

Grand Canyon

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



The Guide

South Rim: December 1, 2009–February 28, 2010

Also available in Deutsch, Español, Français,
Italiano, 日本語, 中文, 한국어



View across the canyon from Mather Point, NPS photo by Michael Quinn

Welcome to Grand Canyon National Park

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. Follow the antics of the ravens soaring above the rim. Can you hear the river roaring in the gorge far below? We must ensure that future generations have the opportunity to form connections with this inspiring landscape.

A few suggestions may make your visit more rewarding. The information in this publication will answer many of your questions about the South Rim. Stop by a visitor center and talk with a ranger. Participate in a ranger-led activity. Save gas and frustration; park your vehicle and ride the free shuttles. Watch a sunrise or sunset. Walk out at night to enjoy the star-filled sky or the moon-lit canyon. Hike into the canyon and progress backward in geologic time. May you form memories that last a lifetime.



Ride the Free Shuttle Buses

To make your stay at Grand Canyon National Park less hectic and to reduce traffic congestion, use the free shuttle buses. The shuttles operate from before sunrise to after sunset, come by frequently, and the drivers never get lost. Read the article on page 4 and the map on pages 8–9 for more details.

Start Your Visit at the Grand Canyon Visitor Center



Grand Canyon Visitor Center and Mather Point, just a few miles north of the South Entrance, feature:

- Ample parking near the visitor center and canyon rim
- Rangers to answer your questions and help plan your visit
- A short, paved trail to Mather Point
- The Rim Trail to continue your exploration along the edge of the canyon
- Free shuttle buses to travel to other South Rim locations
- Rest rooms that are always available
- Books and gifts at Books and More bookstore

The Grand Canyon Visitor Center is open 9:00 a.m. to 5:00 p.m.; Books and More 8:00 a.m. to 5:00 p.m. Enjoy the outside displays at any time. See page 4 for additional visitor centers.

Watch for Construction

Construction continues in the Mather Point and Grand Canyon Visitor Center area. Projects to be completed during the next year include a theater attached to the visitor center, a new shuttle bus loading area, a wheelchair accessible trail to Mather Point, and a shuttle bus stop at the west side of Mather Point. Please be extra cautious when you are in these areas.

Look inside for information on:

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Use Caution near the Edge

Footing can be dangerous.
Watch for snow and ice.

Emergency: 911

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



Thinking of Hiking?

















See pages 10 and 12–13

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

Ranger Programs

During your visit the National Park Service encourages you to participate in the programs listed below. All programs are free.

Grand Canyon Village

Activity	Location	Time	Duration	Frequency
Colorado River Talk  <p>Enjoy the grandeur and power of the Colorado River as you explore and discuss the river's role in Grand Canyon. Program may include a short walk on a paved path. Arrive by the Village Route shuttle bus to the Yavapai Observation Station stop or park in the Yavapai Point parking area.</p>	Inside Yavapai Observation Station	10:00 a.m.	30–45 minutes	Daily
Introduction to Grand Canyon's Geology   <p>Why is the Grand Canyon so deep, wide, and grand? Why does it exist only here in the world? Come and participate in this fascinating talk to learn how Grand Canyon was formed. Arrive at the visitor center by the free Village Route shuttle bus or park in the nearby parking areas.</p>	Grand Canyon Visitor Center at Canyon View Information Plaza	10:00 a.m.	30–45 minutes	Daily
Rim Walk    <p>Grand Canyon is a colorful landscape with a rich history. Enjoy an intriguing walk with a park ranger exploring the canyon's natural and cultural history. This is an easy up to one-mile (1.6 km) walk on a paved trail. Parking in the nearby lot may be limited. Ride the free Village Route shuttle bus to the Train Depot stop or park in Lot D.</p>	Verkamp's Visitor Center front porch	11:00 a.m.	45–60 minutes	Daily
The Human Story   <p>For thousands of years, humans have been part of Grand Canyon. Join park staff outside of Verkamp's Visitor Center to take a look at the history of the South Rim area. Programs may include a walk around the village historic district or a talk inside if the weather is poor. Parking in the nearby lot may be limited. Ride the free Village Route shuttle bus to the Train Depot stop or park in Lot D.</p>	Verkamp's Visitor Center front porch	1:00 p.m.	30–45 minutes	Daily
Kolb Studio: Images of the Past (by reservation only) <p>Kolb Studio, built in 1904, spills five levels down the canyon wall. The Kolb brothers played an integral role in the early years of development at Grand Canyon. From the studio they photographed countless visitors as they began their mule trips. Join a ranger for a closer look at Kolb Studio and the fascinating time in which the Kolb family lived. Limited to 12 participants. Register at Kolb Studio for the tour prior to that day's program or by calling (928) 638-2771.</p>	Kolb Studio	2:00 p.m.	45 minutes	Daily
A Geo-Glimpse   <p>Enjoy the geology exhibits at Yavapai Observation Station and explore a selected aspect of the canyon's geology during these short talks. Arrive by the Village Route shuttle bus to the Yavapai Observation Station stop or park in the Yavapai Point parking area.</p>	Inside Yavapai Observation Station	2:00 p.m. and 3:00 p.m.	20 min.	Daily
Nature Walk   <p>Learn more about the complexity and diversity of nature with a short hike along the rim. Topics vary and may include animals and plants adapting to the changing seasons, human impacts on nature, rare and endangered species, or Native Americans' use of plants and animals. Arrive by the Village Route shuttle bus to the Yavapai Observation Station stop or park in the Yavapai Point parking area.</p>	Bicycle rack outside Yavapai Observation Station .	3:30 p.m.	45–60 minutes	Daily
Ranger's Choice   <p>Enjoy the world of Grand Canyon during this in-depth special program. Topics change daily; check at the Grand Canyon Visitor Center for the day's subject. Possible programs include nature talks, Native American culture, or pioneer history. Arrive at the visitor center by the free Village Route shuttle bus or park in the nearby parking areas.</p>	Inside Grand Canyon Visitor Center	3:30 p.m.	30 min.	Daily
Evening Program   <p>The perfect way to end your day at Grand Canyon! Enjoy a ranger presentation on the canyon's fascinating natural or cultural history. For this evening's topic check the schedules posted around the park. Arrive by riding the free Village Shuttle bus to the Shrine of the Ages stop or park in Lot A.</p>	Shrine of the Ages auditorium	7:00 p.m.	1 hour	Daily

We hope that learning more about Grand Canyon National Park and its resources will lead to a greater appreciation of your national park.

Additional Programs in the Grand Canyon Village Area

Rangers will offer additional programs as staffing is available. Programs may include moon walks, star talks, and walks along the rim covering a variety of subjects. Look for program announcements posted in the visitor centers or along the rim in the Village area to confirm times and availability.

Locations vary	Varies	Varies	Varies
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Desert View and Tusayan Museum


Glimpses of the Past


No programs December 7–11


Have you ever wondered how 800 years ago people found food, water, and shelter? Join a ranger to explore the remains of an ancestral Puebloan village and envision a thriving community in this harsh and demanding environment. This walk entails a journey on a 0.1 mile (0.2 km) flat, paved trail. **No programs December 7–11.**

Tusayan Museum , 3 miles (5 km) west of Desert View	11:00 a.m. and 1:30 p.m.	30–45 minutes	Daily
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Children must be accompanied by an adult on all programs.

