Grand Canyon

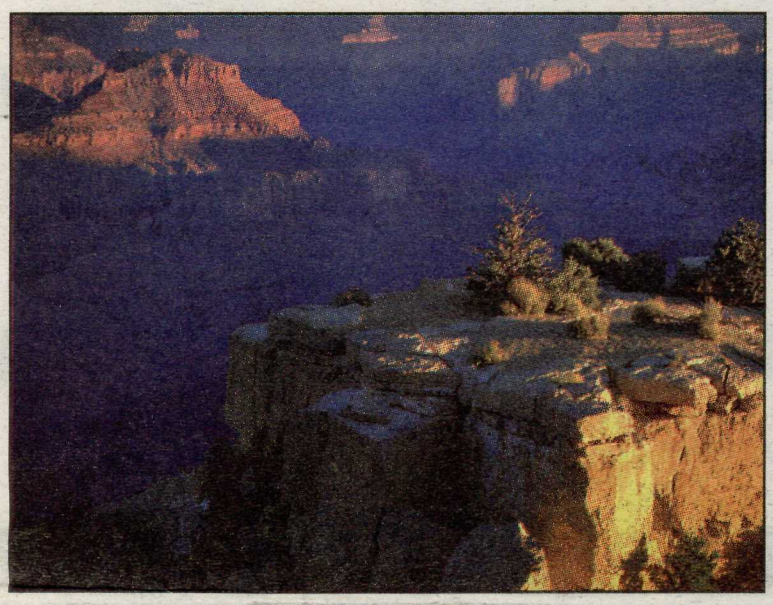
National Park Service
U.S. Department of the Interior
Grand Canyon National Park

The Guide

South Rim: Sept. 7–Nov. 30, 2004

Also available in Français, Deutsch, Español, 日本語

Welcome to Grand Canyon National Park



The Grand Canyon is more than a great chasm carved over millennia through the rocks of the Colorado Plateau. It is more than an awe-inspiring view. It is more than a pleasuring ground for those who explore the roads, hike the trails, or float the currents of the turbulent Colorado River.

This canyon is a gift that transcends what we experience. Its beauty and size humble us. Its timelessness provokes a comparison to our short existence. In its vast spaces we may find solace from our hectic lives.

The Grand Canyon we visit today is a gift from past generations. Take time to enjoy this gift. Sit and watch the changing play of light and shadows. Wander along a trail and feel the sunshine and wind on your face. Attend a ranger program. Follow the antics of ravens soaring above the rim. Listen for the roar of the rapids far below Pima Point. Savor a sunrise or sunset.

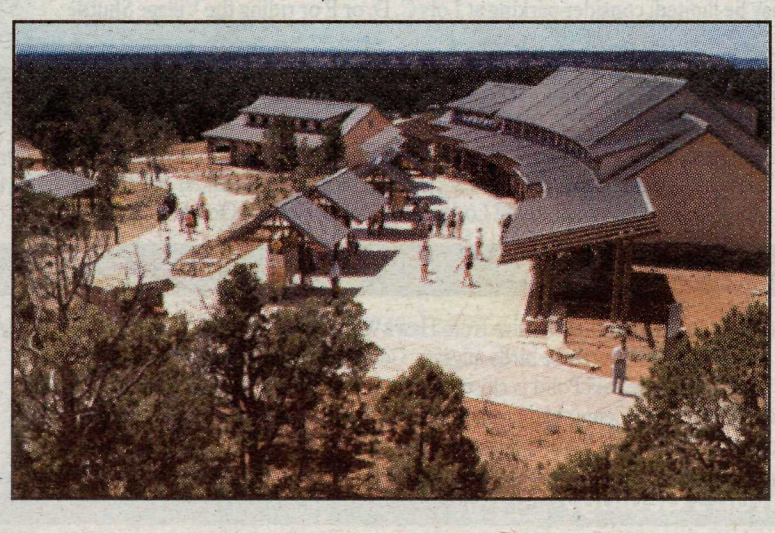
As the shadows lengthen across the spires and buttes, time passing into the depths of the canyon, understand what this great chasm passes to us: a sense of humility born in the interconnections of all that is and a willingness to care for this land. We have the responsibility to ensure that future generations have the opportunity to form their own connections with Grand Canyon National Park.

Where's the Visitor Center?

You cannot drive to the Visitor Center

The National Park Service designed Canyon View Information Plaza, including the new Visitor Center, as the terminus for a mass-transit system that is not yet in operation. To get to the Visitor Center near Grand Canyon Village:

- **Park Your Vehicle**
  Parking lots are shown on the map on pages 8–9.
- **Ride the free shuttle buses**
  Shuttle bus routes are shown on the map on pages 8–9.
  or
- **Park at Mather Point**
  Walk the 300 yards (275 meters) to the Visitor Center.
  Accessibility shuttle available.



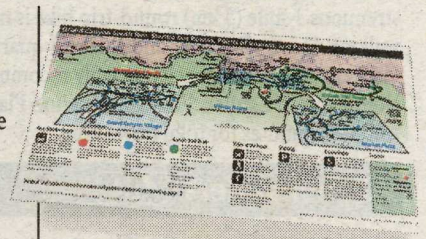


Thinking about hiking?

Fall means changing weather—from the heat and thunderstorms of early September to the first snowstorms in November.

Successful hikers:

- Read and follow the suggestions and regulations on pages 12–13.
- Plan their hike, check the weather before they start, and go prepared.
- Go slowly, rest often, and maintain correct body temperature.
- Eat salty foods and drink water or sports drinks.



South Rim Map on pages 8–9

Inside:

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Mountain Standard Time

What Time Is It?

Arizona remains on Mountain Standard Time (MST) year-round. Daylight Savings Time is not observed, except on the Navajo Reservation.

Use Caution Near the Edge!

Footing can be dangerous.

Emergency • 911

24 hours-a-day
dial 911 from any phone,
9-911 from hotel phones.

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

Ranger Programs

The National Park Service invites you to enjoy the following free programs. We hope that learning about Grand Canyon and its resources will lead to a greater appreciation of your

Grand Canyon Village

Activity	Location	Time	Duration	Frequency
Cedar Ridge Hike	Program ends October 2			
With a ranger descend 1,140 feet (347m) below the rim on the unpaved South Kaibab Trail to Cedar Ridge. This strenuous 3-mile (5 km) round-trip hike is not recommended for people with heart or respiration problems or difficulty walking. Sturdy footwear and at least 1 quart (1 liter) of water per person are required (more if planning to hike farther). Hat, sunscreen, and snacks strongly recommended. Trailhead is closed to private vehicles. Ride the Village Route shuttle bus to Canyon View Information Plaza and cross the plaza to the Kaibab Trail Route shuttle stop by 6:40 a.m. Allow 45 minutes for total travel time.	South Kaibab Trailhead	7:30 a.m.	3–4 hours	Daily
Alien Invaders	Program ends October 28			
Join the Habitat Restoration Team in its continuing battle against non-native plants. Assist revegetation crews to stop the invasion of habitat-snatchers! Learn about native and non-native plants while helping to restore the natural beauty of Grand Canyon National Park. Activities may include eradicating non-native plants or collecting native plant seed for propagation and restoration. Bring a hat and at least one quart (liter) of water per person. Ages 5 and up are encouraged. Ideal for families and a great way to participate in *your* national park! Meet in front of Maswik Lodge. Park in Lot E or ride the free Village Route shuttle bus to Maswik Lodge.	In front of **Maswik Lodge**	8:30 a.m.	2 hours	Tues. Wed. Thurs.
Fossil Walk: Remnant Impressions	Program ends October 30			
Walk among brachiopods, sponges, and other marine creatures that thrived on this part of the continent 260 million years ago, before the age of the dinosaurs. This easy 1/2-mile (0.8-km) one-way walk explores an exposed fossil bed along the rim. Parking may be limited; consider parking at Lots C, D, or E or riding the Village Route shuttle bus to the Bright Angel Lodge stop. **No program October 19–21.**	Patio on rim side of **Bright Angel Lodge**	9:00 a.m.	1 hour	Daily
History Walk: The Canyon's Quilted History	Program starts October 31			
Enjoy a leisurely stroll with a ranger sharing stories about the colorful people and events in Grand Canyon's historic district. This is an easy 1/2-mile (0.8-km) walk on paved trails. During inclement weather, program may be presented in the historic Bright Angel Lodge. Parking may be limited; consider parking at Lots C, D, or E or riding the Village Shuttle to the Bright Angel Lodge stop.	Patio on rim side of **Bright Angel Lodge**	9:00 a.m.	1 hour	Daily
Condor Talk: Wings over the Canyon				
What highly endangered bird with a 9-foot wingspan is often spotted around Grand Canyon? The California condor! Learn about these wonderful birds in a 30-minute talk at the canyon's rim. Parking may be limited; consider parking at Lots C, D, or E or riding the Village Route shuttle bus to the Bright Angel Lodge stop. **No programs October 19–21.**	In front of **Lookout Studio** near the **Bright Angel Lodge**	9:30 a.m. 3:30 p.m.	30–45 min. 30–45 min.	Daily Daily
	Afternoon programs end October 30			
Raptors in Flight	Programs end October 27			
Observe the fall hawk migration over Grand Canyon with a representative from HawkWatch International. Learn to identify raptors in flight and find out more about why and how these birds migrate. Consider staying afterward to sharpen your identification skills. Binoculars are recommended. Yaki Point is closed to private vehicles. To arrive on time, ride the Village Route shuttle bus to Canyon View Information Center and cross the plaza to the Kaibab Trail Route shuttle bus stop by 9:50 a.m. for the morning program or 2:05 p.m. for the afternoon program.	**Yaki Point** shuttle stop	10:15 a.m. and 2:30 p.m.	30–45 min.	Sun. Mon. Wed. Fri.
Introduction to Grand Canyon's Geology				
Why is the Grand Canyon so deep, wide, and grand? Why does it exist only here? Enjoy a short talk with a ranger and learn how Grand Canyon was formed. The program meets at the Visitor Center at Canyon View Information Plaza, which is not reachable by vehicle; plan enough time to arrive by Village Route shuttle bus. **No programs October 19–21.**	**Visitor Center** at Canyon View Information Plaza	10:30 a.m. and 3:00 p.m.	30–45 min. 30–45 min.	Daily Daily
	Afternoon programs end October 30			
Geology Walk: Read the Rocks				
There is only one Grand Canyon. How did it come to be? Walk with a ranger along the canyon rim and learn how to read the Earth's history in the rocks of the canyon. This is a leisurely 1/2-mile (0.8-km) walk on a paved trail. Parking may be limited—plan enough time to arrive by Village Route shuttle bus at Yavapai Observation Station. **No programs October 19–21.**	Bicycle rack outside **Yavapai Observation Station**	12:30 p.m.	1 hour	Daily
Ranger's Choice				
The topic of this program changes daily. Each ranger discusses an intriguing Grand Canyon subject including proven hiking strategies, unique wildlife, ethnobotany, endangered species, Southwestern cultures, or fire ecology. Program may include a short walk on a paved path. The Visitor Center is not reachable by vehicle; plan enough time to arrive by Village Route shuttle bus. **No programs October 19–21.**	**Visitor Center** at Canyon View Information Plaza	1:30 p.m.	30–45 minutes	Daily

national park. Several of these programs require riding the free shuttle bus to get to the meeting location. Plan sufficient time to arrive before the start of the program. Many programs, with the exception of the Evening Program, are cancelled October 19–21 to allow our rangers to attend training.

