Montezuma Castle is available for \$8.00 per adult.

## Food and Supplies

There are numerous restaurants, convenience stores, hotels and grocery stores in the towns of Camp Verde, Sedona and Cottonwood. Contact the local Chambers of Commerce (see listings) for more details.

## Ranger Programs

The Monuments are designed to be self-guided, with interpretive signs along the path. Ranger programs on many topics are presented daily if staffing and weather permit. Consult the signboard at the Visitor Center for times and locations or ask at the front desk.

## A Great Way to Experience your National Parks and Monuments

For only \$50, you can experience all

384 National Parks and

Monuments for twelve months from date of purchase. The card is available at Montezuma Castle or Tuzigoot; by calling 1-800-GOPARKS, or by visiting the website at [www.nationalparks.org](http://www.nationalparks.org). For an additional \$15, you may upgrade your Park Pass to the "Golden Eagle" program, allowing access to all Federal fee areas, with some exceptions, in the United States. Also available, for a one-time fee of \$10, is the Golden Age Pass for citizens or permanent residents of the U.S. who are 62 years of age or older. Ask a Ranger for any details about these opportunities.



## If You Love Wild Animals — Don't Feed Them!

They look adorable but remember squirrels and other wild animals can bite! They could be carrying rabies or other diseases. Wild animals can become aggressive if they are accustomed to humans and human food. Please enjoy wild animals from a safe distance!

*Rock Squirrel have been cavorting on ledges and begging for food since the Sinagua were here! Please don't feed them; they can bite and might carry disease.*

*Photo by Skip Larson*

## Accessibility

The National Parks and Monuments are areas of great beauty and significance, set aside for all to enjoy. Ask a Ranger if there is any question or concerns about accessibility. Audio cassettes and text in Braille are available. More details about trails and the Visitor Centers are available under individual Monument descriptions.

## VIP Program

Our volunteers are priceless! The National Park Service's "Volunteers in Parks" program gives the public an opportunity to share knowledge and experience. Call 928-567-3322, ext.22.

# MONTEZUMA CASTLE

*First — it is not a castle, although there is a great magnificence to this prehistoric American Indian structure. Second — the Aztec emperor Moctezuma II was never here; the Castle was abandoned at least a century before he was born.*



People traveling along Beaver Creek would have had this first glimpse of Montezuma Castle, a prehistoric cliff dwelling 100 feet above the floodplain. Montezuma Castle was part of a large, extended community; there are sites approximately every mile and a half along Verde Valley waterways.

*Photo by Skip Larson*

Rising 100 feet above the Beaver Creek floodplain, Montezuma Castle is a testimony to the resilience and innovations of a people called the “Sinagua,” named after the Spanish term for the San Francisco Peaks, the “Sierra Sin Agua” — “the mountain without water.”

Montezuma Castle is one of the best-preserved cliff dwellings in the United States. It is 90 percent original despite years of unauthorized excavation, visitation and even one attempt to blow apart a wall to collect artifacts.

## Origins

Montezuma Castle was not an isolated structure where people lived generation after generation, having little contact with neighbors. The Castle instead was a small, but very dramatic, part of a large community of people spread up and down the waterways of the Verde Valley. As many as 6,000 to 8,000 people may have lived in the valley in small villages no more than two miles apart.

Montezuma Castle is located along Beaver Creek, possibly a final leg in a major prehistoric trade route from northern Arizona. People following this trail were seeking copper, salt, cotton, argillite and other minerals.

Were the residents of Montezuma Castle keeping watch on traders or other visitors entering the area, or was it simply a very nice place to live? No one really knows.

## The Castle

Montezuma Castle is built into a deep alcove with masonry rooms added in phases. A thick, substantial roof of sycamore beams, reeds, grasses and clay often served as the floor of the next room built on top. Entrance to most areas was usually from a hole in the roof; a ladder made access easier.

The 19 rooms could have housed 35 to 50 people, conserving precious farmland near the creek. Around the corner was “Castle A,” a site with 45 to 50 rooms that also hugged the limestone cliff. These people were certainly related, sharing food, land, friendships; all ties that bind a community.