 These family-oriented programs are ideal for meeting the ranger program requirement for the Grand Canyon's Junior Ranger award. Any ranger program, however, will meet the requirement on page 2 of the Junior Ranger Activity Booklet.

 All outdoor programs may be canceled during rain, snow, or lightning storms.

 These programs are wheelchair accessible with assistance. Wheelchairs may be checked out at the Grand Canyon Visitor Center free of charge.

Special Programs

Historic Kolb Studio Art Exhibits



Through February 17, 2010

When she was a child, fascinating imagery literally came up out of the ground around Sally Hall's feet in the form of tantalizing remnants of "the Ancients" who had known the Grand Canyon before her. The lines and patterns on these ancient ceramics serve as "maps" into the way an ancient culture looked at its world. Sally Hall's paintings draw from these elements, reflecting her experiences of the Southwest and those of an ancient past.

Kolb Studio open daily 8:00 a.m.–5:00 p.m. Exhibits are free and open to the public.

Artist-in-Residence Program

Few places provoke as much wonder and creativity as Grand Canyon. The National Park Service hosts two Artist-in-Residence (AiR) programs—a well-established seasonal program on the North Rim, and a new year-round program on the South Rim. Artists enjoy three-week residencies in the park with focused studio time to pursue their own projects. In addition, each artist presents three public programs of her or his own design.

The South Rim AiR program is pleased to host these artists during the 2009–2010 winter season:

December: Kim Henkel, from Keystone, South Dakota, is a mixed media sculptor and photographer whose work focuses on the natural world and historic architecture. Kim will be capturing a series of landscape pinhole photographs while in-residence. She will also conduct a series of hands-on workshops in the art of pinhole photography for local school students and will present an art talk as an evening program at the Shrine of the Ages.

January: Michael Miner, from Studio City, California, creates dramatic black and white landscape photographs and plans to immerse himself in the winter environment. Michael's public programs will include two separate presentations of his work as evening programs and one hands-on demonstration on large-format landscape photography.

February: Erica Stankwyth Bailey, from Fayetteville, North Carolina, is a silversmith and jeweler who has never been to Grand Canyon. She hopes to develop a new style to incorporate into her nature-inspired pieces. Erica's public programs will include *Drawing with Wire*, an all-ages family workshop; an all-ages nature sketch walk along the rim, and one evening program sharing her artistry.



All workshops and presentations are free with any necessary materials provided. Check at any visitor center for more information on dates, locations, and times of Artist-in-Residence programs.

Want to know more?

For more information about the Artist-in-Residence program, please visit our web site:

www.nps.gov/grca/supportyourpark/air.htm

Enjoying the South Rim

Information Centers (see pages 2–3 for ranger programs at these locations)



Kolb Studio

Open daily 8:00 a.m.–5:00 p.m.
 Located in the Village Historic District at the Bright Angel Trailhead, Kolb Studio is the restored home and business of the Kolb brothers, pioneering photographers at Grand Canyon. Visit the free art exhibit in the auditorium (see page 3) and shop in the bookstore.



Verkamp's Visitor Center

Open daily 8:00 a.m.–5:00 p.m.
 The newest visitor center resides in one of the oldest buildings on the South Rim. Operated as a curio shop for more than 100 years by the Verkamp family, the building now features displays telling the history of Grand Canyon Village.



Yavapai Observation Station

Open daily 8:00 a.m.–5:00 p.m.
 How old is the canyon? How did it form? The exhibits at Yavapai Observation Station answer these and other geology questions. The historic building, located one mile (1.6 km) east of Market Plaza, features expansive canyon views. The bookstore offers a variety of materials about the area.



Canyon View Information Plaza

Grand Canyon Visitor Center open daily 9:00 a.m.–5:00 p.m.
 Books and More bookstore open daily 8:00 a.m.–5:00 p.m.
 The new parking areas allow for easy access to Canyon View Information Plaza and Mather Point. Ride the free Village Route or Kaibab Trail Route shuttle buses to other points on the South Rim. You may view the outdoor exhibits anytime. **Walk carefully around the construction in the visitor center area.**



Tusayan Museum

Open daily 9:00 a.m.–5:00 p.m.
 A visit to Tusayan Ruin and Museum provides a look into the lives of a thriving community as illustrated by its pottery, seashell bracelets, corncocks, and arrowheads. See 2,000–4,000-year-old original split-twig figurines. Art from today's tribes provides a glimpse into their rich cultures. The museum is located three miles (5 km) west of Desert View. Free admission. **The museum will close December 7–11 for exhibit work.**



Desert View Bookstore & Park Information

Open daily 9:00 a.m.–5:00 p.m.
 The Desert View Bookstore and Park Information Center, located at Desert View Point near the park's east entrance, offers an excellent selection of publications and park information.

A passport cancellation stamp is available at all above locations.

Canyon's Best Bargain: The Free Shuttle Bus System

For more than 30 years the National Park Service has provided a free shuttle bus system on the South Rim. The buses use compressed or liquefied natural gas, a clean burning fuel. Buses have provisions for improved accessibility and can accommodate most wheelchairs. All shuttles have racks for bicycles. Riding the shuttles makes your stay more enjoyable, while reducing pollution and decreasing traffic congestion.



How do I use the shuttles?

The map on pages 8–9 is the key. The map shows routes, stops, operating times, and route lengths. Park your vehicle in one of the parking areas, proceed to the nearest bus stop, and board the next bus. The buses come by every 10–20 minutes. You do not need to obtain a ticket, and you are free to get on or off at any stop. You can ride to a stop, enjoy the view, shop at a gift store, or walk along the rim, then hop on a later shuttle.

Where do the shuttles go?

Two shuttle routes operate during the winter. The routes do not overlap, although they interconnect. Buses show the route name on the front and display an appropriately colored square near the door.

Village Route (blue)

This loop connects visitor centers, lodging, restaurants, gift shops, and campgrounds. It provides the best means to get to many of the ranger programs.

Kaibab Trail Route (green)

Leaving from Canyon View Information Plaza, this route goes to the South Kaibab Trailhead and two viewpoints to the east.

Sunrise & Sunset

Date	Sunrise	Sunset
December 1	7:21 a.m.	5:14 p.m.
December 6	7:25 a.m.	5:14 p.m.
December 13	7:31 a.m.	5:15 p.m.
December 20	7:35 a.m.	5:18 p.m.
December 27	7:38 a.m.	5:22 p.m.
January 3	7:40 a.m.	5:27 p.m.
January 10	7:40 a.m.	5:33 p.m.
January 17	7:38 a.m.	5:40 p.m.
January 24	7:35 a.m.	5:47 p.m.
January 31	7:30 a.m.	5:54 p.m.
February 7	7:24 a.m.	6:02 p.m.
February 14	7:17 a.m.	6:09 p.m.
February 21	7:09 a.m.	6:16 p.m.
February 28	7:00 a.m.	6:23 p.m.

Moon Phases

New moon	Full moon	Moon rise
	December 1	4:38 p.m.
December 16		
	December 31	5:33 p.m.
January 15		
	January 29	5:35 p.m.
February 13		
	February 28	6:51 p.m.

All times are Mountain Standard Time.

Enjoying the South Rim

Superintendent's Welcome



Winter is a wonderful time to be visiting Grand Canyon National Park. The brisk, crystalline air makes the canyon's colorful buttes and shadowy depths appear closer. Winter storms cloak trees and cliffs in a layer of snow. You share this memory-making experience with fewer visitors.