Grand Canyon Village, continued

Activity	Location	Time	Duration	Frequency
Rim Walk: Life on the Edge				
Join a ranger for a leisurely walk along the rim of Grand Canyon to explore fascinating natural or colorful human history. One day you may explore the contributions of the Civilian Conservation Corps. Another day you might discover what makes this the grandest of all canyons. Yet another ranger may reveal the inner workings of the Southwestern pygmy forest on this high plateau. The walk varies with the ranger leading it. This is an easy 1/2-mile (0.8 km) walk on a paved trail. Parking may be limited; consider parking at Lots C, D, or E or riding the Village Route shuttle bus to the Train Depot stop. **No programs October 19–21.**	Flagpole on the rim behind **El Tovar Hotel**	1:30 p.m.	1 hour	Daily
Nature Walk: Share Nature with a Ranger	Program ends October 2			
Join a ranger to explore Grand Canyon's interesting and diverse ecosystems with a leisurely 1/2-mile (0.8 km) walk on a paved trail. Parking may be limited; plan to arrive by Village Route shuttle bus to Yavapai Observation Station.	Bicycle rack outside **Yavapai Observation Station**	2:30 p.m.	1 hour	Daily
Kolb Studio: Images of the Past (by registration only)	Program starts October 31			
The Kolb brothers played an integral role in the early years of Grand Canyon. Kolb Studio, built in 1904, spills nearly five stories down the canyon wall. It was from here that the Kolb brothers photographed countless visitors over the years as they began their mule trips into the canyon. Join a ranger for a closer look at the life and historical adventures of the Kolb brothers at Grand Canyon. Allow 30 to 45 minutes. Register at Kolb Studio for the tour prior to that day's program, or by calling 638-2771. Maximum of 12 participants.	**Kolb Studio**	3:30 p.m.	30–45 min.	Daily
Evening Program				
The perfect way to end your day at the Grand Canyon! Relax beneath the stars or inside once the evenings turn colder and enjoy a ranger presentation on a significant aspect of the canyon's fascinating natural or cultural history. For this evening's topic check the schedules posted around the park or call 638-7610. Dress warmly and bring a flashlight. **This program moves indoors to Shrine of the Ages Auditorium on September 26.**	**Mather Amphitheater,** behind Park Headquarters off the Rim Trail from Parking Lot A (until September 25)	7:30 p.m.	1 hour	Daily
	Shrine of the Ages Auditorium (beginning September 26)	7:30 p.m.	1 hour	Daily
Special Activities				
Additional ranger programs and special events will be offered as staffing allows. Check park bulletin boards for signs or inquire at the Visitor Center at Canyon View Information Plaza for upcoming events.				

Desert View—Tusayan Museum (3 miles/5 km west of Desert View Point)

Glimpses of the Past				
Consider the ancient people who called Grand Canyon "home" 800 years ago. How did they survive in this harsh climate? A 0.1-mile (0.2-km) walk on a flat, paved trail affords access to the remains of an ancestral Puebloan village. **No programs October 19–21.**	**Tusayan Museum**	11:00 a.m. and 1:30 p.m.	45–60 min. 45–60 min.	Daily Daily
Raptors in Flight	Programs end October 26			
Observe the fall hawk migration over Grand Canyon with a representative from HawkWatch International. Learn to identify raptors in flight and find out more about why and how these birds migrate. Consider staying afterward to sharpen your identification skills. Binoculars are recommended.	**Lipan Point**	10:15 a.m. and 2:30 p.m.	30–45 min. 30–45 min.	Tues. Thurs. Sat.

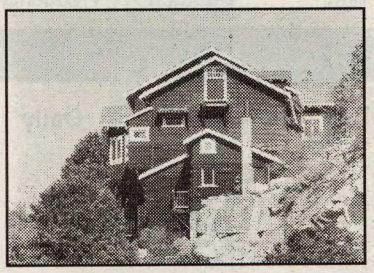
Phantom Ranch

Ranger Programs	Programs end November 27			
Programs are given daily at Phantom Ranch, reachable only by hiking or riding the mules to the bottom of the canyon. Talks cover a wide range of natural and cultural history topics. Upon arrival check the Bright Angel Campground bulletin board or the Phantom Ranch Canteen for program locations and subjects. **No programs October 16–21.**	**Phantom Ranch**	4:00 p.m. and 7:30 p.m.	45–60 min. 45–60 min.	Daily Daily

Lightning icon: All outdoor programs are subject to cancellation in inclement weather or when lightning danger is present. **Wheelchair icon:** These programs are wheelchair accessible with assistance. Wheelchairs are available for loan at the Visitor Center at Canyon View Information Plaza. For programs meeting at the Visitor Center, handicap access is by wheelchair or accessible shuttle from Mather Point parking lot. **Kid-friendly icon:** These family-oriented programs are ideal for meeting the ranger program requirement for the Grand Canyon's Junior Ranger badge and certification. Any ranger program, however, may serve the requirement on page 2 of the *Junior Ranger Activity Booklet*. **Children must be accompanied by an adult on all programs.**

Enjoying Grand Canyon

Information Centers



Kolb Studio

Once the home and business of the Kolb brothers, pioneering photographers at Grand Canyon, this building has been restored. Visit the free art exhibits in the auditorium and shop in the bookstore. Kolb Studio is located in the Village Historic District, at the Bright Angel Trailhead. Open daily 8:00 a.m. to 6:00 p.m.



Canyon View Information Plaza

Don't forget to visit the Visitor Center and bookstore at Canyon View Information Plaza. Reachable only by free shuttle bus, a one-mile (1.6-km) walk or bicycle ride from Market Plaza on the new Greenway Trail, or a short walk from Mather Point. The Visitor Center is open daily 8:00 a.m. to 5:00 p.m. Bookstore: 8:00 a.m. to 6:00 p.m. Outdoor exhibits may be viewed at any time.



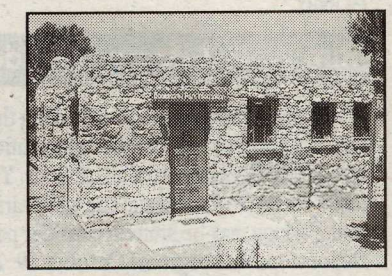
Yavapai Observation Station

Yavapai Observation Station, located one mile east of Market Plaza, contains temporary exhibits about the fossil record at Grand Canyon and features wonderful views. Educational materials about the park and region are sold in the nonprofit bookstore. Open daily 8:00 a.m. to 7:00 p.m. until October 14. Beginning October 15, open daily 8:00 a.m. to 6:00 p.m.



Tusayan Museum

A visit to Tusayan Ruin and Museum provides a glimpse of ancestral Puebloan life some 800 years ago. The museum is located three miles (5 km) west of Desert View and is open daily 9:00 a.m. to 5:00 p.m. Admission is free. A self-guiding trail leads through the adjacent 800-year-old ruin. See page 3 for information on programs originating here.



Desert View Bookstore/Park Information

Orientation, park information, and books are available at Desert View Bookstore/Park Information, located at the park's east entrance. Open daily 9:00 a.m. to 5:00 p.m., as staffing permits.

Grand Canyon Music Festival



The Grand Canyon Music Festival presents its twenty-first annual series of eight mostly chamber music concerts at the Shrine of the Ages on the South Rim. The festival hosts acclaimed musicians with programming that emphasizes the diversity of chamber music and celebrates the environment and inspiration of this majestic World Heritage Site.

Concert dates for this season are September 10, 11, 15, 17, 18, 22, 24, and 25. Each night's program is available on the Music Festival website www.grandcanyonmusicfest.org or by calling 800-997-8285. Concerts on September 10 and 11 showcase the works of local young composers who participate in the Native American Composers Apprentice Project, in addition to the scheduled performers.

Tickets are $18 for adults and $8 for children and students. Please, no children under six. Tickets may be obtained on the internet or over the phone. If you are already in the park, tickets are available at the Books and More Store at Canyon View Information Plaza, from the concierge at El Tovar Hotel, or by calling 638-9215. Tickets may be available at the door, although many concerts sell out.

Concerts are held indoors in the Shrine of the Ages Auditorium with excellent seating throughout. Programs on September 10 and 11 begin at 7:00 p.m., while all other performances start at 7:30 p.m.

The Grand Canyon Music Festival is pleased to bring performers of this caliber to our national park. If you have any questions or would like to be added to the mailing list, call the toll-free number above or visit the website.

Grand Canyon National Park Foundation

The Grand Canyon National Park Foundation is a nonprofit organization that preserves, protects, and enhances Grand Canyon National Park by promoting citizen stewardship through philanthropy, volunteerism, and public education. In the past several years, the foundation has raised over $8 million to support a variety of projects and programs:

- The first segments of the Greenway biking and pedestrian trails—all wheelchair accessible.
- Renovation of historic buildings and historic boats.
- Critical research and support for condors, mountain lions, native plants, and other species.
- Environmental education and interpretive programs.
- A fellowship program for university students pursuing careers in natural resource management.

Learn about the full range of their work and how you can be involved by visiting www.gcnpf.org, calling (928) 774-1760, or writing: Grand Canyon National Park Foundation, 625 North Beaver Street, Flagstaff, AZ 86001.

By working together, we continue to ensure that this World Heritage Site is forever grand!

Sunrise Sunset

Date	Sunrise	Sunset
Sept. 7	6:05 a.m.	6:47 p.m.
Sept. 12	6:08 a.m.	6:41 p.m.
Sept. 19	6:14 a.m.	6:29 p.m.
Sept. 26	6:20 a.m.	6:19 p.m.
Oct. 3	6:26 a.m.	6:09 p.m.
Oct. 10	6:31 a.m.	5:59 p.m.
Oct. 17	6:38 a.m.	5:49 p.m.
Oct. 24	6:44 a.m.	5:41 p.m.
Oct. 31	6:51 a.m.	5:33 p.m.
Nov. 7	6:58 a.m.	5:27 p.m.
Nov. 14	7:05 a.m.	5:21 p.m.
Nov. 21	7:12 a.m.	5:17 p.m.
Nov. 28	7:18 a.m.	5:15 p.m.

Full Moon

Date	Moonrise
Sept. 28	6:36 p.m.
Oct. 27	5:30 p.m.
Nov. 26	5:05 p.m.

All times are Mountain Standard Time.

Enjoying Grand Canyon

Personalize Your Grand Canyon Experience

There's not one preferred way to experience Grand Canyon. Individual interests, available time, and the weather can all influence a visit. The following list of activities is provided to assist you in personalizing your Grand Canyon experience. To locate places mentioned below, refer to the maps on pages 8–9 and 16. An *Accessibility Guide* for visitors with limited mobility is also available at the Visitor Center at Canyon View Information Plaza.

Activity	Option
Attend Free Ranger Programs	• Listed on pages 2–3 • Junior Ranger program described below
Visit Scenic Hermit Road 8 miles (13 km) one-way. Allow at least 2 hours round trip.	• Ride the free shuttle from the Village Route Transfer • Views of river at Hopi, Mohave, and Pima Points • Visit Hermits Rest — historic landmark with view of river • Closed to private vehicles
Visit Scenic Desert View Drive 25 miles (40 km) one-way	• Tour by private vehicle or commercial bus • Views of river at Moran Point, Lipan Point, Desert View • May exit the park to the east — Cameron and Highway 89
Visit an Information Center or a Museum	• The park offers a variety of museums and visitor centers that house exhibits and provide park information • See adjacent page for more information
Hiking	
Walk Part of the Rim Trail	• See map pages 8–9; described on page 12 • Trail may be accessed at many locations along rim
Day Hike into Grand Canyon	• See pages 12–13 for information on trails and safety • It will take twice as long to hike up as it does to hike down • Do not attempt to hike to the river and back in one day
Backpack in Grand Canyon	• Permit and fees required (see page 13) • Inquire at Backcountry Information Center (8 a.m.–noon and 1–5 p.m.)

Fall Hawk Migration over Grand Canyon



HawkWatch International

Representatives of HawkWatch International will be recording the fall hawk migration at Lipan and Yaki Points on Desert View Drive east of Grand Canyon Village daily from 10:00 a.m. to 4:00 p.m. through November 5. Visitors are welcome to join in the count or to learn to identify migrating hawks, falcons, and eagles. However, be aware that if staffing is low or bird numbers high, the HawkWatch researchers may not be able to work with you.

To join the experts, park at Lipan Point near Desert View or ride the Kaibab Trail shuttle bus to Yaki Point. At either location walk a short distance to the southwest (left) along the rim. In addition to these informal contacts, take part in the *Raptors in Flight* talks listed with the ranger programs on page 2.

Kolb Studio Art Exhibits

Through September 28—In the Fifth World: Portrait of the Navajo Nation

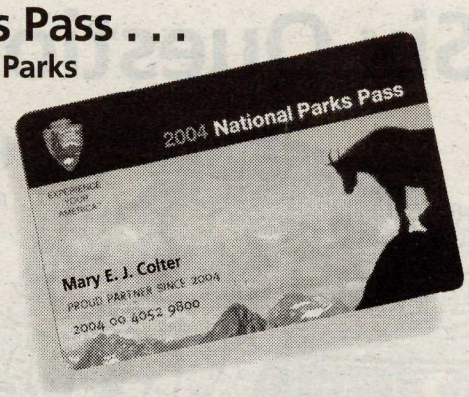
In the Fifth World: Portrait of the Navajo Nation portrays contemporary life on the Navajo Reservation through the photography of Kenji Kawano and Adriel Heisey. Admission is Free.

Opening November 3—Writing Down the River

Writing Down the River captures the experience of a white-water adventure through Grand Canyon on the Colorado River. Lavish color photography and eloquent words from some of today's best women writers. Admission is Free.

National Parks Pass . . .

Good at All National Parks



The National Park Service proudly offers the National Parks Pass. This pass admits the pass holder and any accompanying passengers in a private vehicle to all national parks for one year.

