



# Ancient Times

Park News 2003



## Celebrating the CCC's 70<sup>th</sup> Anniversary

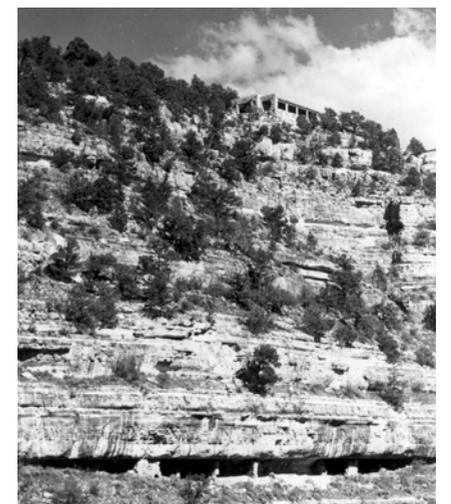
"IF THEY ASKED ME TO GO, I'D GO TOMORROW," declares Albert Spudy, reminiscing about his days in the Civilian Conservation Corps. Spudy and other men spent part of their youth working at Sunset Crater, Wupatki, and Walnut Canyon as Civilian Conservation Corps (CCC) recruits. They left their mark on these monuments—in the steps that wind their way to the Island Trail in Walnut Canyon, in the first visitor center that blended impeccably with its surroundings, in the ranger residence at Wupatki that looks as if it belongs to the landscape. Spudy and two hundred other men were members of the Mount Elden CCC Camp located in Flagstaff. They were part of a national effort to, among other things, assist the National Park Service in the development and improvement of roads, trails, and facilities.

The CCC provided a work force to implement the National Park Service's Master Plan. In order to preserve the natural

character of a landscape, roads, trails and buildings were designed to blend with the natural setting. Construction materials were quarried on-site. Native materials were used to blend the new with the old. The built environment envisioned by National Park Service landscape architects and implemented by the CCC shaped the visitor experience throughout the park system and still does today. Large parks and small monuments from Grand Canyon, Yosemite and Yellowstone to Sunset Crater, Walnut Canyon and Wupatki all benefited from this great legacy.

Two million men worked as CCC recruits in more than 1,200 camps across the country between 1933 and 1942. Initially known as the Emergency Conservation Work program, the CCC was created by President Franklin D. Roosevelt to provide impoverished youth of the Depression the opportunity to improve their education and ability to

*"CCC" continued on page 12*



*top of page:* early visitors enjoy an outing to Walnut Canyon, circa 1895.

*above:* Walnut Canyon's original CCC-built visitor center perched on the canyon rim.

### 4 Meet Your SCA

How do you recognize an SCA? Look for a smile—then ask about SCA's 1.2 million hours of volunteer service yearly.

### 8 Beetlemania

Small in size, the pine bark beetle is causing big problems in Flagstaff and western U.S. forests.

### 9 New Beginnings

After more than 30 years of service, exhibits in the visitor center museums are getting a much-needed overhaul.

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**left:** the sun rises on a wintry desert landscape near Sunset Crater.

**front page:** Visitors to Walnut Canyon enjoy an outing, circa 1895.

## Welcome

Welcome to the Flagstaff Area National Monuments! Walnut Canyon, Sunset Crater Volcano and Wupatki National Monuments are special places that reveal a part of the rich history of the American Southwest. These monuments have been preserved in perpetuity so that their cultural and natural histories might be told.

Preserving the monuments is a partnership between the National Park Service and all visitors. We must all act as stewards of these irreplaceable resources if we are to share them with future generations.

The mission of the National Park Service (NPS) is "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of future generations". To meet this legislative mandate, the NPS must continually evaluate how to manage these lands and resources. You, as one of over 270 million visitors each year to the NPS system, must also make decisions about using and caring for these pieces of America's heritage. Please begin by treating the parks gently during your visit.

Thanks for your assistance!

Palma E. Wilson  
Superintendent

## People & Parks

### Support Your Parks with WNPA Membership

Interested in supporting the educational programs of the National Park Service? Consider buying a membership to Western National Parks Association, the Flagstaff Area Monuments' nonprofit partner association. WNPA members enjoy a 15% discount on bookstore purchases, and memberships are honored throughout the National Park System. An annual individual membership costs \$25. Memberships may be purchased at park visitor centers, or call 928 526-1157, extension 226.



### Are you a VIP?

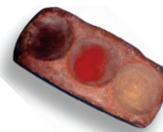
We're looking for enthusiastic, friendly people committed to assisting park employees in different areas of park management. A variety of volunteer opportunities exist year-round at the monuments. Volunteers-In-Park (VIPs) can work full-time or part-time. Housing or RV hook-ups are sometimes available. If you have a special interest or skill, chances are we could use your talents. For more information, contact:



Flagstaff Area National Monuments  
Attn: Volunteer Program Coordinator  
6400 N. Highway 89  
Flagstaff, AZ 86004

### Teachers! Make Your Science Curriculum Come Alive!

*Science in Our Parks* is an in-depth, science-based curriculum for 4th through 6th grade educators and their students, focusing on the natural and cultural history of the Colorado Plateau. Through classroom activities and field explorations in the Flagstaff Area National Monuments, students develop an understanding of the scientific process and park management, while gaining a sense of resource stewardship. For more information, contact the Flag Areas Education Coordinator at 928 526-3367.