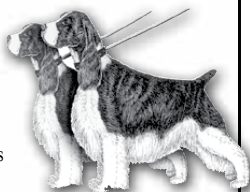
While here, I encourage you to drive out Hermit Road and walk along the newest segment of the Greenway Trail from The Abyss to Pima Point or Hermits Rest. Warm up by the fire in Verkamp's Visitor Center, our most recently opened visitor center. New parking lots allow easy access to the Grand Canyon Visitor Center and Mather Point.

Steve Martin

Steve Martin, Superintendent

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. Kennels are available. Telephone: (928) 638-0534.



Planning Your Grand Canyon Experience

Individual interests, available time, and the weather can influence your visit. Use the information in this publication and talk with a ranger in one of the visitor centers to help make your Grand Canyon experience memorable. The National Park Service and park concessioners hope you have a rewarding visit.

If you have only an hour or two

Go to one of the viewpoints such as Mather, Yavapai, or Yaki Points and immerse yourself in the view. Walk a short distance along the Rim Trail and watch the changing patterns of light and shadow in the canyon. Can you decipher the animal tracks left in the snow?

If you have half a day

Stop at one of the visitor centers and learn more about the geology or history of the area by participating in a free ranger program. Drive Hermit Road to Hermits Rest, stopping at the numerous pull-offs to enjoy the view. Hopi Point is a favorite for sunset.

If you have all day

Walk a short distance down the Bright Angel or South Kaibab Trails, keeping in mind that these trails may be very icy. Drive east on Desert View Drive, enjoying the overlooks along the way and stopping at Tusayan Museum and the Desert View Watchtower. Walk around Tusayan Ruin and picture living here when central heating meant a fireplace in the middle of the room. Help your children attain their Junior Ranger badge.

If you have two or more days

The canyon is yours to enjoy and explore. Arise early (not so very early in winter) and take in a sunrise. Venture away from the popular viewpoints and find a protected spot to experience the quiet of the canyon. If the weather is wintry, warm up by the fireplace in Verkamp's Visitor Center or enjoy the view from inside Yavapai Observation Station. Attend several ranger-led activities, ending your day with the Evening Program. Step out at night to experience a truly dark sky illuminated by countless stars.

Environmental Education Class Trips, Summer Camps, and Teacher Workshops

The Environmental Education staff invites teachers and students to take advantage of our free educational programs. We offer nine ranger-led field trip programs at the canyon covering geology, ecology, and history topics. The curriculum-based programs are designed for grades K-7 and address Arizona and national academic standards. During January and February, rangers conduct in-class presentations throughout Arizona and neighboring states. Distance learning programs via two-way video-conferencing are also offered. All programs are popular, so advanced reservations are required. Contact the park as soon as possible to schedule your activity.

Free teacher workshops cover suggested pre- and post-visit activities, as well as walk-throughs of the programs at the canyon. Park staff conducts workshops several times each year. For more information or to make reservations for either student activities or teacher workshops call (928) 638-7931 or visit www.nps.gov/grca/forteachers/. Grand Canyon National Park offers summer camps for high school aged youth. Check out www.nps.gov/grca/forkids/ for more information.

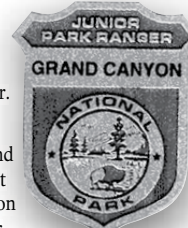


Would you like to be a Junior Ranger?

The National Park Service offers a Junior Ranger program for children ages 4 and older.

Pick up a *Junior Ranger Activity Book* at the Grand Canyon Visitor Center at Canyon View Information Plaza, Verkamp's Visitor Center, or Tusayan Museum information desk and complete the activities listed for the appropriate age level. A special Junior Ranger program is available at Phantom Ranch.

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



Cell Phone Tour

Your cell phone provides another way to learn more about Grand Canyon National Park. You can listen to a narration over your cell phone at numerous points of interest on the South Rim between Maricopa and Yaki Points.

Wherever you see a cell phone tour sign, dial (928) 225-2907 and enter the indicated stop number. You will hear an interpretive ranger give a two-minute synopsis on various aspects of the canyon from geology to Native American history to the night sky.

There is no additional charge to listen to these messages. Please be aware that cell phone coverage can be spotty and not all providers offer service in the park.



Park Science

Volunteers Help Control Non-native Tamarisk

Tamarisk (*Tamarix* sp.), also known as salt cedar, is a non-native invasive tree found throughout riparian areas in the Southwest, including in Grand Canyon National Park. Tamarisk was introduced in the 19th century as an erosion control agent and for ornamental purposes. It quickly spread throughout river basins replacing native vegetation. (*below*)



Tamarisk reached the Grand Canyon area in the 1930s and became dominant along the Colorado River in Grand Canyon following completion of Glen Canyon Dam in 1963. Prior to construction of the dam, fluctuating river flows, especially powerful spring floods, inhibited growth along the edge of the river.

The NPS, beginning in 2002, has removed tamarisk in side canyons to protect the relatively pristine natural habitats. To date, project leaders and dedicated volunteers have removed more than 275,000 tamarisk trees from over 6000 acres. Volunteer crews, led by park biologists, backpack into remote side canyons, and remove the trees by hand, by pulling seedlings or cutting larger trees, and by applying herbicide. Tamarisk control volunteer trips take place during the cooler months, between September and March, when hiking and working in the canyon is most enjoyable.

Grand Canyon is also facing a new challenge in its management of tamarisk—the arrival of the tamarisk leaf beetle (*Diorhabda* spp.). These beetles (*above right*), which feed specifically on

tamarisk, were released in areas north of Grand Canyon as a biological control agent. Tamarisk leaf beetles are causing defoliation of tamarisk trees further south than originally anticipated. This species of beetle needs long summer days to prompt egg-laying. Scientists thought that Grand Canyon was too far south to provide the required number of daylight hours, but the



beetles are proving to be more adaptable than anticipated.

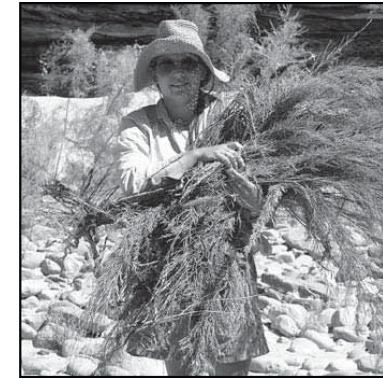
The tamarisk leaf beetle, documented in Grand Canyon in August 2009, may have dramatic impacts on the canyon's complex riparian ecosystems, possibly defoliating and killing tamarisk trees that now dominate the river corridor. While the demise of this nonnative invader is welcome, it poses new management challenges. Resource scientists must now assess rapid changes to riparian habitats and must develop strategies to remove standing dead trees and determine how to successfully restore

native plant communities. Resource managers are eager to expand current partnerships and develop new ones as they begin to formulate long-term plans to restore native ecosystems in the Colorado River corridor both within and outside park boundaries.

One of the mandates for the National Park Service is to preserve and protect park resources, including native plant populations, throughout Grand Canyon National Park. NPS vegetation crews, with the help of volunteers, restore native plants in areas impacted by construction, such as near the Grand Canyon Visitor Center, protect rare species, and remove invasive species that have the greatest impact on native ecosystems.