The National Parks Pass can be purchased for $50 at park fee stations, by calling 1-888-GO-PARKS, online at www.nationalparks.org, and through cooperating associations, such as the Grand Canyon Association (800-858-2808). You can apply your park entry fee toward the National Park Pass.

Would you like to be a Junior Ranger?



Grand Canyon National Park offers a Junior Ranger program for children ages 4–14.

To take part in the program, pick up a Junior Ranger booklet at the Visitor Center at Canyon View Information Plaza, Yavapai Observation Station, or Tusayan Museum information desk and complete the activities listed for the appropriate age level.

Once completed (don't forget attendance at one or more ranger programs) bring the booklet back to the Visitor Center at Canyon View Information Plaza or Tusayan Museum to receive an official Junior Ranger certificate and badge.

Wildlife Alert

Grand Canyon's wild deer and elk can be especially aggressive during the fall!

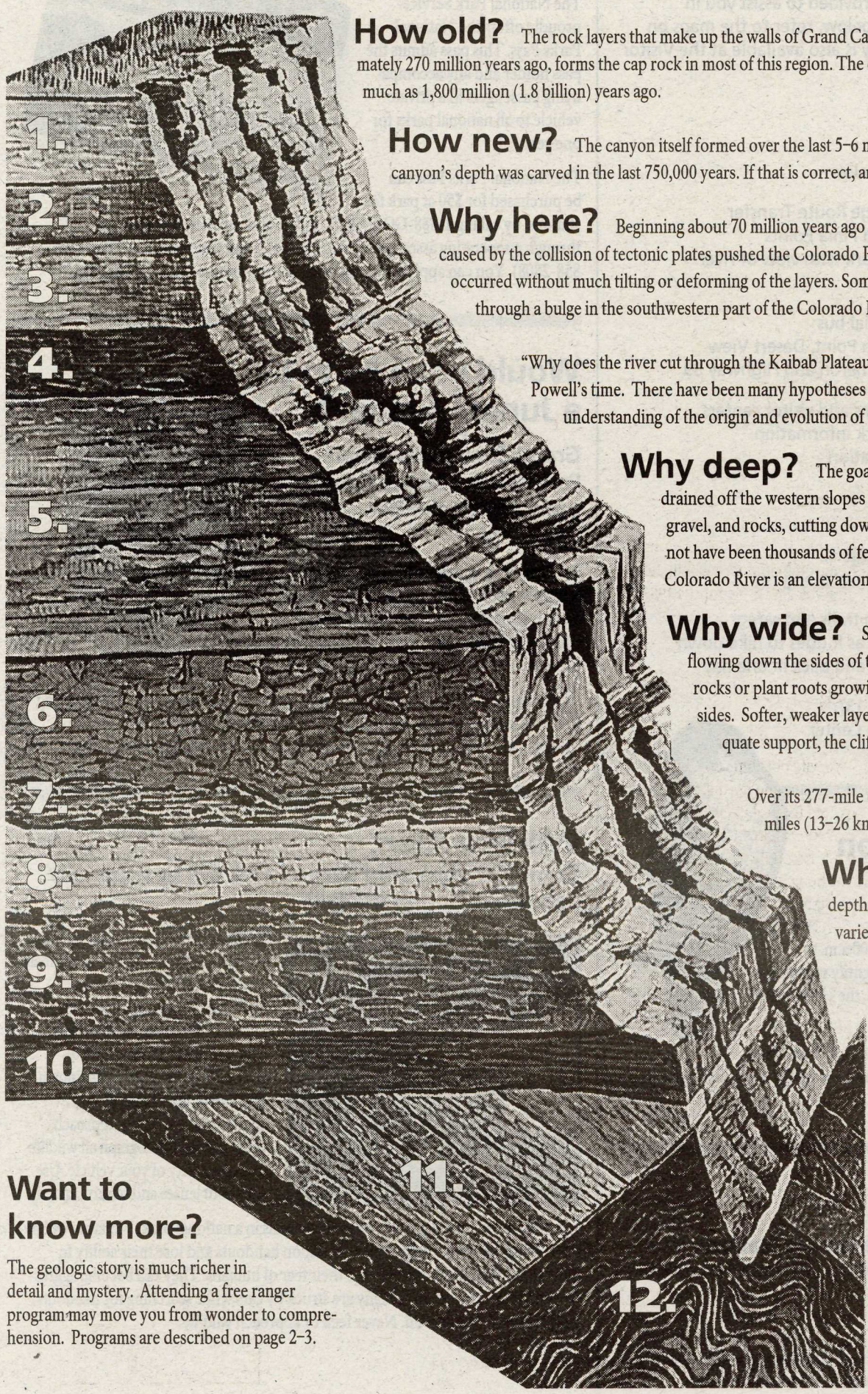


Fall is the rutting period for deer and elk. During this period, these animals become increasingly aggressive. They may become angered at any intrusion into their territory. Elk, which weigh as much as 1,000 pounds (450 kg), have been known to injure or kill people who approach them. Never approach wild animals. Photograph all wildlife from the safety of your vehicle. Use telephoto lenses and observe quietly.

It is dangerous, and illegal, to feed wild animals in a national park. Violators will be fined. Wildlife can become dependent upon handouts and lose their ability to hunt and forage. Such animals lose their fear of humans. They can become aggressive and bite, kick, or gore. Many are struck by cars while searching for handouts. Help us keep wildlife wild. Never feed or approach wildlife.

Park Science

Six Questions: A Geology Sampler



How old? The rock layers that make up the walls of Grand Canyon range from fairly young to fairly old. Kaibab Limestone, deposited approximately 270 million years ago, forms the cap rock in most of this region. The oldest rocks exposed at the bottom of the canyon, gneiss (NICE) and schist, date to as much as 1,800 million (1.8 billion) years ago.

How new? The canyon itself formed over the last 5–6 million years. Tentative evidence suggests that the lower 2,000 feet (610 m) of the canyon's depth was carved in the last 750,000 years. If that is correct, and not all geologists agree, almost half the canyon eroded in a geological instant.

Why here? Beginning about 70 million years ago a large section of what became the southwestern United States began rising. Pressure caused by the collision of tectonic plates pushed the Colorado Plateau from near sea level to over 10,000 feet (3,050 m) high. Amazingly, this uplift occurred without much tilting or deforming of the layers. Some areas rose even higher. The section of the canyon viewed from the South Rim is cut through a bulge in the southwestern part of the Colorado Plateau called the Kaibab Uplift.

"Why does the river cut through the Kaibab Plateau (Uplift), rather than going around it?" is a question that has plagued geologists since Powell's time. There have been many hypotheses advanced to explain this event. Research conducted today strives to increase our understanding of the origin and evolution of Grand Canyon.

Why deep? The goal of every raindrop, every rock, every grain of sand is to return to the sea. As water drained off the western slopes of the southern Rocky Mountains and across the Colorado Plateau, it carried sand, gravel, and rocks, cutting down through the ancient layers. Without the uplift of the Colorado Plateau, there would not have been thousands of feet of rock above sea level to cut through. From Yavapai Point on the South Rim to the Colorado River is an elevation change of 4,600 feet (1,400 m), yet the river is still 2,450 feet (750 m) above sea level.

Why wide? Simply stated, as the Colorado River cuts down, the walls collapse around it. Water flowing down the sides of the canyon carries away material forming side canyons. Water freezing in cracks in rocks or plant roots growing in cracks force rocks apart into smaller chunks, which cascade down the canyon sides. Softer, weaker layers erode faster, undermining the harder, stronger layers above them. Without adequate support, the cliffs collapse. Ultimately, the river carries this eroded material to the Gulf of California.

Over its 277-mile (446-km) length, Grand Canyon varies in width. Along the South Rim it is from 8–16 miles (13–26 km) wide, depending on where you choose to measure.

Why Grand? It is the ensemble of stunning dimensions—the melding of depth, width, and length—that sets Grand Canyon apart. Nowhere else is such a dazzling variety of colorful rock layers, impressive buttes, and shadowed side canyons revealed in such a dramatic chasm. Grand Canyon is the canyon by which all other canyons are measured.

Illustration:

1. Kaibab Formation	270 million years
2. Toroweap Formation	273 million years
3. Coconino Sandstone	275 million years
4. Hermit Formation	280 million years
5. Supai Group	315–285 million years
6. Redwall Limestone	340 million years
7. Temple Butte Formation	385 million years
8. Muav Limestone	505 million years
9. Bright Angel Shale	515 million years
10. Tapeats Sandstone	525 million years
11. Grand Canyon Supergroup	1.25 billion–740 million years
12. Vishnu basement rocks	1.84–1.68 billion years

Want to know more?

The geologic story is much richer in detail and mystery. Attending a free ranger program may move you from wonder to comprehension. Programs are described on page 2–3.

Park Science

California Condors: Soaring to Success





Cautiously optimistic. That summarizes the outlook for the California condor, one of the largest and rarest birds in North America. The National Park Service at Grand Canyon National Park is pleased to be cooperating with the U.S. Fish and Wildlife Service, the Bureau of Land Management, and The Peregrine Fund in the reestablishment of a California condor population in Arizona. This is their story.

50,000 – 10,000 years ago: The Pleistocene world presented a different view of Grand Canyon. During the height of the Ice Age, the climate was cooler and wetter. Coniferous forests crept down the sides of the canyon; rich grasslands covered surrounding plateaus. Large herbivores — Shasta ground sloth, shrubox, mammoths, and horses — grazed on the abundant food supply. Predators included the short-faced bear. California condors scavenged on the carcasses. Condor bones discovered in Grand Canyon caves document their presence. Similar fossil finds in Florida and New York suggest that condors were wide-spread across temperate North America. The large mammals are gone, but the California condor holds on.

A.D. 1500: By the time of the coming of European explorers to North America, California condors existed only along the Pacific Coast, from today's British Columbia to Baja California, extending inland a few hundred miles. Some researchers estimate that the population consisted of a few hundred pairs. With the extinction of the large land mammals, the condors may have been surviving on the carcasses of whales and other marine mammals. Was the population decrease due to the loss of the large mammals as a food source or were the condors unable to compete in a changed world with smaller scavengers such as the related turkey vulture?

Late 1800s: Both population and range continued to decline. The large birds were tempting targets for those with firearms. Gold miners obtained condor wing and tail feathers to store gold dust in the hollow shafts. A Victorian Age egg-collecting fad reduced productivity. The last active nest in Arizona occurred near Lees Ferry in the 1890s.

1924: The last condor sighting in Arizona was of a solitary condor near Williams, just south of the park.

1980s: Modern America presented new hazards for condors. Birds died flying into powerlines or from drinking spilled antifreeze from automobile radiators. Ingestion of bullets or pellets from carcasses resulted in lead poisoning. When the population of California condors reached a low of 22 individuals, biologists decided that the species' survival depended on capturing the remaining condors and initiating a captive breeding program. By 1987 all California condors were removed from the wild.

1996: After a slow start, the breeding program proved successful. The goal was to have not only a captive breeding population, but also to establish at least two wild populations. Central California and northern Arizona presented the best combination of habitat and food sources. In December the first six condors in the Arizona reintroduction effort were released from the acclimation site atop the Vermilion Cliffs north of Grand Canyon. Additional releases each year since add to the population of free-flying condors.

2001: Most of the birds in the first releases were youngsters, only a year or two old. As they approached reproductive age, six or seven, they began to display courtship behavior. This year saw the first condor egg laid in Arizona in more than a century. Not too surprisingly, the inexperienced pair was unsuccessful in hatching the egg.

2003: Success! High in a cave in the Redwall Limestone in the heart of Grand Canyon, a young condor stepped to the cave edge, spread its nine-foot wings, and awkwardly but controlled fell to the canyon floor below. Although it required vigilance from its parents throughout the winter, by the summer of 2004 it was seen soaring over the South Rim with other condors. It remained untrapped and untouched by human hands until July. The Peregrine Fund researchers captured it near the Vermilion Cliffs release site, took a blood sample, and fastened wing tags (number 05), before releasing it. The tests have not yet been completed, so it is not known if the fledgling is male or female.

Today: This year two nests, one north of the park and one below Hopi Point on the South Rim, have resulted in a chick in each. Sometime this fall, these chicks, too, should take their first precarious flights and by next summer may be flying over the canyon. As of July 1, the population of California condors consisted of nearly 250 birds — 149 at various facilities in the breeding program, 47 flying over the rugged hills of California, also 47 in northern Arizona, and five in Baja California. The future of the California condor looks much more promising than it did just a couple of decades ago.