There is little evidence of conflict or warfare but perhaps people felt more secure living in the Castle. The series of ladders used to climb to the site could be pulled in for the night and there is a panoramic view of the river and valley from the top parapet

level. A small ruin above the Castle, on the top of the cliff, allows views of the entire countryside; a sentry would have advance warning of anyone entering the area.

Just as important — the Castle is simply a wonderful place to live in all seasons. It is cool in the summer and warm in the winter. The higher elevation gives some relief from biting mosquitoes, juniper gnats and other pesky vermin. Daily activities, such as processing food, were done on the roof, and most areas have an inspiring creekfront view!

## Moving Away

Starting around 1380 to 1400, the Sinagua began moving from the area, probably joining relatives in large pueblos to the east. As more explanations are offered for their departure, more questions arise. Stress factors may have included prolonged drought, disease, and nutrient-depleted soil from growing corn.

The departure from Montezuma Castle and surrounding ancestral lands had to have been very emotional. The ties to the land were over centuries and generations — the decision to leave could only have been out of necessity.

## The “Halls of Montezuma”

In 1874, some of the first Euro-American explorers to see Montezuma Castle were veterans of the Mexican-American War (1846–1848). When they entered the Verde Valley and saw the great cliff dwellings and large pueblos with standing walls, they didn’t believe the local indigenous people had the knowledge or ability to construct such imposing structures, and so attributed them to the Aztecs, whose magnificent ruins they had seen in Mexico.



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A popular Marine marching song of the time referred to the “Halls of Montezuma,” or, Mexico City, center of the Aztec world. Inspired, the veterans felt the Aztec king had to have been somehow involved! Once Montezuma Castle was recorded on early maps, the name was accepted.

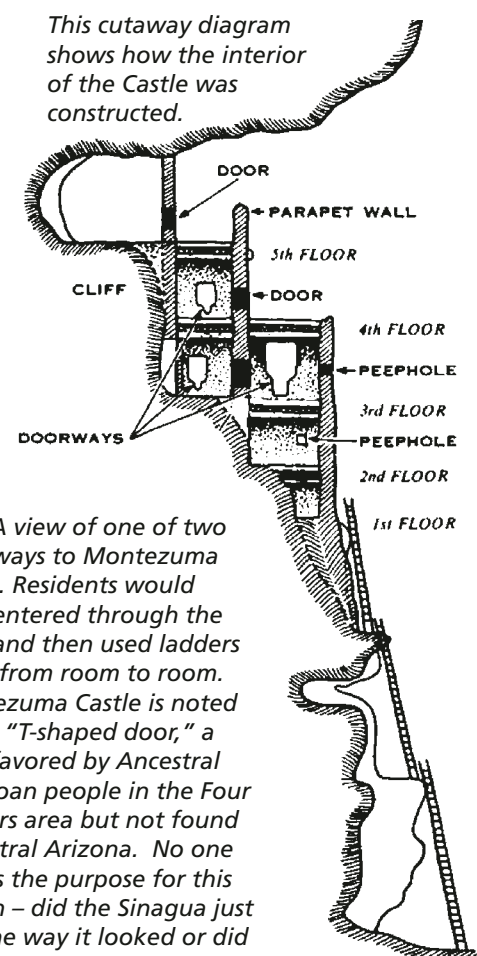
When Fort Verde was established to subdue and round up the Yavapai and Apache people, a popular outing for officers and enlisted men was to visit “The Castle.” Depending on the perspective, the Castle was either a site to preserve—or a treasure chest full of curiosities to take home.

Very few original artifacts remained in 1906 when President Teddy Roosevelt declared Montezuma Castle a National Monument, but protection of the structure for future generations was assured.

In 1933, “Castle A” was excavated, uncovering a wealth of information and artifacts that expanded our knowledge of the Sinagua. The Visitor Center displays at Tuzigoot and Montezuma Castle showcase this culture; a legacy that did not disappear but is still alive with the Pueblo people of today.