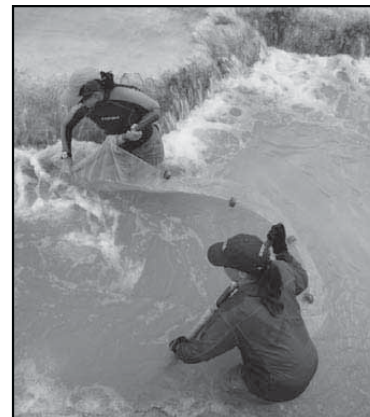
You may notice construction activity, such as the improvement in visitor facilities at Mather Point and the Grand Canyon Visitor Center. Each construction project is designed to minimize impacts on the park's plants and incorporates vegetation restoration work at its completion. Crews are currently replanting native vegetation near the Grand Canyon Visitor Center as part of a restoration effort that began in summer 2007. Prior to any ground disturbance, crews inventoried all of the vegetation on the site, collected native plant seed, propagated native plants, moved and stored large trees and native topsoil, and transplanted rare species such as the Tusayan flameflower (*PheMERanthus*

validulus). Vegetation program managers hope to replicate the success of the 2008 Hermit Road rehabilitation which greatly improved visitor facilities and restored native vegetation with a 95 percent survival rate of transplanted plants.



Grand Canyon National Park's vegetation program is looking for volunteers to assist with tamarisk management in the inner canyon (*above*) and with native plant restoration work and invasive plant removal on the North and South Rims. Volunteer opportunities range from single day projects to trips up to a week in length. To learn more, please visit www.volunteer.gov/gov or www.gcvolunteers.org.

Learn More Park Science on Canyon Sketches

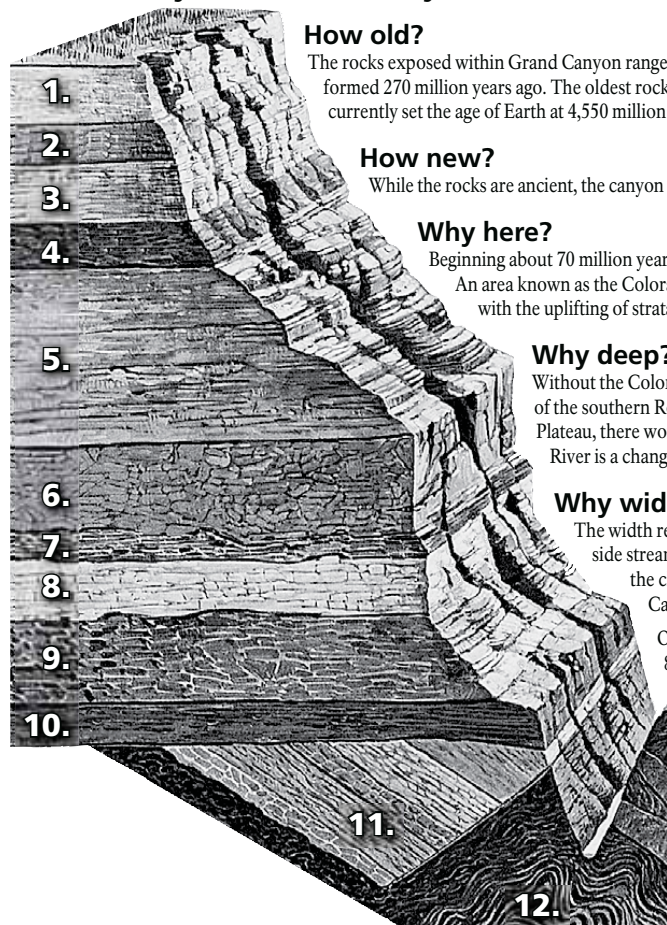


Canyon Sketches, an electronic magazine on the park's web site, features short updates about the canyon's natural, cultural, and recreational resources. Articles highlight projects that Science and Resource Management biologists, archeologists, physical scientists, and wilderness managers accomplish to inventory, monitor, mitigate, restore, and rehabilitate park resources.

Recent features highlight historic fire towers and the fire management program, translocation of endangered humpback chub (*left*), and mountain lion research. Articles include text, photographs, video, and historic movies to tell the story. View *Canyon Sketches* magazine at: www.nps.gov/grca/naturescience/cynsk.htm.

Park Science

There's Only One Grand Canyon: Basic Answers to Your Geologic Questions



How old?

The rocks exposed within Grand Canyon range from the fairly young to the fairly old (geologically speaking). Kaibab limestone, the caprock on the rims of the canyon, formed 270 million years ago. The oldest rocks within the Inner Gorge at the bottom of Grand Canyon date to 1,840 million years ago. For comparison geologists currently set the age of Earth at 4,550 million years.

How new?

While the rocks are ancient, the canyon is young. Geologists generally agree that canyon carving occurred over the last 5–6 million years—a geologic blink of the eye.

Why here?

Beginning about 70 million years ago, heat and pressure generated by two colliding tectonic plates induced mountain building in western North America. An area known as the Colorado Plateau was raised more than 10,000 feet (3,000 m), but was spared most of the deformation and alteration associated with the uplifting of strata. This high plateau, so critical to Grand Canyon's story, is a geological puzzle that researchers still seek to understand.

Why deep?

Without the Colorado River, a perennial river in a desert environment, Grand Canyon would not exist. Water draining off the western slopes of the southern Rocky Mountains carried sand and gravel, cutting down through the layers of rock. Without the uplift of the Colorado Plateau, there would not have been the thousands of feet of topography to sculpt. From Yavapai Point on the South Rim to the Colorado River is a change of 4,600 feet (1,400 m), yet the river still flows 2,450 feet (750 m) above sea level.

Why wide?

The width results from the rock layers collapsing around the river and its tributaries combined with the "headward erosion" of these side streams. Softer, weaker layers erode faster, undermining the harder, stronger layers above them. Without adequate support, the cliffs collapse. The relentless river carries this eroded material to the Gulf of California. Much of what is now southeastern California and southwestern Arizona is covered with material eroded from Grand Canyon.

Over its 277 river miles (446 km), the jagged Grand Canyon varies in width. Along the South Rim, it ranges between 8 and 16 miles (13–26 km) depending upon where you choose to measure.

Why Grand?

Often described as Earth's greatest geological showcase, the ensemble of stunning dimensions—the melding of depth, width, and length—sets Grand Canyon apart. Nowhere else features such a dazzling variety of colorful rock layers, impressive buttes, and shadowed side canyons. Grand Canyon is the canyon against which all other canyons are compared.

The exhibits at Yavapai Observation Station explain the geologic processes that formed the rocks and carved the canyon.