Above left: Sunning adult condor

Above right: A face only a mother could love

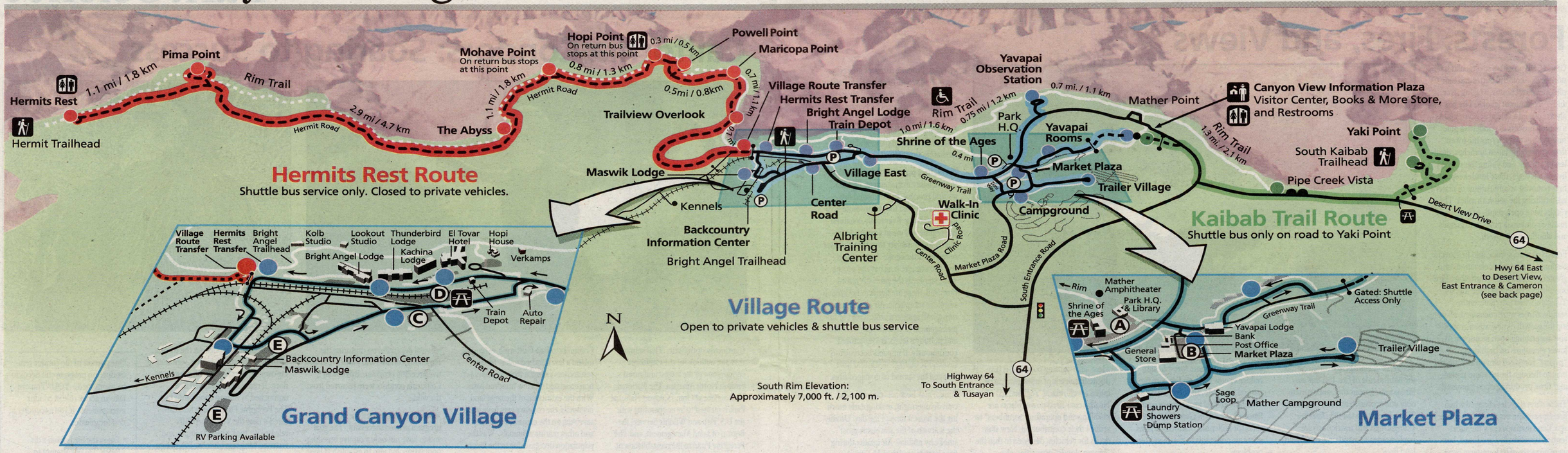
Right: 2003 fledgling

One partner of the condor reintroduction program still needs to be mentioned—YOU. You can take an active role in condor management. If you encounter a condor, please:

- Enjoy the birds from a distance. Do not attempt to approach them. Condors will bite.
- Do not feed them or leave out food for a condor.
- Never throw objects at a condor or otherwise harass them.
- If you observe anyone harassing or harming a condor, immediately notify a park ranger.



Grand Canyon Village Shuttle Bus Routes, Points of Interest, and Parking



Free Shuttle Buses

Free shuttle buses operate on three routes at Grand Canyon National Park: Hermits Rest Route (indicated in red on the map above), Village Route (blue), and Kaibab Trail Route (green). No tickets are required, and bus stops are clearly marked throughout the park by signs with the above symbol.

Buses may be white, white with a green stripe, or brown and tan. The route is indicated by a colored square near each door. Many buses also display the route name on the front of the bus.

Pets are not permitted on buses.

Shuttle service may be suspended during inclement weather.

Note: Sunrise and sunset times are listed on page 4.

Hermits Rest Route

Buses provide transportation between the Village Route Transfer and Hermits Rest (8 miles/13 km) with stops at eight canyon overlooks. Buses stop only at Mohave and Hopi Points on return.

75 Minutes Round Trip
(without getting off bus)

September, October, November

5:15–9:30 a.m.	Buses run about every 30 minutes
9:30 a.m. –Sunset	Buses run about every 15 minutes
Sunset–7:45 p.m.	Buses run about every 30 minutes

If you want to view sunset at the overlooks along Hermit Road, plan on boarding a Hermits Rest Route bus by at least an hour before sunset. Some evenings, the line at the Hermit Rest Transfer stop can require a 30-minute wait.

Village Route

Buses provide transportation between Canyon View Information Plaza, Yavapai Point, hotels, restaurants, campgrounds, parking lots, and other facilities in the Village area. This is not a scenic route, but rim views are available a short walk from many stops.

60 Minutes Round Trip
(without getting off bus)

September, October, November

5:15–6:30 a.m.	Buses run about every 30 minutes
6:30 a.m.–7:30 p.m.	Buses run about every 15 minutes
7:30–10:00 p.m.	Buses run about every 30 minutes

Kaibab Trail Route

Buses provide transportation between Canyon View Information Plaza, South Kaibab Trailhead, and Yaki Point. This is the shortest scenic route and the only access to Yaki Point.

30 Minutes Round Trip
(without getting off bus)

September, October, November

5:15–6:30 a.m.	Buses run about every 30 minutes
6:30 a.m.–5:00 p.m.	Buses run about every 15 minutes
5:00–7:45 p.m.	Buses run about every 30 minutes

Hikers' Express

A daily, early morning Hikers' Express leaves from Bright Angel Lodge and Maswik Lodge and goes directly to the South Kaibab Trailhead at:

September: 5:00, 6:00, and 7:00 a.m.

October: 6:00, 7:00, and 8:00 a.m.

November: 7:00, 8:00, and 9:00 a.m.

Rules of the Road

Motorist Warning

Pedestrians have the right of way. Vehicles must stop for pedestrians in crosswalks. It is the LAW.

Pedestrian Warning

Avoid walking on narrow park roads. Use trails that parallel most park roads. Always face traffic.

Bicyclist Warning

Bicycles are permitted on all paved and unpaved park roads and the new Greenway Trail. They are prohibited on all other trails, **including the Rim Trail.** Bicyclists must obey all traffic regulations. Always ride single file with the flow of the traffic. See and be seen: wear bright colors and a helmet.

On the narrow Hermit Road, bicyclists should pull to the right shoulder of the road and dismount when large vehicles are attempting to pass. Never hang onto a shuttle bus while riding.

Parking

Parking is available in lots throughout Grand Canyon Village. Please avoid parking along the roadside except where signs or lines on the road indicate that it is permissible. The location of the lots is indicated on the insert maps above.

Lot A: Near Park Headquarters (administrative offices) and Shrine of the Ages. Large lot that frequently has available spots.

Lot B: Near the businesses in Market Plaza. This is the largest lot, but tends to fill early.

Lot C: This small lot near the intersection of Center and Village Loop Roads may have sites when others do not. Construction ongoing nearby. Please use caution.

Lot D: Unpaved lot along the railroad tracks in the middle of the Grand Canyon Village Historic District.

Lot E: Near the Backcountry Information Center. The southern portion of this lot has large, pull-through spaces for RVs and vehicles with trailers. Construction may hamper access to some spaces.

Shuttle bus stops are located in or near all parking areas.

Accessibility

An accessibility permit, allowing access to some areas closed to public traffic, is available at entrance gates, the Visitor Center at Canyon View Information Plaza, Yavapai Observation Station, Kolb Studio, El Tovar concierge desk, and the Bright Angel Lodge, Yavapai Lodge, and Maswik Lodge transportation desks.

Accessible shuttle buses are available in response to requests made the day prior. Call (928) 638-0591.

Visitors with accessibility considerations and their party members may use the shuttle that operates approximately every 15 minutes between Mather Point and Canyon View Information Plaza from 7:30 a.m. to 5:30 p.m. Shuttle service may be suspended during inclement weather.

Legend

- Shuttle Bus Routes (Indicated in red, blue, or green)
- Shuttle Bus Stops (Indicated in red, blue, or green)
- Major Park Roads (All vehicles)
- Secondary Roads (All vehicles)
- Shuttle Buses Only
- Parking
- Picnic Tables
- Paved Trails
- Unpaved Trails
- Direction of Shuttle Travel

Scale varies on this oblique view.

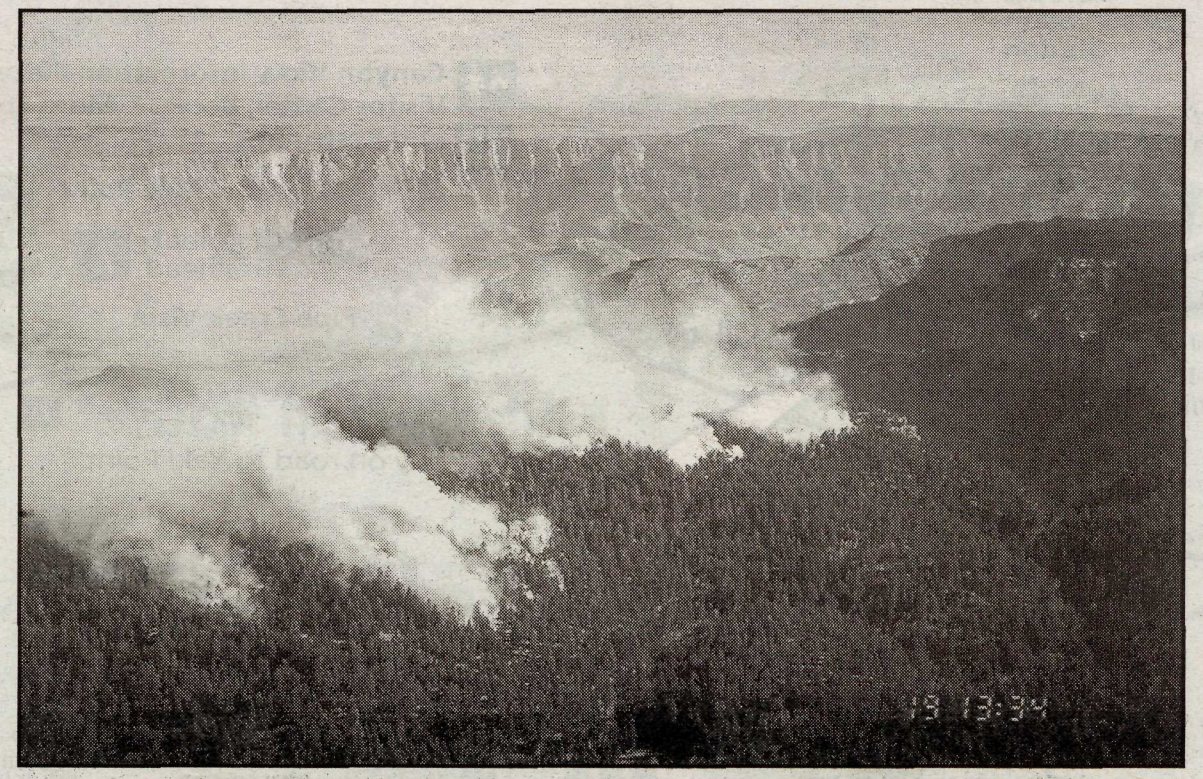
Park Science

Forests, Fires, and Views

Grand Canyon offers spectacular natural views—colorful buttes and temples, yawning chasms, a raging river, and . . . columns of smoke? Fire has always played a role in ecosystems. As a natural process in ponderosa pine forests, fires crept across the forest floor consuming fallen branches, dead leaves, shrubs, and young trees. Every five or ten years, these housekeeping fires removed accumulations of material, fertilizing the soil with ashes. The results were open stands of large, mature ponderosa pines with grasses and wildflowers beneath.

Forests of pine, spruce, and fir grow in response to the higher elevations and greater rainfall on the North Rim. Fire was not as frequent in these forests. Typically when fire came, entire stands of trees were consumed, allowing the growth of new aspen groves and maintaining open meadows. At lower elevations on both rims, "pygmy" forests of pinyon and juniper may go through these "stand replacing" fires, producing open grasslands.

These natural cycles changed when fire suppression began about a century ago. Land managers saw the short-term destruction fire produced, but were unaware of its long-term benefits. Without fire, unburned fuels accumulate on the forest floor. Young trees compete with their elders for scarce water. Overcrowded stands are more susceptible to insect attack. A century of fallen needles and branches make the dense forests a tinderbox. A lightning strike that would have started a mellow surface fire in 1869 can now start a raging inferno.



Today, land managers work to restore the natural role of fire. It is not easy. Fire is a dangerous tool, appropriate only under predetermined conditions. When forests are too dry, fires are extinguished and restrictions are implemented to avoid unwanted wildland fires.

When conditions are right, some fires are allowed to burn. It is possible that you will see smoke from such fires while you visit this fall. Fire managers take advantage of lightning-caused fires or intentionally ignite fires when environmental conditions are favorable. These managed fires are designed to promote forest health, reduce excess fuels, and restore the natural fire cycle, although 100 years of unburned fuel means more smoke. Smoke has been in Grand Canyon's skies for millennia, but today it joins other air pollutants to create modern problems.