# House Rules

Northern Arizona is littered with archeological sites. The dry climate of this region has allowed artifacts and sites of past human activity to survive decomposition and the forces of erosion for hundreds of years.

Our decisions and actions will determine whether these priceless and nonrenewable traces of the past will exist into the future.

As a guest in these homes, please remember these basic house rules:

### **By Invitation Only**

Visit only marked, well-known sites. These have been stabilized and reinforced and are better able to withstand visitation.

Use established, marked trails to and around sites. Walking through and around sites is one of the most damaging impacts; it rapidly undermines wall foundations and crushes fragile archeological objects and deposits.

**Off-trail hiking is prohibited.** Think of the cumulative impact created by judgements such as "it's just a couple of us and it's just this one time".

### **Keep Your Feet Off the Furniture**

Sitting, leaning, walking, or climbing on walls loosens mortar which erodes easily. Walls collapse.

**Minimum fine: \$50**

### **Don't Take the Knickknacks**

Parks are not the place to collect rocks, fossils, animals, or plants. Imagine the result if each of the million visitors a year to the Flagstaff Area National Monuments took something home. The parks would be stripped bare.

**Minimum fine: \$250**

### **Don't Rearrange the Furniture**

Left in place, pieces of pottery and artifacts are valuable clues; rearranged in piles they mean nothing. This behavior deprives other visitors of the thrill of discovering artifacts where they were left generations ago.

**Minimum fine: \$250**

### **Sign the Register Not the Rocks**

Adding names or drawings to rock outcrops, rock art panels, or structures dishonors the timeless qualities of these special places. All visitor centers have guest registers where we invite you to leave your mark.

**Minimum fine: \$250**



National Park Service  
U.S. Department of the Interior

## Flagstaff Area National Monuments

**Superintendent**  
Palma E. Wilson

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National Park Service  
Flagstaff Areas  
6400 N. Highway 89  
Flagstaff, Arizona 86004

**Park Headquarters**  
928 526-1157

**Fax Number**  
928 526-4259

**E-mail**  
FLAG\_Information@nps.gov

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

# Catching Glimpses of the Past

Walnut Canyon. Sunset Crater Volcano. Wupatki. Three national monuments with very different landscapes. As we look up at Sunset Crater's cinder cone, down into Walnut Canyon, and out across the Wupatki grasslands to the Painted Desert, we wonder: how are these places connected?

## NATURAL LEGACY

At all three monuments, the earth's varied geologic past lies exposed before us. These landscapes were shaped by the violence of volcanic eruptions and by the slow erosion of older rock layers, which in turn reveal evidence of ancient seas and sand dunes. Within canyon walls and in broad scenic vistas, we glimpse features from the distant past, and the diversity of plants and animals that have adapted to live here today.

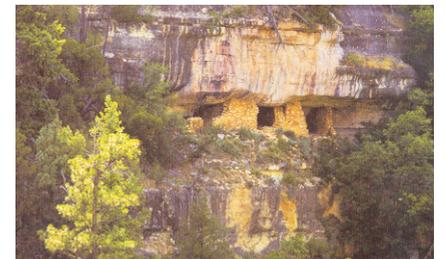
## GLIMPSES OF THE PAST

For thousands of years, people too have found ways to live in these places,

adapting to an arid environment and learning new skills. When Sunset Crater Volcano erupted in the 1000s, there were people here to see it; the event changed their lives, and influenced settlement at Wupatki and throughout the region. The pueblos of Wupatki and the cliff homes of Walnut Canyon contain information that fuels archeological theories and confirms the stories and traditions of present day American Indian peoples, who still have strong ties to these places. By visiting these sites, we can experience something of the lives of people here before us—their migrations, living conditions, conflicts, cooperation, ingenuity, achievements, and failings. What can we learn from them?

## FOR FUTURE GENERATIONS

Some lessons of the past have not yet been discovered. By preserving and protecting these landscapes, with their variety of natural and cultural components, we are saving information for future generations.



above: Sunset Crater Volcano, Wupatki and Walnut Canyon National Monuments protect a variety of natural and cultural landscapes.

## Visitor Information

### In Case of an Emergency

In case of an emergency, contact a park ranger. If no ranger is available, from Walnut Canyon and Sunset Crater Volcano call 911. From Wupatki, call the Coconino County Sheriff's Office at 928 774-4523.

### Dates and Hours of Operation

The Flagstaff Area National Monuments are open every day except December 25. For visitor center and park hours, please see the map on pages 6-7.

### Reaching the Parks

#### Walnut Canyon

Take I-40 exit 204, 7.5 miles (12 km) east of Flagstaff. Drive south 3 miles (5 km) to the Walnut Canyon Visitor Center. Be advised that Walnut Canyon's parking lot has a tight turn-around for towed vehicles. Vehicles longer than 40 feet (12 m) are not recommended.

#### Sunset Crater Volcano

From Flagstaff, take US 89 north for 12 miles (19 km). Turn right at the sign for Sunset Crater Volcano-Wupatki National Monuments. Drive 2 miles (3 km) to the Sunset Crater Visitor Center.

#### Wupatki

From Flagstaff, take US 89 north for 12 miles (19 km). Turn right at the sign for Sunset Crater Volcano-Wupatki National Monuments. Drive 22 miles (35 km) to the Wupatki Visitor Center.