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	1,200 million–740 million years
12. Vishnu basement rocks	1,840–1,680 million years

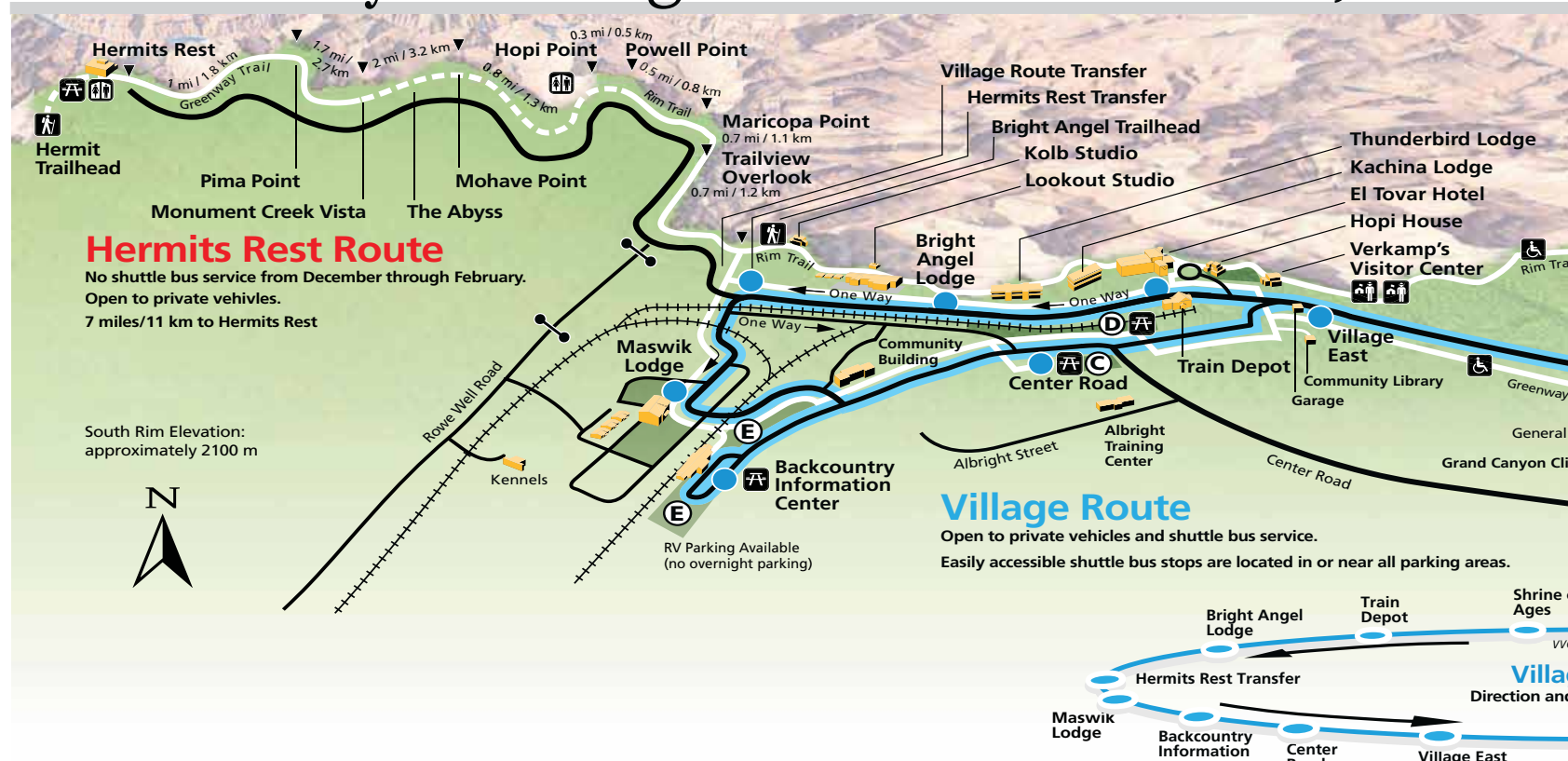
Want to know more?

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

Grand Canyon Association bookstores offer many geology related titles. Bookstore hours and locations are listed on page 5. To learn more about geology at Grand Canyon, take a look at:

- *Yardstick of Geologic Time*, Allyson Mathis
- *Introduction to Grand Canyon Geology*, Greer Price
- *Carving Grand Canyon*, Wayne Ranney
- *Ancient Landscapes*, Ron Blakey and Wayne Ranney

Grand Canyon Village Shuttle Bus Routes, Points



Free Shuttle Buses

Free shuttle buses operate on two routes on the South Rim during the winter—Village Route (blue), and Kaibab Trail Route (green). The routes interconnect, but do not overlap. No tickets are required, and bus stops are clearly marked throughout the park by signs with the above symbol.

Buses are white with a green stripe. The buses display the route name on the front and an appropriately colored square near each door.

All buses are equipped with bicycle racks. Bicycle one way and ride the shuttle the other.

Pets are not permitted on buses.

Service may be suspended during inclement weather.

Hermits Rest Route

The Hermits Rest Route does not operate during the winter. Hermit Road is open to all vehicles during December, January, and February.

This narrow road winds seven miles (11 km) past numerous overlooks to Hermits Rest. It may be closed during inclement weather. Watch for hikers and bicyclists along the road.

No shuttle bus service on Hermit Road from December through February.

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)

December–February buses run every:

- 30 minutes 6:15 a.m. to 8:00 a.m.
- 15 minutes 8:00 a.m. to 6:00 p.m.
- 30 minutes 6:00 p.m. to 9:00 p.m.

Kaibab Trail Route

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

30 minutes round-trip
(without getting off bus)

December–February buses run every:

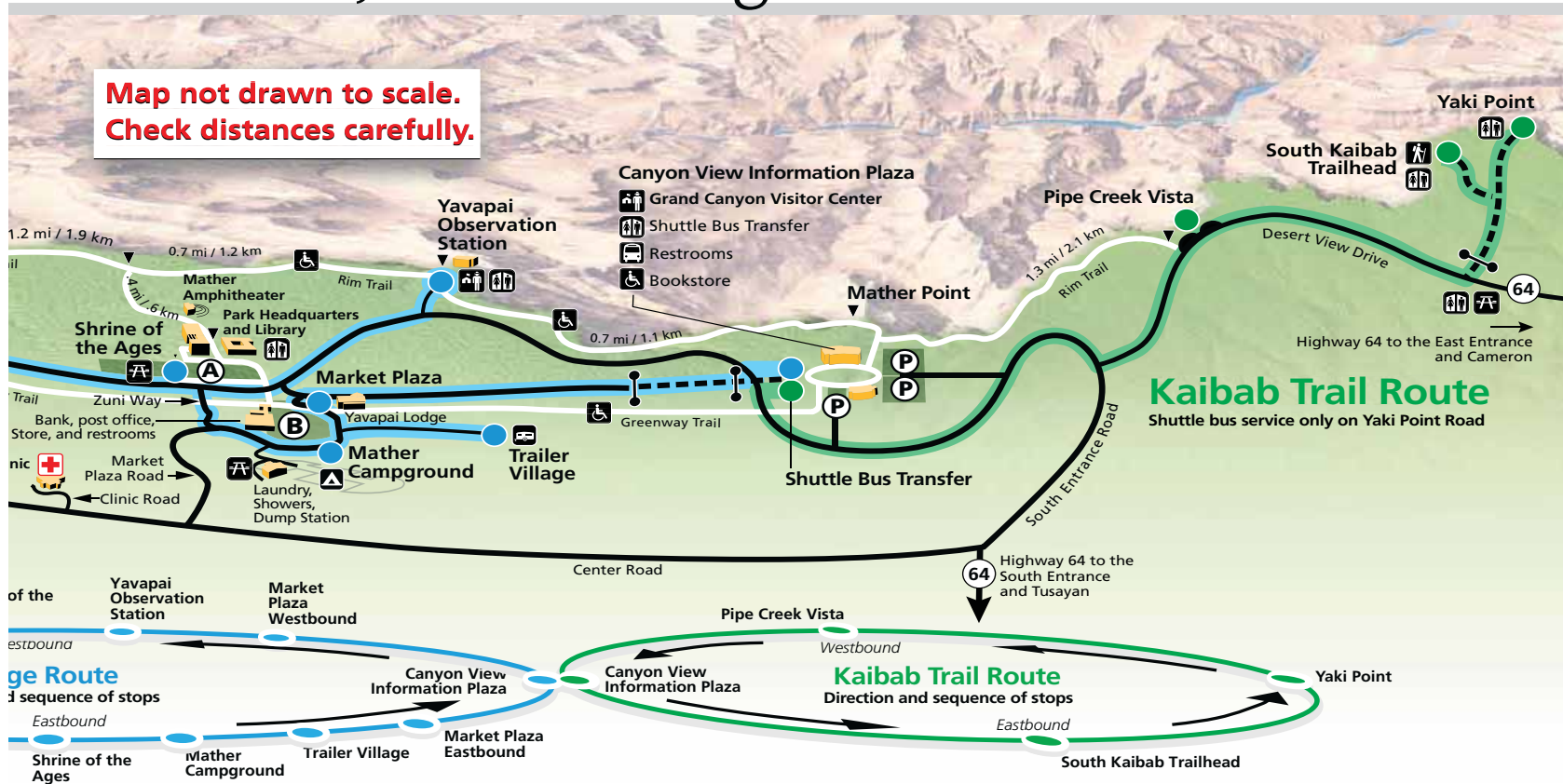
- 15 minutes 6:15 a.m. to 7:15 p.m.