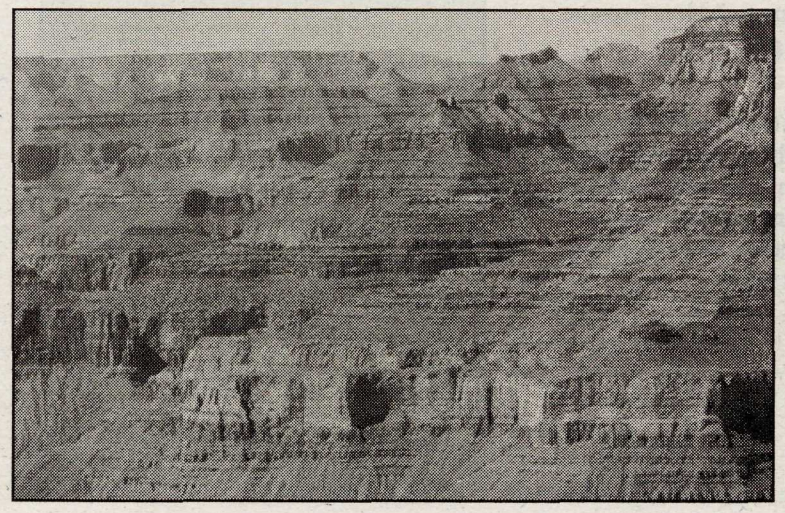
Air quality is an important issue. Grand Canyon enjoys some of the cleanest air in the United States, although pollution still affects views 90 percent of the time. This haze is not concentrated enough to violate health standards, but it still mutes colors, flattens textures, and diminishes views.

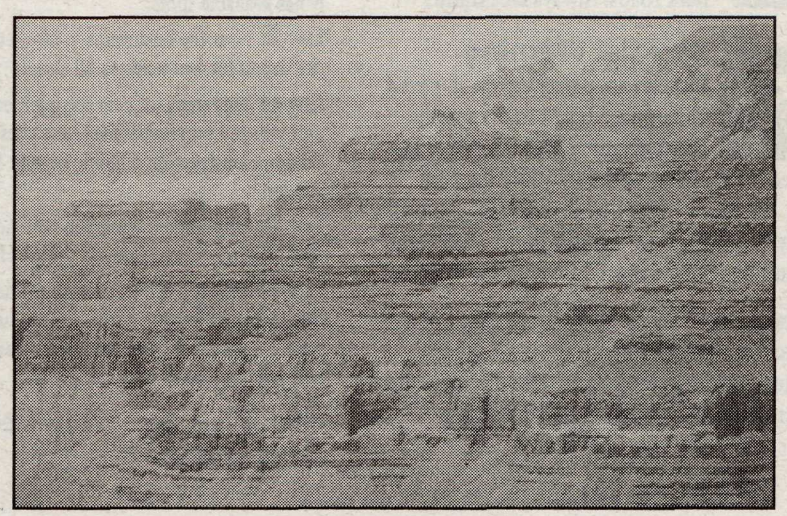
Most haze-causing pollution is produced hundreds of miles away, arriving as a well-mixed "regional haze." Nearby coal-fired power plants are installing and operating "scrubbers" to reduce their contribution. New standards for vehicles, designed to thin the "brown clouds" over cities, also reduce the pollution reaching Grand Canyon.

Although little air pollution originates from within its boundaries, the park works to reduce air pollution at the local level. Shuttle buses on the South Rim substitute mass transit (and,often, cleaner fuels) for scores of private vehicles. Propane furnaces are replacing oil and wood-fired heating. Rafting companies use cleaner (and quieter) four-stroke engines. The National Park Service participates in state and regional partnerships to protect and restore clean air to parks and wilderness areas throughout the West.

Forest fires present a unique challenge in air-quality management. Fire is a natural process, and managed fire remains our best tool to promote ecological stability. Eventually, a natural fire regime will mean a return to frequent, low-intensity fires that produce relatively little smoke. For the next few decades, we may have to accept some smoke as the price of restoration. Still, there are limits to how much smoke is acceptable. Air quality monitoring will remain a critical part of fire management at Grand Canyon. Haze and pollution levels are monitored continuously. If impacts become too severe, fire managers can, and have, stopped the spread of managed fires.

Smoke may become trapped in the canyon overnight, making early morning the haziest time of the day. Usually the warmth of the sun clears most smoke by midday. Air quality during fires has never violated health standards, but some people may confuse the effects on breathing of smoke with the effects of altitude and dry air. Whether fires are burning or not, drink plenty of water and do not overexert in this high, thin air.





Since 1983, photographs have been taken three times a day looking west from the Watchtower at Desert View. The visual range in the photograph on the left is approximately 180 miles (300 km). Clear conditions such as this occur only 1 percent of the time. In contrast the photograph to the right represents a visual range of about 60 miles (100 km). Fortunately conditions such as this occur at the Grand Canyon less than 10 percent of the time. (Both photographs were taken at noon.)

Park News

A Day in the Life of the Trail Crew







Five hundred miles (800 km)—the approximate distance of all the trails that wind up, down, and along Grand Canyon. Most of those miles are little more than unmaintained routes that see few hikers each month. The 35 miles (56 km) of corridor trails—Bright Angel, South Kaibab, and North Kaibab—receive the greatest use and are worn by thousands upon thousands of feet, both human and mule.

Last year representatives from the main park concessionaire, Xanterra Parks and Resorts, came to the National Park Service and proposed a cooperative effort to improve the corridor trails. Years of snow and rain, landslides and flash floods, and those thousands or millions of feet had eroded the trails producing many hazardous sections. For the first time in memory, the mule rides were suspended temporarily to make the effort more efficient.

Bill Allen, NPS trails supervisor, is only too aware of the rutted, washed away condition of the corridor trails. More than 40 trail crew members are rebuilding trails or doing cyclic trail maintenance. At the current pace all 35 miles (56 km) of corridor trails will not be fully reconstructed until 2008. During that time at least 40,000 juniper logs will be put in place and thousands of tons of dirt moved by mule!

What does it take to rebuild a trail? Join trail crew leader Kevin Dowell and his crew, Jonathan, Brodie, Tara, Evonne, and Jason, as they work on a section of the Bright Angel Trail below Three Mile Resthouse. To avoid the heat, their day starts early, before the sun rises over the rim. Kevin begins with safety reminders. "Look out for your coworkers," and by implication all other users of the trail. "Pace yourself—if you get too hot, sit in the shade and drink water." Donning safety gear—gloves, ear plugs, safety helmet—the crew spreads out along 200 feet (60 m) of the trail and begins to work.

Kevin explains that trails are somewhat like highways, you can't just throw asphalt (or dirt) on the ground and call it a road (or trail). Trails begin with a tough foundation layer of crushed rock that is held in place by stone "liners" on both sides of the five-foot (1.5-m) wide tread. Juniper log "checks" placed every five feet in the trail form a series of steps. This completed structure is then covered with a four-inch (10-cm) layer of dirt to form a smooth walking surface. Waterbars angled across the tread and ditches keep the trail drained.

The trail section being worked on is rutted down to the bedrock base, at least 18 inches (46 cm) deeper than the rock liners on the sides. The liners are straightened, correctly angled, and put firmly in place. Some of the liners are badly deteriorated. Brodie wrestles massive boulders along the ground and into proper alignment. The sun comes over the rim; the trail crew no longer labors in the shade.

Next comes the foundation layer of broken stone. Rocks of all sizes are retrieved from along the trail and dropped within the liners. Whack! Over and over the sledge hammer comes down, breaking the rock into a uniform two-inch (5-cm) or less size. Juniper log checks are placed perpendicular to the trail to prevent the tread from eroding away. Each log was cut and dressed outside the park, then brought to the project by helicopter. Every log is marked by weight: 50 pounds, 63 pounds. Kevin picks up a suitable looking log, measures it to fit tightly between the liners, cuts it, and then wedges it into place. Tara pounds rebar into holes drilled through the logs to anchor them. If necessary, crew members drill holes into the bedrock to accept the rebar. Rock chips fly as the drill's motor breaks the canyon's silence.

About this time a group of hikers comes by (this occurs throughout the day!) and says "Great job you guys. We love your hard work." Do they truly understand how much effort is going into making their hike safer and easier?

Next week, a string of mules will haul dirt from a pit behind the Three Mile Resthouse to finish laying the four-inch cap of soil for the trail tread. Each mule carries about a 200-pound (90-kg) load. Over and over, from dirt pit to trail section and back.

The trails are lifelines between rim and river. Without the hard working trail crews, we would not have those lifelines for our enjoyment!

The Grand Canyon National Park Foundation has established the Stewart Udall Endowment Fund to augment funding available for trail maintenance. If you would like to contribute to this fund, please contact the Grand Canyon National Park Foundation. See page 4 for more information on the foundation.

School and Educational Resources

Class Field Trips and Teacher Workshops



The Environmental Education staff invites teachers and students to take advantage of our free educational resources. We offer five ranger-led field trip programs at the canyon covering geology, ecology, and history topics. Programs are designed for grades 4–6, are curriculum based, and address Arizona academic standards. Advance reservations are required. Teacher workshops and educational materials for classroom use are also available. For more information, call (928) 638-7662, or e-mail SuZan_Pearce@nps.gov, or visit our website at www.nps.gov/grca/education.

Day Hiking

Before You Go, Remember...

Plan Ahead
As a day hiker no permits are required. You are entirely on your own. Your descent into the canyon, however brief, marks your entry into a world in which preparation, self-reliance, and common sense are crucial.

Fall Weather Varies
Inner-canyon temperatures can soar past 100° F (38° C) in September. The first snowstorms may come to the South Rim as early as mid-October. Know the weather forecast and dress accordingly.

Double Your Calories, Double Your Fun
Salty snacks and water or sports drinks should be consumed on any hike lasting longer than 30 minutes. Food is your body's primary source of fuel and salts (electrolytes) while hiking in the canyon.

If you do not balance your food intake with fluid consumption, you run the risk of becoming dangerously debilitated and severely ill. For every hour hiking in the canyon, you should drink 1/2 to 1 quart (0.5 l) of water or sports drinks.

Your best defense against illness and exhaustion is to eat a healthy breakfast, a snack every time you take a drink, and a rewarding full dinner at the end of the day. This is not a time to diet.

Watch Your Time
Plan on taking twice as long to hike up as it took to hike down. Allow 1/3 of your time to descend and 2/3 of your time to ascend.

Hiking Tips

1. **Be Prepared:** Know your route. Autumn days are growing shorter. The weather can change dramatically. Carry a map, flashlight, and extra clothing including wind and rain protection.
2. **Stay Comfortable:** If it is hot, reduce your pace and hike during the cooler parts of the day. Wet your shirt and hat to stay cooler. If it is cold, add layers and do not forget your hat. It is important to stay dry and out of the wind.
3. **Go Slowly:** If you can carry on a conversation, you are hiking at the right pace. If you find yourself out of breath, your legs and digestive system are not getting enough oxygen. Lack of oxygen may cause fatigue, heavy legs, and exhaustion.
4. **Rest Often:** Sit down, prop your legs up, and take a ten-minute break at least once every hour.
5. **Eat and Drink Frequently:** Balance your food and water intake. Salty snacks help replace electrolytes lost through perspiration. No matter what the temperature, you need water and energy to keep going.