### Entrance Fees

Entrance for adults (17 and older) is \$5.00 per person. Persons 16 and under are free. Special fees are charged for commercial tours.

### Passes

The Flagstaff Area National Monuments honor National Park Passes and Golden Eagle, Golden Age, and Golden Access Passports. Passes may be purchased at park entrance stations and visitor centers.

### Weather and Climate

Expect variable weather conditions throughout the parks. Short afternoon thunderstorms are common July through September. Expect high winds during March and April. At Wupatki, summer daytime temperatures can exceed 100 degrees. In winter months, heavy snowfall is not uncommon at Sunset Crater Volcano and Walnut Canyon.

### Pet Policy

Pets are not allowed on trails or in buildings. Pets may be exercised in parking areas and must be leashed at all times. Do not leave pets unattended outside vehicles. Summer temperatures may be fatal to pets left in vehicles.

### Contacting the Parks

Walnut Canyon Visitor Center: 928 526-3367

Sunset Crater Volcano Visitor Center: 928 526-0502

Wupatki Visitor Center: 928 679-2365

Visit us on the web at [www.nps.gov/waca](http://www.nps.gov/waca), [www.nps.gov/sucr](http://www.nps.gov/sucr), and [www.nps.gov/wupa](http://www.nps.gov/wupa).

# Getting to Know SCA



above: SCA intern Bennet VanOudenallen talks with a visiting school group.

PERHAPS YOU'VE COME INTO contact with a member of the SCA during your travels through the Flagstaff Area National Monuments. You can tell you've run into an SCA by his or her smile and the yellow and purple patch that adorns the SCA uniform sleeve. These interns are some of the thousands of members of the Student Conservation Association who assist the National Park Service and other land management agencies in preserving and protecting our public lands.

SCA started as a graduate thesis proposed by a young college student named Elizabeth Titus in the late 1950s. Liz thought there should be a way to blend the energy and adventuresome spirit of young people with the pressing needs of our national parks and forests. While developing her thesis, Liz came into contact with former National Park Service Director Horace Albright, who suggested that Liz do more than simply write a thesis. Albright set up some meetings and interviews, and in 1957, 53 student volunteers served at Olympic and Grand Teton National Parks.

45 years later, the SCA has placed over 40,000 volunteers in national parks, forests, monuments, and historic sites



in all 50 states. Today, SCA interns of all ages contribute over 1.2 million hours of service per year as interpreters, researchers, backcountry patrollers, foresters, and educators.

The Flagstaff Area Monuments currently serve as a home base for 2 to 6 interns a year, who take part in a variety of activities, like coordinating school groups, giving educational talks, monitoring park resources, leading hikes and backpacking trips, staffing the visitor centers, even writing and editing this newspaper!

Other SCA alumni also serve here in the Flagstaff Monuments. Diana Pennington, Interpretive Ranger and Education Coordinator at Walnut Canyon, started her National Park Service career as an interpretive intern at the Grand Canyon. Originally from Indiana, Diana was directed towards SCA by an advisor after graduating from college. Her desire to see the west, and her love of the outdoors, has kept her here ever since.

In contrast to Diana, current SCA intern Emmeline Altschul came to Walnut Canyon straight out of high school in Pittsburgh. Emmeline was

"SCA" continued on page 12

by Ben VanOudenallen, Wupatki SCA

## Traveling in Mountain Lion Country

Mountain lions live in these parks. Sightings are rare—an **attack is an extremely unlikely event**. There is far greater risk, in fact, of being struck by lightning. Lions do, however, frequent Walnut Canyon and potential exists for a hazardous encounter. To avoid danger, it is important for you to know how to behave in mountain lion country. The following advice will allow you to more safely share these parks with a truly spectacular animal.

### These actions have resulted in mountain lion attacks:

- 👤 People jogging or hiking alone. It is advisable to travel in groups.
- 👤 Children running or walking unattended by parents. Keep children close and within sight at all times.

### What to do if you see a mountain lion:

- 👤 Do not run. Do not approach it. Do not crouch down.
- 👤 Stop! Raise your arms and back away slowly, facing the lion. Leave the lion an escape route.
- 👤 Pick up small children. Their size and behavior make them vulnerable.
- 👤 If a lion is aggressive, wave your hands slowly, speak firmly or shout.
- 👤 If attacked, remain standing and fight back!

## Exploring Northern Arizona

The Flagstaff area contains some of the most fascinating natural and cultural sites in the Southwest. From red rock canyons to Hopi's high mesas, lush green forests to rugged desert, northern Arizona has something for everyone.

**Flagstaff Visitor Center** 928 774-9541 800 842 7293 Lodging, dining, events and area attractions. *Open daily.*

### Area Organizations

**Coconino National Forest** 928 527-3600 Information on camping, hiking, fishing and other recreational activities. *Open weekdays.*

**Hopi Reservation** 928 734-2411 *Hopi Tribal Council* Information on touring Hopiland. *Open weekdays.*

**Navajo Nation** 928 871-6436 928 871-7371 Information on visiting the Navajo reservation. *Open weekdays.*

**Museum of Northern Arizona** 928 774-5213 Center for American Indian artifacts and natural history specimens from the Colorado Plateau. *Open daily.*

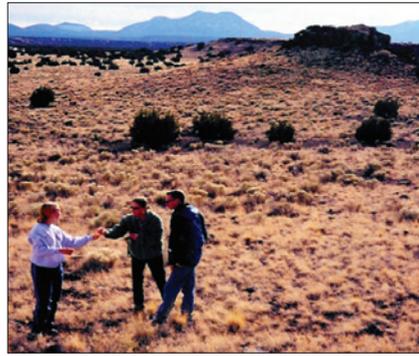
**The Arboretum at Flagstaff** 928 774-1442 Explore 200 acres of gardens and natural habitats with over 2,500 plant species. *Open daily.*

**Arizona Snowbowl** 928 779-1951 From mid-June thru mid-October, ride the Scenic Skyride to the top of the mountain for a view of alpine tundra and desert. *Open daily.*

For information about the Flagstaff Area National Monuments, call 928 526-1157.