Hikers' Express

An early morning bus leaves daily from the Bright Angel Lodge, Backcountry Information Center, and Canyon View Information Plaza shuttle bus stops and goes directly to the South Kaibab Trailhead at:

December–February: 8:00 and 9:00 a.m.

of Interest, and Parking



**Map not drawn to scale.
Check distances carefully.**

Rules of the Road

- Motorist Warning:** Pedestrians have the right of way. Vehicles must stop for pedestrians in crosswalks.
- 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 Greenway Trails. 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. 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 at the Grand Canyon Visitor Center and 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. Location of the lots is indicated on the map above.

- A** Near Park Headquarters. Large lot that frequently has available spots.
- B** Near the businesses in Market Plaza. This is the largest lot in the Village area.
- C** This small lot may have sites when others do not.
- D** Unpaved lot along the railroad tracks in the Grand Canyon Village Historic District.
- E** Near the Backcountry Information Center. The southern portion of this lot has large, pull-through spaces for RVs and vehicles with trailers.

Grand Canyon Visitor Center Parking

Three new lots provide easy access to the rim, visitor center, restrooms, and bookstore.

Accessibility

An accessibility permit, allowing access to some areas closed to public traffic, is available at entrance gates, the Grand Canyon Visitor Center at Canyon View Information Plaza, Verkamp's Visitor Center, Park Headquarters, Kolb Studio, El Tovar Concierge Desk, and the Bright Angel Lodge, Yavapai Lodge, and Maswik Lodge Transportation Desks.

Day-Use Wheelchairs

The National Park Service provides wheelchairs at no charge at the Grand Canyon Visitor Center at Canyon View Information Plaza.

Legend

- Shuttle Bus Routes** (Indicated in blue or green)
- Shuttle Bus Stops** (Indicated in blue or green)
- Major Park Roads** (All vehicles)
- Secondary Roads** (All vehicles)
- Shuttle Buses Only**
- Parking**
- Picnic Tables**
- Paved Trails**
- Unpaved Trails**
- Distance between points on trails**

Not to scale. Check distances carefully.

Park News

Inspired by the Canyon? Here is How You Can Help



- Wildlife monitoring and research projects
- National Park Service's trail projects which include 73 miles of multi-use trails and trailside amenities such as benches and informational signage.
- *Hike Smart* campaigns which promote visitor safety in the park.
- Art programs including the *Grand Canyon Celebration of Art* and exhibits at Kolb Studio

Here's how you can help

Join: Become a GCA member and enjoy exclusive benefits, while knowing that your membership supports Grand Canyon National Park.

Explore: Come back to the park and explore a wide variety of hiking, cultural, and learning opportunities with GCA's Grand Canyon Field Institute.

Donate: Become a donor and your gift will help GCA provide funds to restore park trails, rejuvenate fragile habitat, protect rare and endangered species, and preserve historic landmarks.

For more information

Visit www.grandcanyon.org or contact Bonnie O'Donnell, Director of Development e-mail: bodonnell@grandcanyon.org telephone: (800) 858-2808

While experiencing the majesty of the Grand Canyon, it is easy to overlook the efforts of the National Park Service to preserve and protect this natural wonder. National park funding cannot always meet the variety of needs for programs necessary to effectively manage and promote this amazing resource.

To meet this challenge, the Grand Canyon Association (GCA), the park's nonprofit fundraising partner, works with Grand Canyon enthusiasts like you to fund a variety of important programs. Just a few of these include:

- Environmental Education programs which award travel grants to bring schoolchildren to the park, send rangers to schools throughout Arizona, and conduct teacher-training workshops at Grand Canyon
- Creation and distribution of *Travelin' Trunks* (below) which provide teachers across the country with fun, educational park information for use in the classroom



Winter Hiking

Grand Canyon invites exploring on foot, even in the winter. The nearly level Rim Trail goes for miles with unfolding views framed by gnarly piñon and juniper around every corner. The trails descending into the canyon lead to warmer climes and adventures among the buttes and canyons.

Special Considerations

Temperatures moderate from cold winter mornings to mild afternoons. Storms move in quickly from the Pacific Coast bringing snow. Dress in layers to meet the variable conditions. Always take along hat, gloves, and a coat to protect you from wind or precipitation. Check the weather forecast before starting out. Winter days are short and the trails inviting. A flashlight or headlamp is handy in case you linger on the trail too long into the evening. Do not forget to eat and drink along the way. Keep your body well fueled. Most importantly, let someone know your plans and report back when you return. Day hikers do not need a permit, but overnight backpackers must obtain a backcountry permit before starting.

Rim Trail

The Rim Trail stretches from Pipe Creek Vista on Desert View Drive west to Hermits Rest, a distance of approximately twelve miles (19 km). The section from Pipe Creek Vista to Bright Angel Lodge (4 mi./6.4 km) is paved and presents only a few short sections with grades that exceed accessibility standards. Although the National Park Service attempts to plow snow from the trail as soon as possible after each storm, watch for snowy or icy spots. Several shuttle bus stops near this portion of the trail allow you to combine walking with a free shuttle bus ride back to your vehicle or lodging.

West of Bright Angel Lodge, the trail narrows and climbs the Bright Angel Fault to viewpoints along Hermit Road. It remains paved until Powell Point. The National Park Service trail crew maintains the Rim Trail, so the dirt tread is in excellent shape. Snow accumulates on the trail as it skirts Hopi Point hanging on the shady side of the canyon.

A new multi-purpose trail stretches from the Monument Creek Vista shuttle bus stop on the west side of The Abyss to Hermit Point. This paved section accommodates hikers, bicyclists, and visitors using wheelchairs, following an older road alignment away from Hermit Road and along the

rim. Remember that the Hermits Rest shuttle does not operate during the winter.