Hiking Chart

WARNING: Do not attempt to hike from the rim to the river and back in one day. There are no loop trails for day hikes; you will be hiking on the same trail in both directions. **Remember! You are responsible for your own safety and the safety of those in your party.**

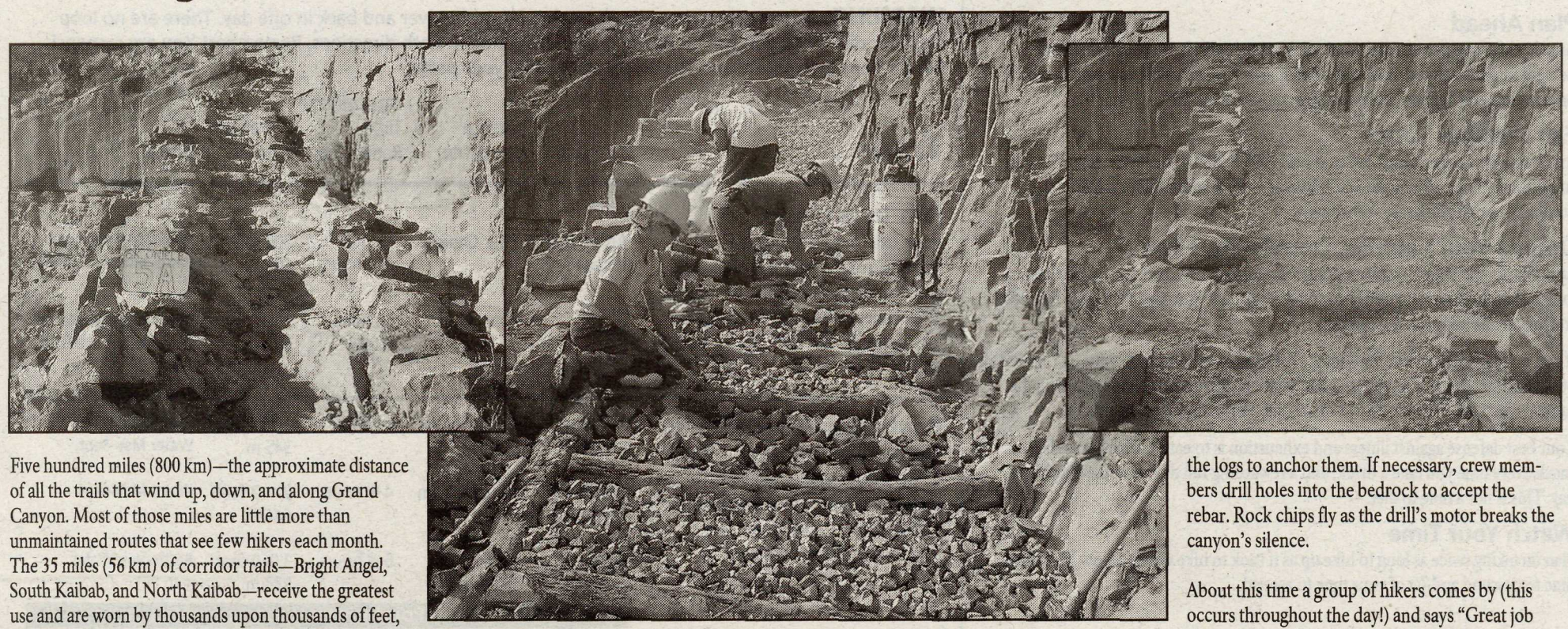
Trails	Destination	Distance Round-Trip	Approximate Time Round-Trip	Elevation Change	Notes
Rim Trails (Easy) Begin from any viewpoint in the village or along Hermit Road. Rim trails offer excellent walking for quiet views of the inner canyon and for visitors who desire an easy hike. See the map on pages 8–9.	Along the Village Rim	Your Choice	15 min.–1 1/2 hours	200 feet/ 60 m	Paved. Best easy walk. Passes historic buildings.
	Along Hermit Road	Your Choice	15 min.–all day	200 feet/ 60 m	Becomes unmarked dirt path west of Maricopa Point.
Bright Angel Trail (Steep) Trail begins just west of Bright Angel Lodge. Some shade, seasonal water subject to pipeline breaks; check at the Visitor Center or Backcountry Information Center for status.	1 1/2-Mile Resthouse	3 mi. / 4.8 km	2–4 hours	1,131 feet/ 345 m	Restrooms. Water May–Sept.
	3-Mile Resthouse	6 mi. / 9.6 km	4–6 hours	2,112 feet/ 644 m	Water May–Sept.
	Indian Garden	9.2 mi. / 14.8 km	6–9 hours	3,060 feet/ 933 m	Restrooms. Water.
	Plateau Point is extremely strenuous.				
	Plateau Point	12.2 mi. / 19.6 km	8–12 hours	3,195 feet/ 974 m	No water. View of river 1 1/2 mi. (2.5 km) beyond Indian Garden.
South Kaibab Trail (Steep) Trail begins south of Yaki Point on Yaki Point Road. Best views for a relatively short hike. Steep trail, no water, little shade. Access trailhead via shuttle bus. Water available at trailhead.	Ooh Aah Point	1.5 mi. / 2.4 km	1–2 hours	600 feet/ 183 m	No water. First view east.
	Cedar Ridge	3 mi. / 4.8 km	2–4 hours	1,140 feet/ 347 m	Restrooms. No water. First hitching rail.
	Skeleton Point	6 mi. / 9.7 km	4–6 hours	2,040 feet/ 622 m	No water. Second hitching rail. First view of river.

Express hikers' shuttles directly from Bright Angel Lodge and Maswik Lodge to the South Kaibab Trailhead depart daily at: **September**—5:00, 6:00 and 7:00 a.m.; **October**—6:00, 7:00 and 8:00 a.m.; **November**—7:00, 8:00 and 9:00 a.m.

Hermit Trail (Steep) Unmaintained steep trail requires caution. Begins 500 feet (152 m) west of Hermits Rest. Water from springs must be treated before drinking. For experienced desert hikers. Hiking boots recommended.	Waldron Basin	3 mi. / 4.8 km	2–4 hours	1,240 feet/ 378 m	No water.
	Santa Maria Spring	5 mi. / 8 km	5–8 hours	1,760 feet/ 536 m	Treat water.
	Dripping Springs	7 mi. / 11.2 km	6–9 hours	1,140 feet/ 347 m	Treat water. Use extra caution along narrow sections.
Grandview Trail (Very Steep) Unmaintained steep trail requires caution. Begins on canyon side of retaining wall at Grandview Point on Desert View Drive (12 miles [19 km] east of village). For experienced desert hikers. Hiking boots recommended.	Coconino Saddle	1.5 mi. / 2.4 km	1–2 hours	1,120 feet/ 341 m	No water. Use extra caution along narrow sections.
	Horseshoe Mesa	6 mi. / 9.7 km	6–9 hours	2,600 feet/ 793 m	Restrooms. No water. Use extra caution along narrow sections.

Park News

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Next week, a string of mules will haul dirt from a pit behind the Three Mile Resthouse to finish laying the four-inch cap of soil for the trail tread. Each mule carries about a 200-pound (90-kg) load. Over and over, from dirt pit to trail section and back.

The trails are lifelines between rim and river. Without the hard working trail crews, we would not have those lifelines for our enjoyment!

The Grand Canyon National Park Foundation has established the Stewart Udall Endowment Fund to augment funding available for trail maintenance. If you would like to contribute to this fund, please contact the Grand Canyon National Park Foundation. See page 4 for more information on the foundation.

School and Educational Resources

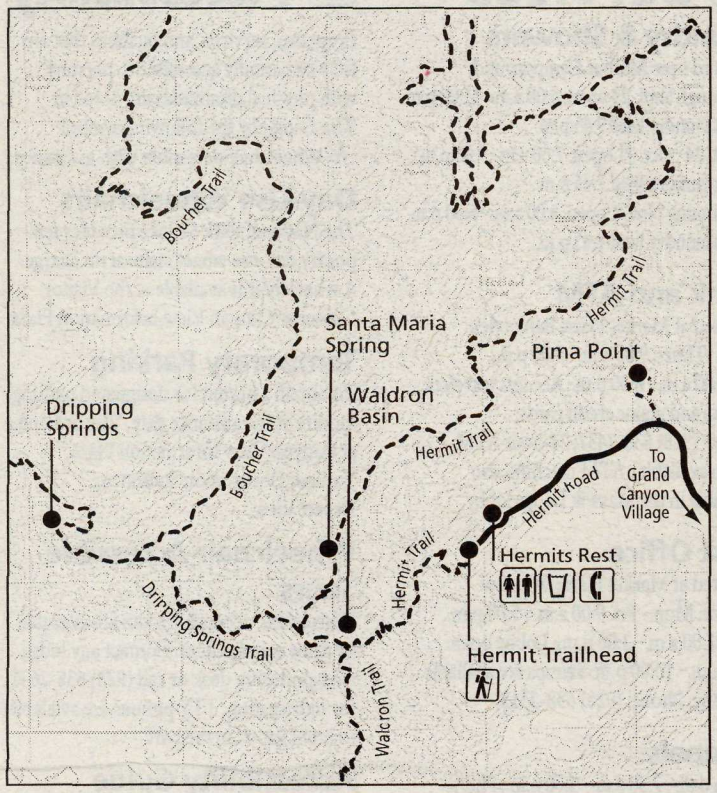
Class Field Trips and Teacher Workshops



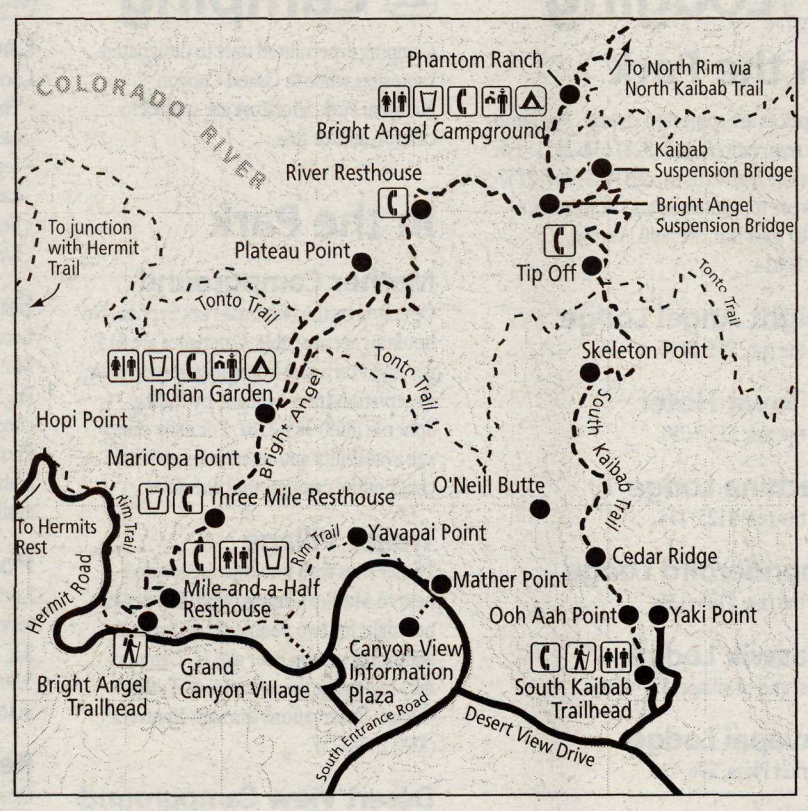
The Environmental Education staff invites teachers and students to take advantage of our free educational resources. We offer five ranger-led field trip programs at the canyon covering geology, ecology, and history topics. Programs are designed for grades 4–6, are curriculum based, and address Arizona academic standards. Advance reservations are required. Teacher workshops and educational materials for classroom use are also available. For more information, call (928) 638-7662, or e-mail SuZan_Pearce@nps.gov, or visit our website at www.nps.gov/grca/education.

Hiking and Camping Below the Rim

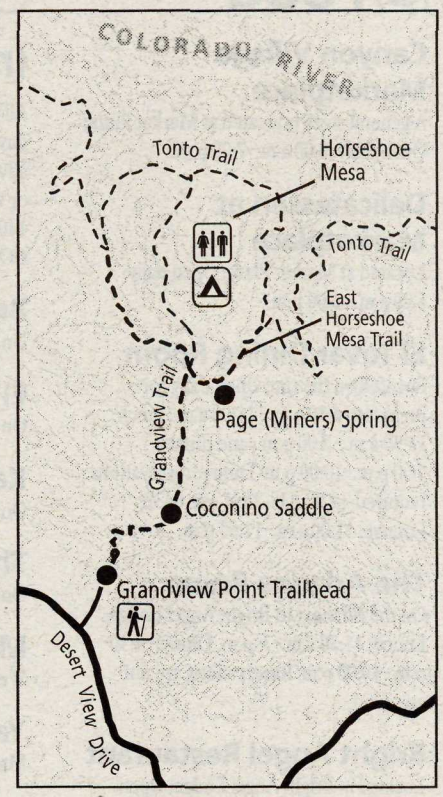
Hermit Trail



Corridor Trails



Grandview Trail



Health Hazards

Moderation is the key to having an enjoyable hike. Hike within your ability, maintain proper body temperature, balance your food and water intake, and rest often. Emergency situations include:

Heat exhaustion. This is the result of dehydration due to intense sweating. Hikers can lose one to two quarts (1–2 liters) of water per hour. Rangers at both Phantom Ranch and Indian Garden treat as many as twenty cases of heat exhaustion a day in summer.

Symptoms: pale face, nausea, cool and moist skin, headache, and cramps

Treatment: drink water, eat high-energy foods, rest in the shade, cool the body.

Heat stroke. This is a life-threatening emergency where the body's heat-regulating mechanisms become overwhelmed by a combination of internal heat production and environmental demands. Every year, two to three Grand Canyon hikers experience heat stroke.

Symptoms: flushed face, dry skin, weak and rapid pulse, high body temperature, poor judgment or inability to cope, unconsciousness. Victim is in danger!

Treatment: find shade, cool victim with water, send for help!

Hyponatremia. This is an illness that mimics the early symptoms of heat exhaustion. It is the result of low sodium in the blood caused by drinking too much water, not eating enough salty foods, and losing salt through sweating.

Symptoms: nausea, vomiting, altered mental states, and frequent urination

Treatment: have the victim rest and eat salty foods. If mental alertness decreases, seek immediate help!