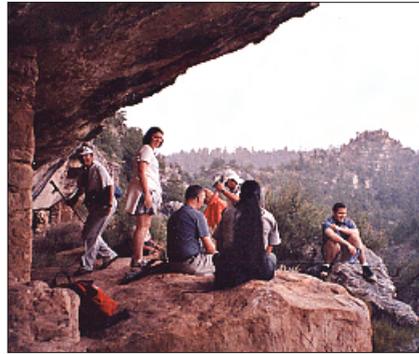


**above left:** visitors stroll Sunset Crater's Lava Flow Trail on a ranger-guided walk.



**above right:** SCA intern Candace Funk and hikers enjoy a Discovery Hike near Wupatki's Citadel Pueblo.

**right:** Visitors on a Ledge Hike pause to look out over Walnut Canyon.



## Calling All Junior Rangers

Hey, Kid ... Can you tell a mano from a metate? What does a ponderosa pine tree smell like? What would a story made from petroglyphs be about?

If you're 6 to 12 years old and think you might have an idea, then you're the kind of kid we need as a Junior Ranger. Ask at any of the three parks for a Junior Ranger workbook—it's full of activities that will help you have fun and learn about nature and people from long ago.



When you're done, bring it back to any visitor center. We'll look it over, then swear you in as a Junior Park Ranger and give you an official badge. Collect a badge at each park!

## It's Not Easy Being Green



In April 1999, the Department of the Interior and the Department of Energy formed a partnership called *Green Energy Parks: Making the National Parks a Showcase for a Sustainable Energy Future*. The partnership's goal is to promote the use of energy-efficient and renewable energy technologies in our national parks, while educating the public about these efforts.

### Going Green

The Flagstaff Area Parks are implementing environmentally friendly cleaning products and eliminating all toxic materials, such as chlorine bleach, from within the parks. We continue to fine-tune our recycling program.

### Taking Charge

By being environmental leaders, the National Park Service hopes to educate park visitors, local residents, businesses, and schools about the impact of conventional energy use on natural and cultural resources. What can you do to reduce energy use and adopt environmentally safe practices?

## Ranger Programs

Ranger programs are offered from Memorial Day through Labor Day and are subject to change. Programs may also be offered during winter months. Please inquire at the visitor centers for current program information.

### Walnut Canyon

Program	Day/Time	Duration	Description
<b>Coffee with a Ranger</b>	Saturday 8:00 am	30 minutes	Join a ranger to talk informally over coffee or hot chocolate.
<b>Ledge Hike*</b>	Saturday 10:00 am	3 hours	Journey back in time to a historic ranger cabin then hike down a side canyon to the ledge.
<b>Cabin Walk*</b>	Thursday & Sunday 10:00 am	2 hours	Stroll through ancient Sinagua farmland on your way to a historic ranger cabin.

### Sunset Crater Volcano

Program	Day/Time	Duration	Description
<b>Coffee with a Ranger</b>	Saturday & Sunday 7:30 am	2 hours	Join a ranger to talk informally over coffee or hot chocolate.
<b>Ranger's Choice</b>	Daily 10:00 am	15 minutes	Join a ranger for a discussion on a topic of his or her choice. Topics differ daily.
<b>Lava Trail Walk</b>	Daily 11:00 am	40 minutes	Meet at the Lava Flow Trail for a ¼ mile walk through Bonito Lava Flow's squeeze-ups and more.
<b>Seismograph Talk</b>	Daily 1:00 pm	15 minutes	Enjoy a talk on what an earthquake really is and how we record and locate them.
<b>Lava Flow Overlook Talk</b>	Daily 3:00 pm	15 minutes	Join a ranger at Bonito Lava Flow Pullout for a short talk on the eruption of Sunset Crater.

### Wupatki

Program	Day/Time	Duration	Description
<b>Discovery Hike*</b>	Saturday 8:30 am	3 hours	Hike to seldom seen archeological sites in the Wupatki back-country.
<b>Pueblo Overlook Talk</b>	Daily 11:00, 12:00, 1:00, 2:00, 3:00	15 minutes	Join a ranger for a look at the life of a Wupatki Puebloan in the 1100s.
<b>Ranger's Choice</b>	Saturday & Sunday Times vary	30 minutes	Join a ranger for a discussion on a topic of his or her choice. Topics differ daily.

\* – Reservations required. Please call the park visitor center for more information.