Trails into the Canyon

Bright Angel and South Kaibab Trails remain the most popular paths into the canyon for hikers and mule riders. Day hike destinations include Mile-and-a-Half or Three-Mile Resthouses or Indian Garden (for experienced hikers) on the Bright Angel Trail and Ooh-Aah Point or Cedar Ridge on the South Kaibab Trail. Both trails descend north-facing walls of the canyon that accumulate snow and ice, becoming very treacherous. Instep crampons, small, pointed metal plates that attach to your boots (below), increase your traction. Even the mules wear caulked shoes to provide a better grip on the ice. Instep crampons may be available at the Canyon Village Market general store.



Hikers on the South Kaibab Trail should ride the free Kaibab Trail Route shuttle bus from Canyon View Information Plaza to the trailhead. Private vehicles are not permitted on the road to the trailhead. The Bright Angel Trail starts behind the Bright Angel Lodge cabins.

Hermit Trail at the end of Hermit Road leads to interesting destinations, but is narrower and less developed than the above trails. This trail may have less ice and snow, since it faces more westerly.

Always check on trail conditions before setting out on a hike. Talk with the rangers at the Backcountry Information Center or in the visitor centers. The bookstores feature many publications with trail descriptions. Winter hiking with fewer people and the natural quiet can be enjoyable or life threatening, depending on your preparation.

Park News



Interagency Annual Pass

If you are a frequent visitor to National Park Service or other federal agency sites that charge entrance fees, you may be interested in the *America the Beautiful – National Parks and Federal Recreation Lands Pass*. Five agencies—National Park Service, Bureau of Land Management, Bureau of Reclamation, U.S. Fish and Wildlife Service, and U.S. Forest Service—participate in the program. The \$80.00 pass is valid for one year from the time of first use. The program also offers a lifetime senior pass (\$10.00) for U.S. citizens 62 or over and a free access pass for citizens with permanent disabilities. The *America the Beautiful* pass may be purchased at entrance stations, Grand Canyon Association bookstores or online at www.recreation.gov. The senior and access passes are available only at entrance stations.

Wildlife Alert! Helps us keep our wildlife wild.

Winter snow and cold place demands on wildlife. Food becomes scarce, just as the need for body warmth increases. Many animals reduce their activity to conserve their energy resources. Some, like the rock squirrels that are so common in the summer, hibernate. If you attempt to approach deer and elk, they may flee, wasting precious energy. Always observe and photograph wildlife from a distance without disturbing them.

It is dangerous, and illegal, to feed wildlife in a national park. Animals may lose their fear of humans and become aggressive. Some may be struck by vehicles while searching for handouts.



ecologix

Xanterra's Environmental Commitment

Xanterra South Rim's Environmental Commitment

Xanterra South Rim has raised the bar of environmental performance for ourselves and the tourism industry, by setting standards to improve our environmental performance. Our activities include:

1. Xanterra is one of the few U.S. hospitality companies to achieve ISO 14001 certification of its environmental management system (EMS). We call our EMS "ecologix – the logical integration of business and ecology."
2. In a move that decreases visible emissions from our tour buses by 66 percent and improves fuel economy by close to 20 percent, Xanterra maintains hydrous alcohol injectors (Hydrofire) and throttle controls (DriverMax) on our bus fleet. This is a practical way to reduce pollution in the park from our fleet of motor coaches powered by naturally-aspirated diesel engines. Each motor coach travels an average of 20,000 miles per year.
 - The Hydrofire hydrous alcohol injectors works with the fuel injection system to reduce nitrous oxide (NO_x) emissions (a contributor to acid rain and smog) and increase the efficiency of the bus
 - The DriverMax throttle controls the acceleration cycle by optimizing fuel flow and operating between the driver's foot throttle and the engine.
3. The recycling program in the park – which accepts a wide range of items commingled in the same bins – has helped increase the amount of trash we keep out of the landfill, raising the percentage from 10 percent to 40 percent. In the brown bins around the park (and the blue ones in our guest rooms), you can recycle paper (including newspaper), plastic bottles (#1 and #2), aluminum cans, glass, metal, and cardboard. We also recycle household batteries (ask at our Retail stores where to leave them).
4. Xanterra is one of only a few companies in the entire tourism industry to produce an environmental sustainability report, publicly disclosing the company's environmental performance. If you stay overnight in our facility, there will be a copy of this report in your room.
5. Xanterra is the first U.S. hospitality company to be granted "Chain of Custody" certification from the Marine Stewardship Council to serve only Alaskan wild salmon and to ban certain types of fish species deemed harmful to the environment.
6. Xanterra South Rim purchases renewable wind power equal to 5% of our total electricity usage. This purchase of almost 670,000 kWh is the equivalent of taking 81 cars off the road or planting 127 acres of trees.
7. If you're staying with us more than one night, please help conserve water by participating in our towel and linen reuse program. Just by rehangng your towel on the rack, our staff will know not to unnecessarily change towels or linens.

The National Park Service thanks these concessioners for support with this and other publications.

Xanterra South Rim

Xanterra South Rim, L.L.C. is the primary concessioner and the sole provider of in-park lodging at the South Rim. Owned and operated by Xanterra Parks & Resorts, we have been providing quality guest service since the El Tovar Hotel was opened in 1905 by the Fred Harvey Company. Today park visitors have a choice of accommodations in seven distinctly different Grand Canyon lodging properties. Additional services include gift stores, restaurants and in-park tours.

As the nation's largest national and state park management company, we know that we play an integral part in the tourism industry and how it impacts the natural environment. This is why we are a company based upon values that reflect an environmental ethic and social conscience for the long term. We have taken the lead in this calling and have implemented comprehensive and broad-based environmental initiatives throughout all of our operations. Please join us in these efforts to reduce, reuse and recycle during your visit to this special place. For more information call (928) 638-2631 or visit www.grandcanyonlodges.com.

Xanterra
SOUTH RIM, L.L.C.
at Grand Canyon National Park

Xanterra South Rim, LLC.—We're not just close, we're there!

DNC Parks & Resorts

DNC Parks & Resorts at Grand Canyon (DNC) operates the General Stores in the park at Desert View and Grand Canyon Village under contract with the U.S. Department of the Interior. DNC encourages its associates to develop a strong relationship with the park during their tenure and to be good stewards of its special places in which we operate. For more information please contact us at (928) 638-2262.



Forever Resorts

Forever Resorts operates the Grand Canyon Lodge, restaurants, retail, gift and convenience stores, service station, and Grand Canyon Cookout Experience on the North Rim under contract with the U.S. Department of the Interior. Forever Resorts trains and encourages employees to foster a sense of awareness and stewardship in park visitors through an appreciation of park resources. For information on Grand Canyon North Rim Lodge, visit online at www.GrandCanyonForever.com.



**FOREVER
RESORTS**

Day Hiking



Before You Go . . .

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.

Winter Weather

On the South Rim, snow storms, blustery winds, and freezing temperatures occur throughout the winter. At the lower elevation of Phantom Ranch, rain can make your visit miserable, if you are not prepared. Learn the weather forecast. Hope for sunny skies, but prepare for the worst conditions.

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 your fluid consumption, you run the risk of becoming dangerously debilitated and severely ill. For every hour hiking in the canyon, you should drink ½ to 1 quart (liter) of water or sports drinks.

Your best defense against illness and exhaustion is to eat a large breakfast, a full lunch, 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.