Hypothermia. This is a life-threatening emergency where the body cannot keep itself warm due to exhaustion and exposure to cold, wet, windy weather.

Symptoms: uncontrolled shivering, poor muscle control, and a careless attitude

Treatment: put on dry clothing, drink warm liquids, warm victim by body contact with another person, and protect from wind, rain, and cold.

Trouble on the Trail

Occasionally, true emergencies occur in the backcountry. Never abandon someone who is in trouble! Call for help, use your signal mirror, or send a message with another hiker. Almost all emergencies can be avoided with proper forethought and, when closely examined, are not truly critical and can be resolved by those involved.

If someone asks you for help, try to obtain the following information: nature of problem, number of people involved, physical description of people involved, and the location.

Rangers are prepared to respond to problems of all kinds and will, if available, provide a necessary and appropriate level of assistance. Evaluate your situation rationally and thoroughly before requesting help.

Helicopter evacuations are an ambulance service only. Evacuations are very expensive. Flying a helicopter in the canyon is risky given the uneven terrain for landings and the odd wind currents. We take it seriously and so should you.

Camping Below the Rim

Permit and Fees Required

Overnight backpacking in Grand Canyon provides a degree of solitude, wildness, and silence that is increasingly difficult to find. In the 1970s, overcrowding and environmental degradation made it necessary to institute a set of rules and regulations to which all backpackers are subject.

A backcountry permit is required for all overnight backpacking. The majority of available permits are reserved up to four months in advance.

A fee of $10 per permit and $5 per person per night is charged. The permit process allows the National Park Service to control the number of people in each use area daily, thereby limiting resource impact and impact from human waste and litter. The program allows backpackers to enjoy a greater degree of solitude in experiencing the wilderness of Grand Canyon.

Obtaining a Permit

Individuals arriving in the park without a permit may be able to obtain one by participating in a day-by-day waiting list process for last-minute space. Interested hikers should inquire at the Backcountry Information Center (located in the Maswik Transportation Center) which is open daily, 8:00 a.m.–noon and 1:00 p.m.–5:00 p.m.

Guests of Phantom Ranch who have advance reservations do not need backcountry permits.

For more backpacking information, pick up a Backcountry Trip Planner at the Backcountry Information Center or the Visitor Center at Canyon View Information Plaza or contact backcountry rangers at:

Backcountry Information Center
P.O. Box 129
Grand Canyon, AZ 86023

Tel: (928) 638-7875
(1:00 p.m. to 5:00 p.m. Mon.– Fri.)

Website: www.nps.gov/grca

Lodging and Services

Food

Canyon Village Marketplace
A general store is located at Market Plaza; Open daily: 8:00 a.m.–7:00 p.m.

Delicatessen at Marketplace
Located at Market Plaza; Open daily: 8:00 a.m.– 6:00 p.m.

El Tovar Dining Room
Located on the rim; Open daily for breakfast: 6:30 a.m.– 11:00 a.m., lunch: 11:30 a.m.– 2:00 p.m., and dinner: 5:00 p.m.–10:00 p.m. Dinner reservations required: (928) 638-2631 ext. 6432; Lounge: 11:00 a.m.–11:00 p.m.

The Arizona Room
On the rim next to Bright Angel Lodge; Lunch: 11:30 a.m.–3: p.m. Dinner: 4:30 p.m.–10:00 p.m. Reservations are not accepted.

Bright Angel Restaurant
Located in Bright Angel Lodge; Open daily: 6:30 a.m.–10:00 p.m.; Lounge: 11:00 a.m.– 11:00 p.m. Bright Angel Coffee House in the Bright Angel Lounge. Open daily: 5:30 a.m.

Bright Angel Fountain
Ice cream and snacks; Located at the Bright Angel Lodge on the rim; Open daily as weather permits.

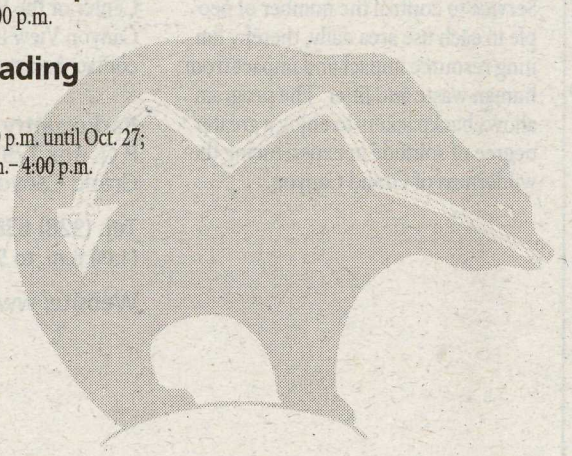
Maswik Cafeteria
Located in Maswik Lodge at the west end of the village; Open daily: 6:00 a.m.– 10:00 p.m.; Sports Lounge open daily 5:00 p.m.– 11:00 p.m.

Yavapai Cafeteria
Located in Yavapai Lodge at Market Plaza; Open daily: 6:30 a.m.–8:00 p.m.

Hermits Rest Snack Bar
Open daily: 9:00 a.m.– 5:00 p.m.

Desert View Marketplace
Open daily: 9:00 a.m.– 5:00 p.m.

Desert View Trading Post Snackbar
Open daily: 9:00 a.m.– 5:00 p.m. until Oct. 27; Beginning Oct. 28: 9:00 a.m.– 4:00 p.m.



Lodging

In the Park

All prices are subject to change. For same-day reservations, call (928) 638-2631. For advance reservations, call (888) 297-2757 or write to Xanterra Parks & Resorts, 14001 East Iliff, Ste. 600, Aurora, CO 80014.

Bright Angel Lodge
On the rim; $55–$130.

El Tovar Hotel
On the rim: $129–291.

Kachina Lodge
On the rim; $125–135.

Thunderbird Lodge
On the rim; $125–135.

Maswik Lodge
West end of village; $77–124.

Yavapai Lodge
Market Plaza; $96–113.

Phantom Ranch
Bottom of the canyon; overnight dormitory and cabin space. Advance reservations are required. Call for prices.

Outside the Park

Grand Hotel
Tusayan; (928) 638-3333

Grand Canyon Squire Inn
Tusayan; (928) 638-2681

Holiday Inn Express
Tusayan; (928) 638-3000

Quality Inn
Tusayan; (928) 638-2673

Red Feather Lodge
Tusayan; (928) 638-2414

Camping

Camping is permitted only in designated campsites while in Grand Canyon National Park. Violators are subject to citation and/or fine.

In the Park

Mather Campground
Operated by the National Park Service. No hookups are available. Campsites are $15 per night on a first-come first-served basis; Reservations may be made by calling Spherix: (800) 365-2267. For daily campsite availability and reservation details, check at the campground entrance.

Trailer Village
Trailer sites with hookups are located next to Mather Campground; $25 per site per night for two people; $2.00 for each additional person over age 16. Campers may register at the entrance to Trailer Village. Reservations through Xanterra: (888) 297-2757.

Desert View Campground
Located near the East Entrance, 25 miles (40 km) from Grand Canyon Village. Self-registration; first-come, first-served. $10 per site per night. Campground closes mid-October, depending on the weather.

Outside the Park

Camper Village
Commercial campground located one mile (1.6 km) south of park entrance in the town of Tusayan; Hookups and coin-operated showers are available; Call: (877) 638-2887. www.grandcanyonentrance.com

Ten-X Campground
Operated by Kaibab National Forest. Located two miles (3 km) south of Tusayan. $10 per site per night; no hookups or showers. Information: (928) 638-2443. Campground closes Sept. 30.



Services

Laundry & Showers
Located near Mather Campground;
- Through Sept. 23 open: 6:00 a.m.–11:00 p.m. Last laundry load 9:45 p.m.
- Sept. 24– Oct. 31 open: 7:00 a.m.–9:00 p.m. Last laundry load 7:45 p.m.
- Beginning Nov. 1 open: 8:00 a.m.– 6:00 p.m. Last laundry load 4:45 p.m.

Bank and ATM
Located at Market Plaza. Bank open: Mon.–Thurs. 9:00 a.m.– 5:00 p.m., Fri. 9:00 a.m.– 6:00 p.m.; Accepts travelers checks and major credit cards; Phone: (928) 638-2437; 24-hour ATM is also available. ATM machine also available in the Maswik Lodge lobby.

Post Office
Located at Market Plaza; Window service: Mon.- Fri. 9:00 a.m.– 5:00 p.m., Sat. 11:00 a.m.– 3:00 p.m.; Lobby open: 5:00 a.m.– 10:00 p.m. Stamps are available in lobby; Phone: (928) 638-2512.

Kennels
Open daily: 7:30 a.m.– 5:00 p.m.; Phone (928) 638-0534. For retrieval after 5:00 p.m., contact Fire and Safety at: (928) 638-2631.

Lost and Found
For items lost or found in hotels or restaurants, call (928) 638-2631; For all other lost items, call (928) 638-7798; Please take found items to the Visitor Center at Canyon View Information Plaza.

Garage Services
East of Grand Canyon National Park Lodges' General Offices; Open daily: 8:00 a.m.– noon and 1:00 p.m.– 5:00 p.m.; 24-hour emergency service available; Phone: (928) 638-2631.

Camping Equipment
Camping, hiking, and backpacking equipment may be purchased or rented at Canyon Village Marketplace (general store). Limited repair services are also available.

Grand Canyon National Park Library
The National Park Service library in the Park Headquarters Building is available for anyone who wants more in-depth information or is working on a research project. Open 8:30 a.m.– 12:00 noon, 1:00 p.m.– 4:30 p.m. Mon.–Thurs., except holidays. (928) 638-7768

Accessibility

Programs, services, and facilities that are fully or partially accessible to persons with physical disabilities are noted in *The Guide* by the following symbol:
♿ Wheelchair accessible with assistance.

Day-Use Wheelchairs
The National Park Service provides temporary day-use wheelchairs at no charge. A wheelchair is available at the Visitor Center at Canyon View Information Plaza.

Temporary Parking
To obtain a permit for designated parking, inquire at the entrance gate, Visitor Center at Canyon View Information Plaza, Yavapai Observation Station, or Desert View.

Wheelchair-Accessible Tours
Wheelchair-accessible tours are available by prior arrangement. Contact any lodge transportation desk or call (928) 638-2631 for information. TTY phones are available to hotel guests in the park.

Accessibility Guide Available
The Grand Canyon National Park *Accessibility Guide* is available upon request at the Visitor Center at Canyon View Information Plaza, Yavapai Observation Station, Kolb Studio, Tusayan Museum, Desert View Information Center, and park entrance stations.

Medical

24-Hour Emergency Care
Dial 911 (From hotel rooms dial 9-911).

Walk-In Medical Care
Mon.–Fri.: 9:00 a.m.–7:00 p.m.
Sat.: 10:00 a.m.– 4:00 p.m.
Sun.: closed.

Starting Oct. 4
Mon.– Fri.: 9:00 a.m.– 5:00 p.m.

Phone: (928) 638-2551.

Dentist
Call (928) 638-2395 for hours.

Organizations and Services

Religious Services

Religious services are offered in the park and the surrounding community. However, the National Park Service does not endorse any group or message.

Current schedules are posted at Mather Campground (near Entrance Station), Shrine of the Ages, the information kiosk near the post office, and Canyon View Information Plaza.

A Christian Ministry in the National Parks
(928) 638-2340

Grand Canyon Community Church (Interdenominational)
Edward Purkey, Pastor; (928) 638-2340

The Church of Jesus Christ of Latter-Day Saints
William Ballard, Jr., Branch President; (928) 638-4050

Roman Catholic
(928) 638-2390

Grand Canyon Assembly of God
Jim Strating, Pastor; (928) 638-9415

Grand Canyon Baptist Church
Rick Wiles, Pastor; (928) 638-9421.

Jehovah's Witnesses (Tusayan)
Jim Reilly; (928) 635-0070.

Service Organizations

Alcoholics Anonymous
Meets Mon., Wed., and Fri. at 7:00 p.m. at the Kachina Room, Kachina Lodge and 10:00 a.m. Tues. in the piano room at the Recreation Center. Meetings are open, nonsmoking, and members of all 12-step programs are welcome.

Grand Canyon Rotary Club
Meets Thursdays at noon at the Canyon Room, El Tovar Hotel.

Lions Club
Meets twice monthly on the first and third Wednesdays at 7:00 p.m. at the Grand Canyon Quality Inn in Tusayan. For information call (928) 638-0666.

Tours and River Trips

Air Tours
Fixed-wing and helicopter tours of the Grand Canyon region originate daily from Grand Canyon Airport. A list of air tour operators is available upon request at the Visitor Center at Canyon View Information Plaza, or consult the local telephone directory.