*By Anne Worthington,  
National Park Service Guide*

*This cutaway diagram shows how the interior of the Castle was constructed.*



*Left: A view of one of two entryways to Montezuma Castle. Residents would have entered through the door and then used ladders to go from room to room. Montezuma Castle is noted for its “T-shaped door,” a style favored by Ancestral Puebloan people in the Four Corners area but not found in central Arizona. No one knows the purpose for this design – did the Sinagua just like the way it looked or did the shape have a function?*

*Photo by Skip Larson*

# THINGS TO SEE AND DO IN THE VERDE VALLEY

## National Park Service

See page 2 for a detailed description of these National Monuments and fees.

### Montezuma Castle National Monument

HOURS: Summer 8am to 6pm; winter 8am to 5pm; 7 days a week  
 ADDRESS: 2800 Montezuma Castle Road, Camp Verde AZ 86322  
 ADMISSION: fee; permits and park passports honored  
 PHONE: 928-567-3322  
 WEB: www.nps.gov/moca

### Montezuma Well

HOURS: Summer 8am to 6pm; winter 8am to 5pm; 7 days a week  
 ADDRESS: 5525 Beaver Creek Road, Rimrock AZ 86335  
 ADMISSION: free  
 PHONE: 928-567-4521  
 WEB: www.nps.gov/moca

### Tuzigoot National Monument

HOURS: Summer 8am to 6pm; winter 8am to 5pm; closed Christmas Day  
 ADDRESS: 25 W. Tuzigoot Road, Clarkdale AZ 86324  
 ADMISSION: fee; permits and park passports honored  
 PHONE: 928-634-5564  
 WEB: www.nps.gov/tuzi

## Arizona State Parks

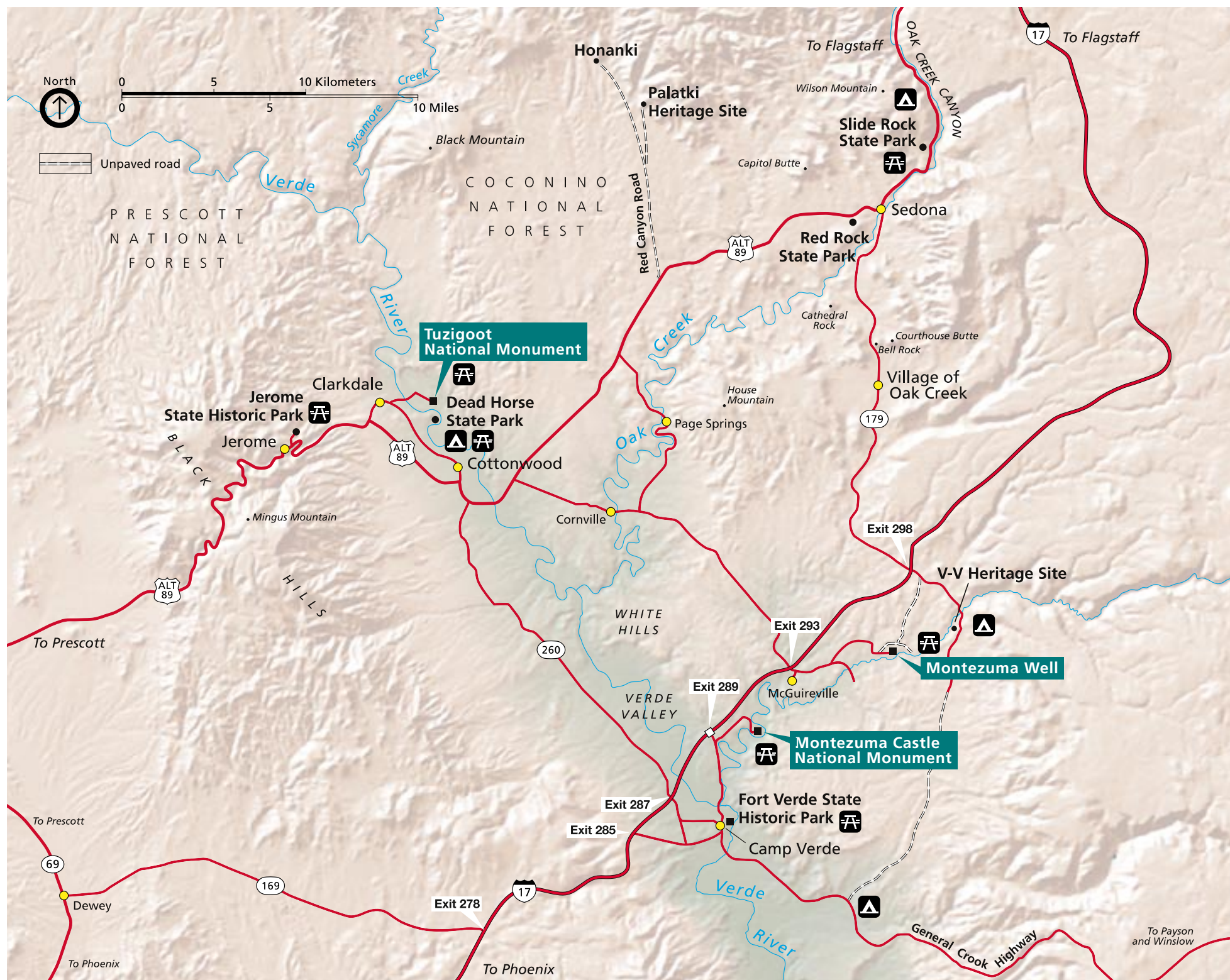
Website for all Arizona State Parks: [www.azstateparks.com](http://www.azstateparks.com)