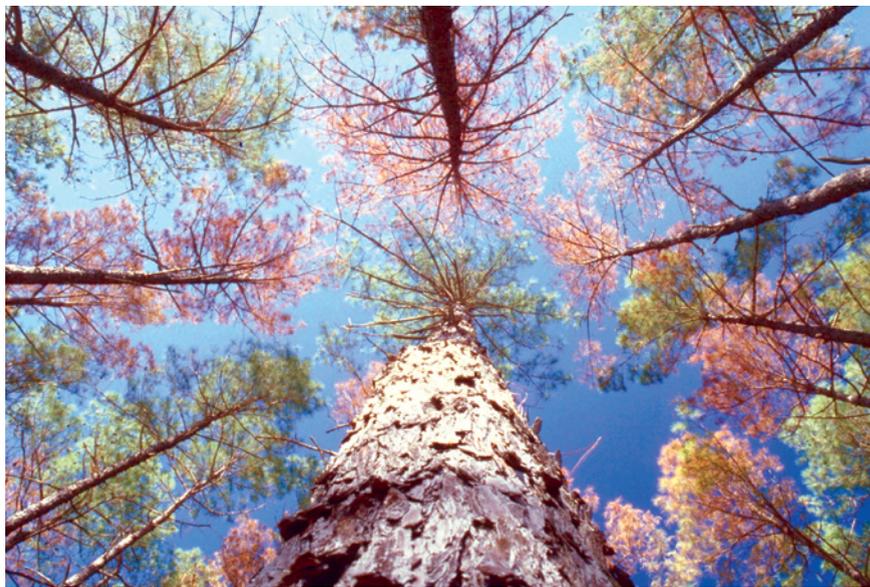
# Can't See the Forest for the Beetles



western pine beetle

If you drive north on Highway 89 between Flagstaff and Sunset Crater Volcano/Wupatki National Monuments you will see many brown and dying trees in the stands of ponderosa pines along the side of the road. Why are these trees, as well as others in northern Arizona and around the western United States,

turning brown? Some visitors to the Flagstaff Area National Monuments might attribute the problem to the drought conditions that plagued the western U.S. in 2002. While drought has weakened trees in the region, the real culprit killing the trees is an enemy small in size, at only about an eighth of an inch long. This year, the pine bark beetle has been making headlines all around the southwestern United States, and some experts predict the problem these little guys create may be here for some time to come.



## Want to Learn More?

Check out these sources for further reading on bark beetles:

- 👉 **University of Arizona Cooperative Extension**  
[http://ag.arizona.edu/extension/fh/bark\\_beetle.html](http://ag.arizona.edu/extension/fh/bark_beetle.html)
- 👉 **Interior West Bark Beetle Project**  
<http://www.usu.edu/beetle>
- 👉 **The Bugwood Network**  
<http://www.bugwood.org>
- 👉 **Ecological Restoration Institute at Northern Arizona University**  
<http://www.eri.nau.edu>
- 👉 **Flagstaff Bark Beetle Task Force**  
928 774-1868

There are about a dozen beetle species that attack ponderosa pines. The two species killing most of the local trees are the pine engraver or *Ips pini* (Say), and the western pine beetle or *Dendroctonus brevicomis*. The bark beetles affect trees in several ways. Often, the pine engraver beetle attacks the top half of the tree and the western pine beetle attacks the lower half. The attack starts when an adult is successful at entering the tree through the bark. The beetle then gives off chemical signals called pheromones, causing large numbers of beetles to join the attack on the tree.

Once in the tree, adult beetles mate and lay large numbers of eggs in the

by *Jeanne Stevens, Interpretive Park Ranger*

cambium layer under the bark. The eggs hatch into larvae and feed on the live inner bark or cambium of the tree, killing the tree. Once the larvae turn into adults, they depart for a new tree or another spot on the same tree and the cycle starts all over again.

Some bark beetles also carry spores of a specialized type of fungus in pouch-like structures in their heads. The spores dislodge and germinate as beetles chew through the bark. The fungus then blocks conductive vessels of the inner bark, causing tree leaves and needles to fade in color. After as little as a year, trees begin to turn reddish brown as a result. This is often the first evidence of bark beetle damage to a tree.

## PINE ENGRAVER

The pine engraver beetle often attacks smaller trees and the tops of larger trees. While their preferred host is fresh pine debris, pine engravers will also attack and kill living trees once their populations build up in nearby debris.

In this species, it is the males who initiate the attack and send out a chemical signal to call in other beetles. Adult engravers build galleries in trees, which are excavated grooves that etch or engrave the sapwood under the bark. Pine engraver galleries are open, relative to other species. These distinctive “engraved” galleries are what give this particular beetle its name.

## WESTERN PINE BEETLE

In contrast, the western pine beetle attacks living trees that are larger than six inches in diameter, often choosing large, old trees. Females carry out the initial attacks, usually at mid-trunk. Females signal an opportunity for attack by sending out pheromone signals to nearby beetles. Pitch tubes, which can be up to one inch in diameter, are clear indicators of a successful pine beetle attack. Pitch tubes are found in both bark and bark crevices.



Pitch tubes made by western pine beetles. The tubes, made of resin and boring dust, are usually the first sign of infestation on a tree.

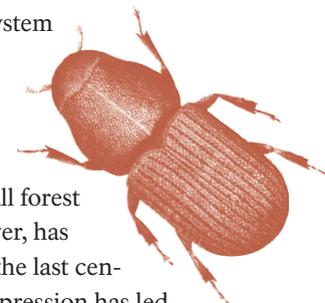
*top:* an unsuccessful attack by a western pine beetle. The beetle is ejected by tree resin and remains stuck to underside of pitch tube.