Bus Tours
Tours within the park to Desert View and Hermits Rest, as well as sunrise and sunset tours, are available daily. Wheelchair-accessible coaches are available by prior arrangement. Contact any transportation desk for information or call (928) 638-2631.

Mule Trips
One- and two-day mule trips into the canyon depart in the morning and may be available on a waiting-list basis. Call (928) 638-2631 or contact the Bright Angel Lodge transportation desk for further information.

Horse Rides
One-, two-, and four-hour trail rides and twilight campfire and wagon rides are available at Apache Stables. The stable is located at the north end of Tusayan. For information and reservations call (928) 638-2891.

White-Water Raft Trips
White-water trips through the canyon last 3–21 days and require reservations well in advance. Ask at the Visitor Center at Canyon View Information Plaza for a *Trip Planner* with a list of approved river trip operators.

Hualapai River Runners offers all-day trips in the western end of the canyon. Trips originate at Diamond Creek north of Peach Springs, Ariz., a drive of about 160 miles (257 km) or 4–5 hours from the South Rim. For more details call (928) 769-2219.

Smooth-Water Raft Trips
Half-day trips on the Colorado River from Glen Canyon Dam to Lees Ferry are provided by Wilderness River Adventures. Call (800) 528-6154 or (928) 645-3279 for more information. Trips are offered until mid-November. A minimum of six people is required.

Transport

Bus Service
Greyhound Bus Lines offers service from Flagstaff and Williams, Arizona, to points nationwide. (See shuttle service below for road transportation to the park.)

Railroad
Grand Canyon Railway offers service between Williams, Arizona, and Grand Canyon. Call (800) THE-TRAIN for information and reservations. The Railroad Express offers bus service to take only a one-way trip on the vintage train. To ride on the train one-way in the morning, contact any transportation desk. To ride on the train one-way in the afternoon, contact the Grand Canyon Railway at (800) THE-TRAIN [(800) 843-8724].

Taxi Service
Service is available to the Grand Canyon Airport, trailheads, and other destinations. 24-hour service daily. Call: (928) 638-2822 or (928) 638-2631, ext. 6563.

Transportation Desks
Information about Phantom Ranch facilities, mule trips, horseback riding, air tours, one-day float trips, and motorcoach tours (including wheelchair-accessible vehicles) is available at the lodge lobbies. Call (928) 638-2631, ext. 6015.

Maswik Lodge
Times vary based on seasonal demand.

Bright Angel
6:00 a.m.–8:00 p.m. until Oct. 31
6:00 a.m.–6:30 p.m. beginning Nov. 1

Yavapai Lodge
Times vary based on seasonal demand.

Rim-to-Rim Shuttle
Daily round-trip transportation between the North Rim and South Rim is provided by Transcanyon Shuttle. One trip each way daily. Reservations required: (928) 638-2820. Service stops mid-October. Charter service available until the end of October.

Shuttle Service
Open Road Tours provides shuttle service between Grand Canyon National Park and Flagstaff, Arizona, twice daily. They also offer connections to Phoenix. Call (928) 226-8060 or (877) 226-8060 for times and rates.

Additional Out-of-Park Services

The following facilities are located in Tusayan, outside the park's south entrance on Arizona Highway 64.

For additional services not listed, consult the local telephone directory. Area code (928) for all numbers listed below.

Fuel
Conoco Service Station 638-2608

Food
Cafe´ Tusayan 638-2151
Canyon Food Mart 638-2608
Canyon Star 638-3333
General Store 638-9228
McDonald's 638-2208
Mexican Kitchen 638-8423
Pizza Hut 638-4629
Quality Inn 638-2673
Squire Inn Restaurant 638-2681
Yippie I-O Steakhouse 638-2780
We Cook Pizza, Etc 638-2278
Wendy's 638-6484

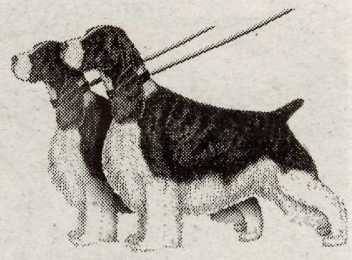
Internet Access
Grand Canyon Tourist Center . 638-2626
Happy Trails 638-0400
Quality Inn 638-2673
Red Feather Lodge 638-2414
Jennifer's Internet Bakery Cafe . 638-3433

Beauty Salon
Grand Canyon Squire Inn 638-2681

Telegraph
Canyon Food Mart 638-2608

Kaibab National Forest
Tusayan Ranger District 638-2443

News & Weather
KSGC 92.1 638-9552



Pets must be leashed at all times.

Leashed pets are allowed on rim trails throughout the developed areas of the South Rim, but not below the rim. The only exception is service animals.

Persons wishing to take a service animal below the rim must check in first at the Backcountry Information Center (located in the Maswik Transportation Center). Kennels are available. Telephone: (928) 638-0534.

Books/Gifts

Books & More (Canyon View Information Plaza) ..... 8:00 a.m.– 6:00 p.m.

Bright Angel .... 7:00 a.m.– 10:00 p.m.

Desert View Trading Post
Until Oct. 27 ..... 9:00 a.m.– 6:00 p.m.
Beginning Oct. 28 .... 9:00 a.m.– 5:00 p.m.

Desert View Watchtower
Until Oct. 27 ..... 9:00 a.m.– 6:00 p.m.
Beginning Oct. 28 .... 9:00 a.m.– 5:00 p.m.

Desert View Bookstore / Park Information
As staffing permits .... 8:00 a.m.– 5:00 p.m.

El Tovar ..... 7:00 a.m.– 10:00 p.m.

Hermits Rest ..... 9:00 a.m.– 5:00 p.m.

Hopi House
Until Oct. 27 ..... 8:00 a.m.– 6:00 p.m.
Beginning Oct. 28 .... 9:00 a.m.– 5:00 p.m.

Kolb Studio ..... 8:00 a.m.– 6:00 p.m.

Lookout Studio .. 9:00 a.m.– 5:00 p.m.

Maswik ..... 7:00 a.m.– 10:00 p.m.

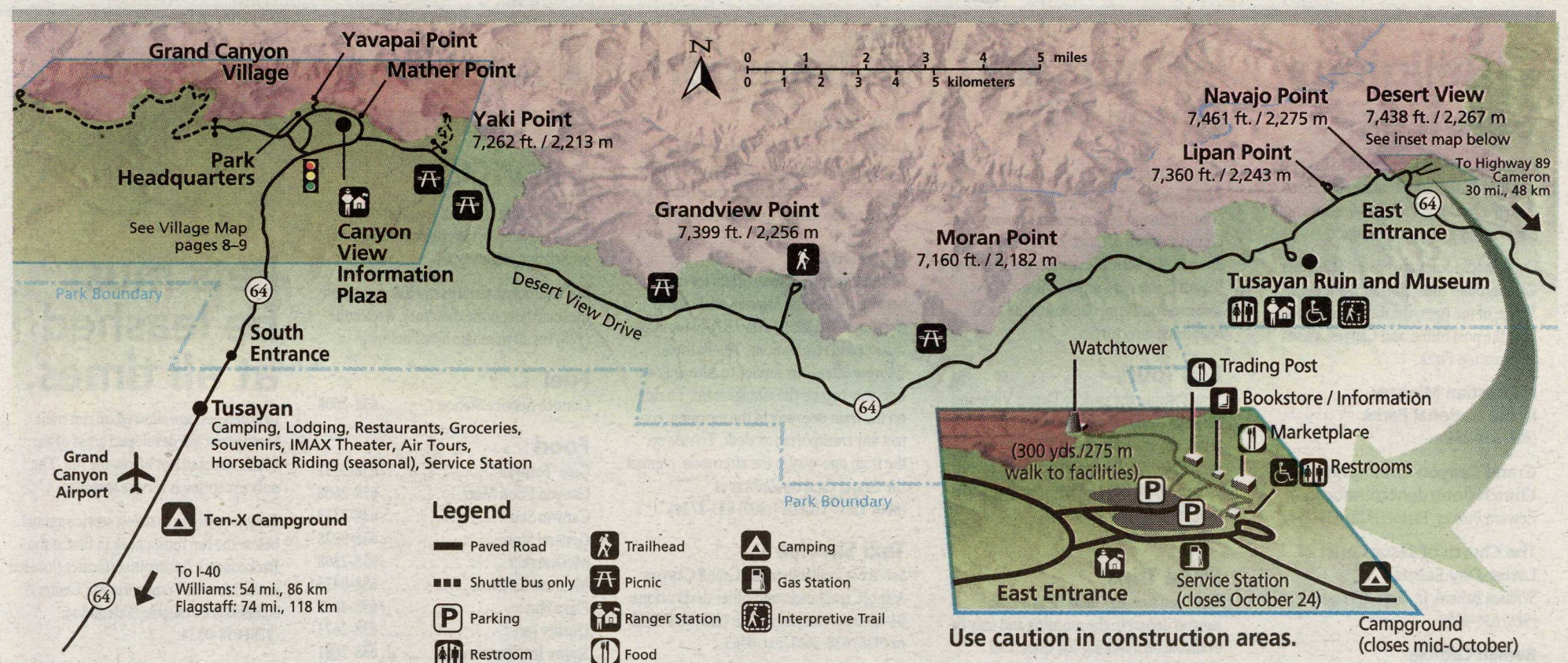
Tusayan Museum .. 9:00 a.m.– 5:00 p.m.

Verkamp's Curio
Until Oct. 31 ..... 9:00 a.m.– 7:00 p.m.
Beginning Nov. 1 .... 9:00 a.m.– 6:00 p.m.

Yavapai Observation Station
Until Oct. 14 ..... 8:00 a.m.– 7:00 p.m.
Beginning Oct. 15 .... 8:00 a.m.– 6:00 p.m.

Yavapai Curio
Until Oct. 27 ..... 8:00 a.m.– 9:00 p.m.
Beginning Oct. 28 .... 9:00 a.m.– 5:00 p.m.

South Rim



Bookstore Locations

Grand Canyon Association

Canyon View Information Plaza,
Yavapai Observation Station, Kolb Studio, Tusayan Museum,
and Desert View Bookstore/Park Information



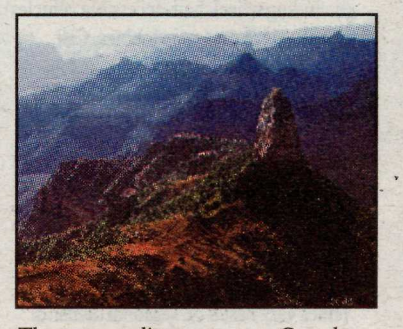
Your purchase supports Grand Canyon National Park.

Membership discounts and Field Institute classes available.
Inquire at the bookstore or call (928) 638-2481.

Shipping and mail order services available.

Shop online: www.grandcanyon.org

North Rim



The average distance across Grand Canyon "as the raven flies" is ten miles (16 km). However, getting from the South Rim to the North Rim by automobile requires a five-hour drive of 215 miles (346 km).

During winter months, the road to the North Rim entrance is closed due to snow. Lodging and camping are available at the canyon's North Rim from May 10 through mid-October. Reservations are strongly recommended. Additional facilities are available in the surrounding Kaibab National Forest, the Kaibab Lodge area, and Jacob Lake.

A separate *Guide* issue is published for the North Rim and includes details about facilities and services, as well as program and hiking information. Inquire at the Visitor Center at Canyon View Information Plaza on the South Rim.

Desert View Services

Chevron Service Station	Closes October 24	9:00 a.m.– 5:00 p.m.
Desert View Marketplace	Open Daily	9:00 a.m.– 5:00 p.m.
Desert View Bookstore/ Park Information	Open Daily As staffing permits	9:00 a.m.– 5:00 p.m.
Trading Post Snack Bar	Until Oct. 27 Beginning Oct. 28	9:00 a.m.– 5:00 p.m. 9:00 a.m.– 4:00 p.m.
Trading Post Gift Shop	Until Oct. 27 Beginning Oct. 28	9:00 a.m.– 6:00 p.m. 9:00 a.m.– 5:00 p.m.
Watchtower Gift Shop	Until Oct. 27 Beginning Oct. 28	9:00 a.m.– 6:00 p.m. 9:00 a.m.– 5:00 p.m.
Watchtower Stairs	Until Oct. 27 Beginning Oct. 28	9:00 a.m.– 5:30 p.m. 9:00 a.m.– 4:30 p.m.
Desert View Campground	Closes Mid-October	1st come–1st served

National Park Service
U.S. Department of the Interior

Grand Canyon National Park
Post Office Box 129, Grand Canyon, AZ 86023

For the latest information updates, visit Grand Canyon National Park's website at: www.nps.gov/grca

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EXPERIENCE YOUR AMERICA