### Dead Horse State Park

Located on the Verde River near Cottonwood. An excellent place for bird watching, hiking and recreating along the Verde River. Offers picnicking, full-facility camping, fishing, horseback riding, and mountain biking.  
 HOURS: Ranger Station - 8am to 5pm daily; campgrounds remain open.  
 ADDRESS: 675 Dead Horse Ranch Road, Cottonwood AZ 86326  
 ADMISSION: fee  
 PHONE: 928-634-5283

### Red Rock State Park

A nature preserve and environmental education center located a few miles south of Sedona. The picnic area and classrooms may be reserved for public or private functions. Designated hiking trails are available, but there is no swimming, wading or camping. Pets are not allowed in the park. There are many nature hikes, talks, and programs for children. Call for details.  
 HOURS: The Visitor Center is open 8am to 5pm. Trails are open 8am to 5pm October - March; 8am to 6pm April and September, 8am to 8pm May - August.  
 ADDRESS: 4050 Red Rock Loop Rd., Sedona AZ 86339  
 ADMISSION: fee per car  
 PHONE: 928-282-6907



### Slide Rock State Park

This park, in scenic Oak Creek Canyon, takes its name from the 30-foot water slide naturally worn into the rocks of the creek bed. There are opportunities for bird watching, fishing, hiking, and relaxing along the creek. Pets are allowed if on leash in most areas of the park, but not in the swimming areas.

HOURS: Day use only. 8am to 5pm

ADDRESS: 6871 N. Highway 89A

Sedona AZ 86339 (in Oak Creek Canyon).

ADMISSION: fee per car up to four adults.

Call for details

PHONE: 928-282-3034



### Fort Verde State Historic Park

General Crook's US Army scouts and soldiers were stationed at Fort Verde in the late 1800s. Several original buildings still exist. Historic military living quarters are open to visitors and teach about life on the frontier. The museum located in the old headquarters buildings displays artifacts explaining the history and methods of frontier soldiering.

HOURS: 8am to 5pm daily; closed

Christmas Day

ADDRESS: 125 E. Hollamon Street, Camp Verde AZ 86322

ADMISSION: fee; children under 7 free

PHONE: 928-567-3275

WEB: www.azstateparks.com



### Jerome State Historic Park

Photo by Pamela Ravenwood

### Jerome State Historic Park

The mansion of James Douglas built in 1916 perches atop a hill overlooking the Verde Valley. The building once served as a hotel for mining officials as well as a private home. Displays feature local mining history.