*bottom:* a successful attack. Tube is reddish brown with a clear opening. Photos courtesy USDA Forest Service Archives.

Prior to mating, the pine beetle constructs maze-like galleries that do not etch the wood. Unlike the engraver's open galleries, those of pine beetles are packed with boring dust.

## WHY NOW?

Many local residents question why the bark beetles have suddenly become a problem. The beetles are a natural part of the northern Arizona ecosystem and have evolved with ponderosa pine for millennia. Overall forest health, however, has decreased in the last century. Fire suppression has led to overcrowding in forests as well as drought. Under normal conditions,



“Bark Beetles” continued on page 10

# Renovating the Visitor Center Exhibits

VISITORS TO THE MONUMENTS have much to look forward to. Plans are underway to accomplish a long overdue upgrade of museum exhibits at Sunset Crater Volcano and Wupatki. The new exhibits will allow visitors to choose from a variety of interpretive media intended to aid self-discovery, educate visitors about resource fragility, and allow visitors to experience the Flagstaff area's cultural continuum from past to present.



Exhibit Specialist Sue Fischer is one of many experts

working on the project. "The exhibits at Wupatki and at Sunset Crater are twenty to thirty years old, and many of them have become obsolete," Fischer commented. "The largest factors contributing to the deci-

by Andy Heisinger, WNPA

sion to renovate was the presence of some inaccurate and potentially insensitive or culturally offensive material within some of the exhibits." Fischer also mentioned that new exhibits would support an influx of new information as discoveries are made. "Our knowledge of the area will change over time. With advances in computer technology, we can achieve greater exhibit flexibility, allowing us to rotate new or different materials and information into the exhibit." The long-term scope of the project is impressive. The new exhibits are expected to retain relevance for at least twenty years.

Consultations with a wide range of experts and American Indian tribes have been key to renovation planning. An array of park exhibit and interpretive specialists, rangers, archeologists, and curators has joined forces with a variety of partner organizations. "The



above: the Museum of Northern Arizona has partnered with the Flagstaff Area Monuments to produce the new exhibits. The museum houses much of the park collections.

Museum of Northern Arizona will be responsible for the design, fabrication and installation of the new exhibits," Fischer explained.

Wupatki and Sunset Crater Volcano patrons have become part of the planning process as well. A visitor survey conducted in the summer of 1998 has served as an important resource for the exhibit planners. Surveys have provided invaluable insight into what motivates people to visit the monuments, what monument features create the most visitor interest, and what expectations visitors hold as they explore these sites. Evaluations of exhibit content will be conducted with monument visitors, providing more opportunities for public involvement in the renovation process.

Funding for the new exhibits is coming directly from visitor fees. Project directors have slated exhibit installation at Sunset Crater Volcano for February 2004. Wupatki's exhibits will be installed in the fall of 2004. The Walnut Canyon Visitor Center is to be renovated and new exhibits installed in 2008. Everyone involved with the project is excited about the enhanced experience that will be afforded by these sweeping changes.



above: This outdated museum exhibit from the 1960's will under go renovation at Walnut Canyon National Monument. New exhibits will reflect updated research information on cultural, natural and historical resources.

# Protect Your Park

For your own safety, you are responsible for knowing and obeying park rules and regulations while visiting the Flagstaff Area National Monuments. If you have any questions, please contact a park ranger. Here are a few things to remember:

## Observe posted speed limits

Park roads are not designed for speed. Drive slowly, enjoy the scenery and watch for animals on the road. Be especially careful at dawn and dusk, when animals are most active.

## Wear your seatbelt

Buckle up. Seat belts are required by law.

Vehicles and bicycles must remain on designated public roadways. Always use marked parking areas and *never* stop in the roadway.

## Hunting and the possession of firearms are prohibited

## Do not approach or feed wildlife

Within the parks, animals as diverse as javelinas, pronghorn antelope, collared lizards and mountain lions make their homes. Park wildlife is protected by federal law. Remember, this is *wildlife*—keep a safe distance.

### Avoid contact with rodents

The white-footed deer mouse is a carrier of hantavirus and prairie dogs can carry plague.

Use caution and common sense around skunks, bats and other known carriers of rabies.

## Hydrate!

Heat kills. In summer months, prevent dehydration by drinking lots of water. Eat salty snacks. If you will be doing strenuous hiking, take one gallon of water per person, per day.

## Avoid lightning storms

Lightning storms are common to northern Arizona in summer months. Avoid danger by seeking shelter at the first indication of lightning. Avoid trees and open areas.

## “Bark Beetles”

continued from page 8

tion forces bark beetles out of trees. Currently, though, trees are in a stressed state and sap production is not at normal levels. Scientists from Northern Arizona University in Flagstaff report that many trees have stopped photosynthesizing and some trees are no longer transpiring at all. To transpire means to give off watery vapor, especially from the surface of leaves or needles.

The effects of the bark beetle infestation in northern Arizona are significant. Ponderosa and piñon pine trees are the main trees affected around the region. While it is difficult to know exactly how many trees are affected, in some Flagstaff neighborhoods, there is 100% tree mortality. In addition, approximately 100,000 piñon pines east of Flagstaff are dying. The brown, dead trees can remain standing for two to fifteen years and are standing fuel—a hazard which increases the danger of lightning strikes and wildland fire.