HOURS: 8am to 5pm daily; closed

Christmas Day

ADDRESS: 100 Douglas Road,

Jerome AZ 86331

ADMISSION: fee

PHONE: 928-282-6907

### Arizona Game and Fish

#### Page Springs Hatchery

This is Arizona's largest fish hatchery. A self-guided tour takes visitors through the main hatchery where rainbow and brown trout are raised to be released in waters throughout Arizona. There are two additional nature trails and some of the walk is along Oak Creek. The Page Springs Hatchery is also an Audubon-designated Important Bird Area; sightings of bald eagles are common in winter months.

HOURS: 8am to 3:30pm daily; closed

Thanksgiving and Christmas

ADDRESS: 1600 N Page Springs Road,

Cornville AZ 86325

ADMISSION: no charge

PHONE: 928-634-4805

### US Forest Service

#### What is the Red Rock Pass?

The Coconino National Forest, Red Rock District, has over 80 trails and three heritage sites to visit in the Sedona area.

The Red Rock Pass is a parking permit to access these sites and trails. It is not needed to drive through the area or stop to take a picture.

Red Rock Passes may be purchased at the South Gateway Visitor Center, Highway 179 in the Village of Oak Creek, 8:30am to 5pm daily, phone: 928-284-5323; at the Sedona Chamber of Commerce Center, Highway 89A and Forest road, phone 928-282-7722; and at many stores throughout the area.

WEB: www.redrockcountry.org

#### Palatki Heritage Site

Cliff dwelling and pictograph trail, interpreting the prehistoric Sinagua culture. There is a small visitor center with exhibits and bookstore. Reservations are required because the parking lot only has 16 spaces.

HOURS: Reservation required;

9:30am to 3:30pm daily; closed

Thanksgiving and Christmas Day

ADMISSION: Red Rock Pass, Golden Age or Golden Eagle

PHONE: 928-282-3854

WEB: www.redrockcountry.org

#### Honanki Heritage Site

Cliff dwelling with associated rock art, interpreting the prehistoric Sinagua culture.

HOURS: 10am to 6pm daily; closed

Thanksgiving and Christmas

ADMISSION: Red Rock Pass, Golden Age or Golden Eagle

PHONE: 928-282-4119

WEB: www.redrockcountry.org

### V-V Heritage Site

Rock art site highlighting over 1200 petroglyphs. There is a small visitor center and gift store.

HOURS: 9:30am to 3:30pm daily; open

Friday-Monday; closed Thanksgiving and Christmas

ADMISSION: Red Rock Pass, Golden Age or Golden Eagle

PHONE: 928-282-4119

WEB: www.redrockcountry.org

### Ranger Districts

#### Red Rock District Ranger Station

Coconino National Forest  
PO Box 300, Sedona AZ 86339  
928-282-4119

WEB: www.fs.fed.us/r3/coconino

#### Verde Ranger District

Prescott National Forest  
300 East Highway 260,  
Camp Verde AZ 86322  
928-567-4121

WEB: www.fs.fed.us/r3/prescott

### Yavapai-Apache Nation

#### Yavapai-Apache Tourism Department

Information on activities through the Yavapai-Apache Nation.

ADDRESS: 355 Middle Verde Road,  
Camp Verde AZ 86322

PHONE: 928-567-3035

WEB: www.yavapai-apache-nation.com

### Historical Societies & Museums

#### Camp Verde Historical Society and Museum

Museum displays the rich historical past of the Verde Valley with timeline and exhibits on prehistory, mining, ranching and settlement.

ADDRESS: 435 South Main Street, Camp Verde AZ 86322

PHONE: 928-567-9560

WEB: www.sedona-verdevalleymuseums.org

#### Sedona Historical Society & Heritage Museum

This museum highlights Sedona's history of pioneers and settlers from 1870 to 1950. Displays show the lifestyles and works of people who ranched, farmed and worked this area during that time period.

HOURS: 11am to 3pm daily; closed major holidays

ADDRESS: 735 Jordan Road,  
Sedona AZ 86339

ADMISSION: fee

PHONE: 928-282-7038

WEB: www.sedonamuseums.org

#### Clemenceau Heritage Museum

Displays related to the history of Cottonwood and the Verde Valley. Photographs, newspapers, letters, maps and other artifacts from the 1870s to the present.

HOURS: Wednesday 9am to noon; Friday to Sunday 11am to 3pm

ADDRESS: 1 North Willard Street,  
Cottonwood AZ 86326

ADMISSION: no charge

PHONE: 928-634-2868

WEB: www.sedona-verdevalleymuseums.org

### Jerome Mine Museum

This museum depicts Jerome's history from mining day to present time through photographs, books, newspapers, letters, histories, maps, and other artifacts.

HOURS: 9am to 5pm daily

ADDRESS: 200 Main Street,

Jerome AZ 86331

ADMISSION: fee

PHONE: 928-634-5477

WEB: www.jeromehistoricalsociety.org

### Chambers of Commerce

Contact area chambers of commerce for information on an array of activities including antique shows, nature festivals, farmer's markets, pioneer days, art fairs, concerts, holiday celebrations, and more.

#### Camp Verde Chamber of Commerce

385 South Main Street,  
Camp Verde AZ 86322  
928-567-9294

WEB: www.campverde.org

#### Clarkdale Chamber of Commerce

PO Box 245, Clarkdale AZ 86324  
928-634-8700

WEB: www.clarkdalechamber.com

#### Cottonwood Chamber of Commerce

1010 South Main Street, Junction 89A and 260

Cottonwood AZ 86326

928-634-7593

WEB: www.cottonwood.verdevalley.com

#### Jerome Chamber of Commerce

PO Box K, Jerome AZ 86331

928-634-2900

WEB: www.jeromechamber.com

#### Sedona-Oak Creek Chamber of Commerce

PO Box 478, Sedona AZ 96339

800-288-7336

WEB: www.sedonachamber.com

This Visitor Guide is provided by  
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in cooperation with:

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P.O. Box 219, Camp Verde, Az. 86336

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Kevin Harper, John Reid

Masthead art © 2004  
Montezuma Castle National Monument  
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# MONTEZUMA WELL

## A Natural Oasis

*As seasons change, flocks of migratory green-winged teals and mallard ducks rest briefly on the surface of Montezuma Well. Muskrats, pond sliders and Sonoran mud turtles ply through the thick beds of brown-green algae that flourish through the year.*

This natural limestone sinkhole offers a unique setting as you experience the contrast of two distinct life zones along the one-third mile trail. The Well rim, like most of the area nearby, is a high desert life zone. The riparian area along Beaver Creek creates a yellow and green ribbon of lush growth through this semi-arid countryside.

The perennial flow of this spring-fed stream together with water from Montezuma Well and its irrigation canal truly creates a natural and soothing haven for visitors.



*Montezuma Well hosts a variety of wildlife in all seasons but gilled fish cannot survive in the waters; the carbon dioxide level is too high. Instead, several species found only in the depths of Montezuma Well have evolved, adding to the rich tapestry of this life zone in the Upper Sonoran Desert.*

### Time And Water — The Formation Of Montezuma Well

Scientists believe about 12 million years ago this part of the Verde Valley was covered by a large shallow lake. Floating plants in this body of water caused dissolved limestone to form minute crystals which slowly sank to the bottom, accumulating into thick layers of soft limestone rock.

About 2 million years ago the lake

waters began disappearing. Underground streams started dissolving softer areas of the underground limestone and a cavern began to form. The passage of time and the force of water carved a cavern larger and larger until, about 11,000 years ago, the roof of one of these caverns gradually crumbled forming Montezuma Well.

### Underwater Chain Of Life

Water entering Montezuma Well is at a constant 74 degrees with a flow of over 1,400,000 gallons a day. As the water passes through limestone it collects high

amounts of dissolved carbon dioxide nearly 100 times higher than most natural aquatic environments.