Once a tree is infested, it cannot be saved. While in many instances, only the top half of the tree appears dead, the lower half will be killed shortly thereafter. Experts do not recommend trimming just the top of the tree in such cases. For homeowners looking to save trees, local experts say pre-

ventative measures will help the most. Foresters recommend lowering tree density through thinning. Be sure to thin trees in late summer and fall in order to allow debris to dry. This makes tree material less attractive to bark beetles. Consult with a certified forester for appropriate thinning techniques.

At present, we are left with many more questions than answers about the effects of bark beetles on trees in northern Arizona. Historically, wildfires have naturally thinned forests in

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**“We know that bark beetle attacks will ultimately destroy many large forested areas in northern Arizona.”**

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northern Arizona, leaving stands of pines and large open *parks*, or forest areas devoid of trees. We know that bark beetle attacks will ultimately destroy many large forested areas in northern Arizona and that the effects will be ecological, social, economic and more. It is difficult, however, to predict the full range of impacts from the loss of large tracts of forested areas. How do you think bark beetles will change our environment? How will the loss of forests affect our lives?

## Park News In Brief

### Southern Colorado Plateau Learning Center

Imagine living laboratories where science and education combine to increase our knowledge and understanding of the world and our relationship to it. Accomplish this not by new construction, but by organizing and sharing the talents and facilities already available through national parks and their neighbors, including universities, state agencies, and community organizations. To realize this vision of the future, the National Park Service is creating a network of 32 learning centers across the nation.

The Southern Colorado Plateau Learning Center, hosted by the Flagstaff Area National Monuments and Petrified Forest National Park, will be one of these. Goals are to facilitate research and to share the resulting scientific information with the public. Stay tuned for details.



mullein

### Earthscope Project

"From a distance the red cinders seem to be on fire," John Wesley Powell wrote of Sunset Crater while on a U.S. Geological Survey expedition in 1885. He named the volcano "Sunset Peak." To the Hopi, Sunset Crater is "Red Hill" or Polotsmo, home of the Kana'a katsinas. Through history, Sunset Crater has been many things to many people. Now Sunset Crater Volcano National Monument is poised to take on a new role at the forefront of research in the physical sciences. The monument has been designated a pilot park to host instrumentation and interpret geophysical and geological findings of the National Earthscope Project. This multidisciplinary, multi-partner research project will investigate the structure and evolution of the North American continent and the physical processes controlling earthquakes and volcanic eruptions.

See [www.earthscope.com](http://www.earthscope.com) for more details.

### New on the Web



Find in-depth nature and science information on the Flagstaff Area Monuments

with our new Natural Resource Profile web pages! Search an online catalog of Walnut Canyon's exhibit collections or take a virtual volcanic field trip on Bonito Lava Flow. From the park home page, follow the *Nature & Science* link under *Park Resources*.

# Western National Parks Association

## The Story of WNP

Western National Parks Association (formerly Southwest Parks and Monuments 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.

### Introducing the Parks

#### Official Map and Guides

Wupatki/Sunset Crater Volcano and Walnut Canyon Park maps, safety, regulations, general orientation and introduction to the natural and cultural history of the parks. **\$.25 each.**

#### Sunset Crater Volcano National Monument

*Rose Houk*

A look at the youngest of over 600 volcanoes found in the San Francisco volcanic field. 16 pages. **\$3.95**

#### Wupatki National Monument

*Susan Lamb*

An overview of the natural and human history of Wupatki, from past to present. 16 pages. **\$3.95**

#### Walnut Canyon

*Scott Thybony*

Guide to the cultural and natural history of Walnut Canyon National Monument. 16 pages. **\$3.95**  
Deutsch translation: **\$4.95**

#### Guide to Sunset Crater and Wupatki

*Scott Thybony*

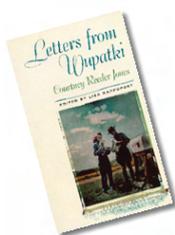
An excellent road guide to the natural and cultural features of both national monuments. 48 pages. **\$5.95**

### The Parks In-Depth

#### Wupatki and Walnut Canyon: New Perspectives on History, Prehistory, and Rock Art

*David Grant Noble*

Research and analysis has provided new insights presented here in a concise overview. 40 pages. **\$8.95**



#### Letters from Wupatki

*Courtney Reeder Jones*

A compilation of letters written to friends and family by the wife of Park Service caretaker Davy Jones during the 1930s. A wonderful glimpse into life at Wupatki in the days before 240,000 visitors a year. 151 pages. **\$14.95**

## Bookstore Sales

Bookstore sales are WNP's primary source of income and support the parks' interpretive programs. The following publications, available from WNP, are recommended for making the most of your visit to the Flagstaff Area National Monuments.