The highly carbonated water is inhospitable to fish even though there is oxygen. Instead, an aquatic community of several unique species- each dependent on the other- has evolved. Four species are endemic, which means they only live in the Well!

Algae, small floating plants,

manufacture food from light energy and the rich supply of carbon dioxide in the water.

At night, a great feeding frenzy begins among the creatures who have adapted to this harsh aquatic environment. Amphipods, tiny shrimp-like animals, feed by combing algae through appendages below their mouths.

Leeches, living by day in the bottom sediments of the well, rise at night and, searching with sensory hairs on their bodies, gulp large quantities of the small amphipods. Night-swimming water

scorpions also make evening meals of the shrimp-like creatures.

With the first light of day, these creatures sink back to the depths of the Well until sunset, and the beginning of another cycle.

### Arsenic And The Well

Arsenic is the 20th most common element in the earth's crust, and the 12th most common element in the human body. Arsenic is present in all living matter, as well as water, soil, and air. Where does arsenic come from? Arsenic enters water supplies from erosion of natural deposits in the earth's crust. Most organic and inorganic arsenic compounds are white and or colorless, and have no smell or taste.

The EPA has set a standard for the amount of arsenic in public drinking water to be no higher than 10 ug/L (micrograms per liter). The arsenic level in samples of water taken from Montezuma Well has registered 100 ug/L! It is believed the Sinagua used the water from Montezuma Well to irrigate their crops and it would have entered the food chain in this way.

What effect does prolonged consumption of arsenic have on the human body? After one or two

generations, people may have noticed an increase in birth defects or other health problems. Sinagua lived around the Well since A.D. 900, but could increasing levels of arsenic been a factor in their leaving Montezuma Well?

### Underwater Archeology — A First!

Montezuma Well was the first National Park Service area to use SCUBA divers in a systematic attempt to investigate the underwater component of a prehistoric archaeological site.

Approximately 700 artifacts of cultural material typical of a late Sinagua site in the Verde Valley were recovered and are curated by the National Park Service in Tucson, Arizona. These included: pottery, charred animal bone of rabbit, hare, and deer, worked obsidian and chert flakes, fired clay, building stone eroded from the ruins above, and ground basaltic stone.



*The Well Outlet Trail is cool and inviting during hot summer months. The shaded trail follows a portion of the prehistoric irrigation ditch constructed by the Sinagua. The trail also parallels Beaver Creek, an important perennial water source for the Verde Valley.*

### The Mystery Of The Water

Scientists have not discovered the origin of the consistently warm water that feeds Montezuma Well at a rate of 1,400,000 gallons a day!

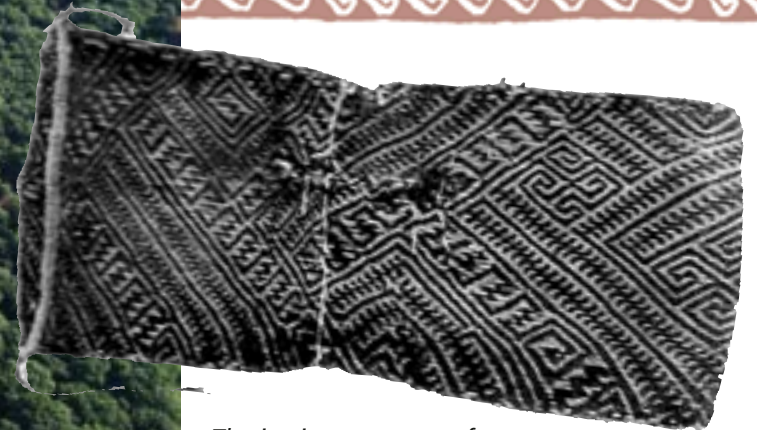
A current research topic with scientists from Northern Arizona University is trying to decipher where the water is coming from and from what level. Scientists have noted the flow rate from the Well rarely fluctuates — but the source deep in the earth's layers remains a mystery

*By Rex Vanderford,  
National Park Service Ranger*



TUZIGOOT sits on a long, limestone ridge 150 feet above the Verde River floodplain. Also in the photo are the tailings from the former copper smelter located in Clarkdale.

PHOTO BY ERNIE SILVA



The intricate pattern of this cloth bag speaks to the aesthetic sense of the ancient peoples populating the area.

# TUZIGOOT

*Dawn comes easily to the world — touching upon the mountain ridges and then brightening down into the valleys. As the light comes to this hill above the river, the old walls reflect again a memory of life uncovered from times dust.*

Archaeologists with a Civilian Works Administration crew excavated and stabilized the ancestral village in 1933 and built a museum to hold its material story in 1935.

Our present understanding is of hunters passing through this abundant valley perhaps several thousand years ago and then populated before A.D. 1100 by farming peoples who built their way of life on the available resources of land and water.

Although the last word is yet to be written on the goings and comings of these people, we know from our scientific inquiries some clues about the climate of the times. Rainfall is sometimes marginal; the crops may have depleted the soil nutrients after years of planting.

By the time the people of Tuzigoot left the region around A.D. 1400 the citadel had housed perhaps 250 people in its hundred rooms. It was the city of its day where people learned to resolve the problems of living life together. And though with more people come more problems, there are also more of the

same people to find solutions. There is a creativity of survival and choices threading through the generations that lived here.

How big was the world they called their own? By the stories of people and artifacts we know the Sinagua traded for shells from the coast and macaws from the south. Where did they go? Depending on our use of the language, “vanished” may come to mean moving on to other resources and other promised lands. The Hopi people of today tell, in their clan stories, of living in places like this before migrating to their present northern mesas.

Why did they leave? Perhaps resources became little and politics too much — or perhaps the Promised Land lay just beyond the horizon.

Enjoy your visit to Tuzigoot and look past the ruins to a time when the best world was on top of a hill made golden by dawns’ light.

By John Reid,  
National Park Service Ranger



## Tavasci Marsh — Vestige of an Earlier World

**T**uzigoot National Monument overlooks Tavasci Marsh, a natural riparian area protecting an old meander of the Verde River. This ancient scene would have been familiar to the Sinagua who used water from the marsh and the Verde River to irrigate their crops. Today, Tavasci Marsh has been designated an Audubon Society Important Birding Area for the number and diversity of biological species that inhabit the area.



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# WESTERN NATIONAL PARKS ASSOCIATION

Western National Parks Association was founded in 1938 to aid and promote the educational and scientific activities of the National Park Service. As a nonprofit organization authorized by Congress, we operate visitor center bookstores, produce publications, and support educational programs at more than 63 parks in 11 western states.

## Bookstore Sales

Bookstore sales are WNPA's primary source of income and this income is used to support National Park Service interpretive programs. The following publications, available from WNPA, are recommended for making the most of your visit to the Verde Valley National Monuments in central Arizona.

For our full catalog, visit our visitor center bookstore, or browse online at [www.wnpa.org](http://www.wnpa.org).

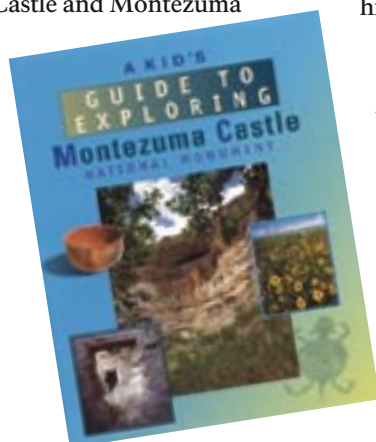
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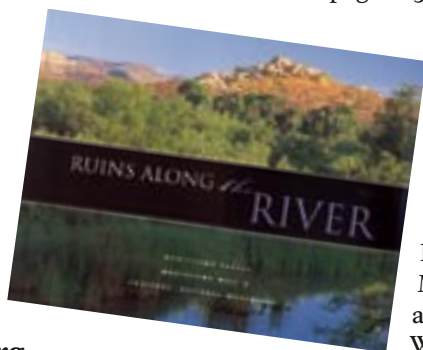


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