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

### Volcanoes of Northern Arizona

*Wendell Duffield*

An easy-to-understand guide to northern Arizona volcanoes with beautiful graphics and color aerial photographs. Includes several self-guided road tours. 68 pages. **\$14.95**

### Cultures of the Southwest

#### Those Who Came Before: Southwestern Archeology in the National Park System

*Robert and Florence Lister*

This is an excellent and comprehensive overview of southwestern archeological sites in the National Park System. 184 pages. **\$16.95**

A companion video program is also available on VHS for **\$19.95**

#### Prehistoric Cultures of the Southwest Series

*Rose Houk*

Each booklet in this five-part series provides an introduction to the evolution, achievements, and lasting legacy of a distinct ancient culture. Please specify *Anasazi, Hohokam, Mogollon, Salado, or Sinagua*. 16 pages. **\$3.95 each.**

### Field Guides

#### 50 Common Birds of the Southwest

*Richard Cunningham*

An easy reference to the more commonly seen species of the Southwest. 64 pages. **\$7.95**

#### 70 Common Cacti of the Southwest

*Fierre Fisher*

This perennial best-seller describes and depicts 70 common cacti species of the Southwest deserts. 80 pages. **\$7.95**

#### 50 Common Reptiles and Amphibians of the Southwest

*Jonathan Hanson and Roseann Beggy Hanson*

Excellent color photographs make identification easy. 64 pages. **\$7.95**

#### Roadside Geology of Arizona

*Halka Chronic*

Explains the spectacular geology of Arizona as seen from a car at specific points along highways throughout the state. 321 pages. **\$18.00**



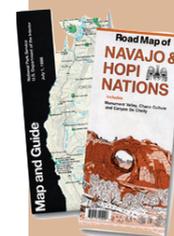
## Maps

### Guide to Indian Country Map

Covers the Four Corners area outlining Indian reservations, national parks and monuments, and geologic features. **\$3.95**

### Recreational Map of Arizona

Detailed travel map with more than 400 recreational sites and 500 points of interest listed. **\$3.95**



### Road Map of Navajo and Hopi Nations

Includes detailed maps of Monument Valley, Chaco Culture, and Canyon de Chelly. **\$2.95**

## Hiking and Travel Guides

### The Guide to National Parks of the Southwest

*Nicki Leach*

Authoritative interpretive guide to 52 National Park Service sites in Arizona, Utah, Colorado, New Mexico, and Texas. Color. 80 pages. **\$9.95**

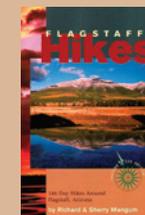
### The Back Roads

This Arizona Highways book outlines 20 exciting back road tours for the whole family. 137 pages. **\$12.95**

### Flagstaff Hikes

*Richard and Sherry Mangum*

146 day hikes around Flagstaff, Arizona. 288 pages. **\$16.95**



## Placing Your Order

### By Phone

We encourage you to order by phone to get the publications best suited to your needs. To place an order, please call 928 526-1157, extension 226.

### By Mail

Add up the total amount of your order plus shipping cost (see *table at right*). Include a check payable to WNP, or credit card number and expiration date. Visa and Mastercard accepted. Send orders to: WNP, 6400 N. Highway 89, Flagstaff, AZ 86004. Prices and availability subject to change.

### Shipping Costs

Item Total	Shipping Cost
Up to \$4	\$2.00
\$4.01 - \$15	\$4.00
\$15.01 - \$25	\$5.00
\$25.01 - \$50	\$6.00
\$50.01 - \$100	\$6.50
Over \$100	Actual postage + \$1.00
International shipments, add <b>\$1.00.</b>	



National Park Service  
U.S. Department of the Interior

Flagstaff Area National Monuments  
6400 N. Highway 89  
Flagstaff, AZ 86004



Western National Parks Association  
12880 N. Vistoso Village Dr.  
Tucson, AZ 85737

## EXPERIENCE YOUR AMERICA

### “CCC”

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earn a living. It also realized Roosevelt’s desire to conserve the human and natural resources of the nation. Roosevelt’s hopes to assist the unemployed are echoed in the words of Albert Spudy. “Why did I go? I loved the work, and I thought I could make something better out of myself by going to the three Cs,” he remarks.

Nationwide, the CCC accomplished wonders: enrollees built 63,256 buildings, 3,116 lookout towers and 28,087 miles of trails; erected 405,037 signs, markers, and monuments; planted 45 million trees; and fought countless fires. They developed more than 800 state parks. Thousands learned trades that lasted a lifetime. In addition, the CCC provided long-lasting friendships and a sense of loyalty and pride. It seems Roosevelt’s program was a success.

by Carol Kruse, Interpretive Specialist

The United States entry into World War II foreshadowed the end of the Civilian Conservation Corps. Congress terminated the program on July 2, 1942. The CCC legacy, however, lives on in the nation’s landscape and in the hearts of its members and their descendants. There are CCC alumni chapters throughout the country (see [www.cccalumni.org](http://www.cccalumni.org)). And efforts continue to preserve the physical evidence of the program. The Flagstaff Area National Monuments and 11 other parks in the southwest have been awarded a Save America’s Treasures Grant to conserve CCC items, including furniture, light fixtures, signs, photographs, and personal items.

This year marks the 70th anniversary of the Civilian Conservation Corps. The “CCC boys” were 18 to 23 years old—most are now in their 80s. Please join the National Park Service in honoring their hard work and their enduring accomplishments.



above: CWA work camp in Deadman’s Wash, Wupatki, circa 1933.

### “Getting to Know SCA”

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looking for an opportunity to explore career options and figure out what she wanted to study in college. Emmeline happened across an SCA position listing, and serendipitously came into a position she “loves”.

Does an SCA internship sound like work you might also love? If you have an interest in the Student Conservation Association or working with the parks, talk to one of those friendly SCA interns, or visit the SCA for information at [www.theSCA.org](http://www.theSCA.org).