Mules and Hikers

Encounters between hikers and mules have resulted in injuries to packers and the death of some mules. To ensure safety for yourself, other trail users, and mule riders, when encountering mules on the trails:

- Step off the trail on the uphill side away from the edge.
- Follow the directions of the wrangler. Remain quiet and stand perfectly still.
- Do not return to the trail until the last mule is 50 feet (15 m) past your position.

Hiking Tips

- 1 Be Prepared:** Know the weather forecast. Winter weather changes quickly. Know your route. Carry a map, flashlight, and extra clothing including wind and rain protection. Instep crampons may be necessary on icy trails.
- 2 Stay Comfortable:** Dressing in layers is the key to comfortable hiking. Do not forget your hat. It is important to stay dry and protected from 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 which may lead to fatigue, heavy legs, and exhaustion.
- 4 Rest Often:** Sit down, prop your legs up, and take a 10-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. Snack every time you drink. Food and water supply the extra energy needed for winter hiking.

Hiking Chart for some popular day hike destinations

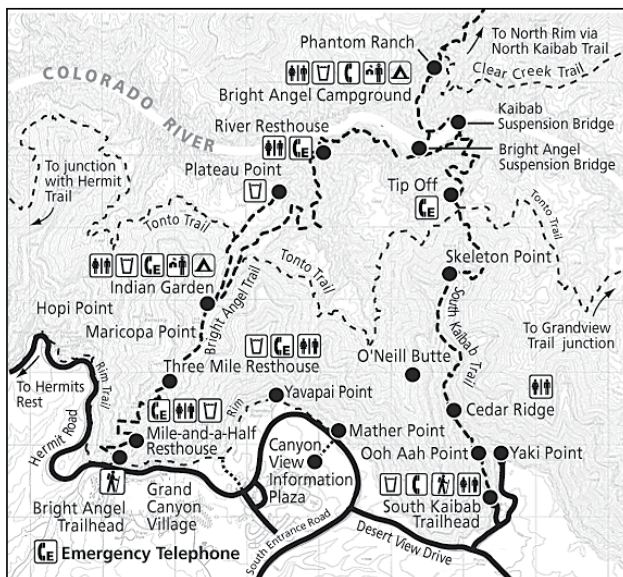
Warning! National Park Service rangers recommend that you do not attempt to hike from the rim to the river and back in one day, because of the distance, high canyon temperatures, low humidity, and the steepness of the trails. Few trails form loops; you will be hiking on the same trail in both directions. You are responsible for the safety of yourself and those in your party!

Trails

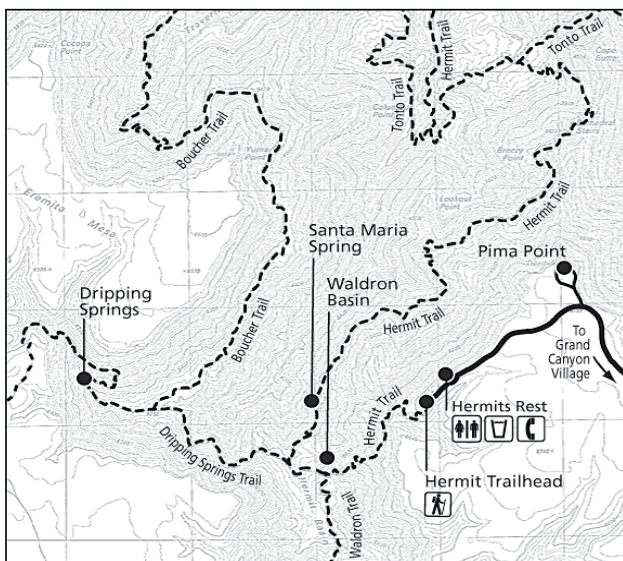
Destination	Round trip distance	Approximate time round trip	Elevation change	Notes	
Rim Trail (mostly flat, many sections suitable for wheelchairs)					
The Rim Trail offers easy walking and quiet views as it winds along the rim from Hermits Rest east to Pipe Creek Vista. Begin from any viewpoint and use the free shuttle buses to return.	Follows the rim for 12 miles	Your choice	15 minutes to half-a-day	200 feet 60 m	Mostly paved, except dirt from Monument Creek Vista east to Maricopa Point
Bright Angel Trail (steep, but popular)					
The most popular trail into the canyon begins west of Bright Angel Lodge. Water available at Indian Garden and Plateau Point (subject to line breaks). Upper portion of the trail may be extremely icy. Use crampons for safe walking.	1 ½-Mile Resthouse	3 miles 4.8 km	2–4 hours	1,131 feet 345 m	Rest rooms No water in winter
	3-Mile Resthouse	6 miles 9.6 km	4–6 hours	2,112 feet 644 m	Rest rooms No water in winter
	Indian Garden	9.2 miles 14.8 km	6–9 hours	3,060 feet 933 m	Rest rooms Water year-round
Plateau Point is extremely strenuous.					
	Plateau Point	12.2 miles 19.6 km	8–12 hours	3,195 feet 974 m	Water year-round View of river
South Kaibab Trail (steep with expansive views)					
Trail begins south of Yaki Point; you must ride the free shuttle bus to the trailhead. Best views for a relatively short hike, but no water. Upper portion of the trail may be extremely icy. Use crampons for safe walking.	Ooh Aah Point	1.8 miles 2.9 km	1–2 hours	600 feet 180 m	No water First view east
	Cedar Ridge	3 miles 4.8 km	2–4 hours	1,140 feet 347 m	Rest rooms No water
	Skeleton Point	6 miles 9.7 km	4–6 hours	2,040 feet 622 m	No water Second hitching rail
The Hikers' Express runs directly from the Bright Angel Lodge shuttle bus stop, the Backcountry Information Center, and Canyon View Information Plaza to the South Kaibab Trailhead daily: December, January, and February: 8:00 a.m. and 9:00 a.m.					
Hermit Trail (steep and rocky)					
This rough, unmaintained trail starts 500 feet (150 m) west of Hermits Rest. Recommended for experienced desert hikers. Hiking boots recommended. Water from springs must be treated. This trail may have less ice and snow, but still may be treacherous.	Waldron Basin	3 miles 4.8 km	2–4 hours	1,240 feet 380 m	No water, little shade
	Santa Maria Spring	5 miles 8 km	4–6 hours	1,760 feet 540 m	Treat water
	Dripping Springs	7 miles 11 km	5–7 hours	1,400 feet 430 m	Treat water Narrow trail

Hiking and Camping Below the Rim

Corridor Trails: Bright Angel and South Kaibab



Hermit Trail



Backpacking Permits

Backcountry Information Center
P.O. Box 129
Grand Canyon, AZ 86023
(928) 638-7875 Phones answered only
1:00 p.m. - 5:00 p.m. Monday - Friday
www.nps.gov/grca/

Overnight backpacking in Grand Canyon provides a degree of solitude, wildness, and silence that is increasingly difficult to find. A backcountry permit is required for all overnight backpacking, except for guests of Phantom Ranch. Permits can be reserved up to four months in advance. A fee of \$10.00 per permit plus \$5.00 per person per night is collected. The permit program helps to limit impacts to the natural resource while providing a greater degree of solitude for hikers.

Individuals arriving without a permit may be able to obtain one through a daily waiting list. Inquire early in the morning at the Backcountry Information Center, open daily 8:00 a.m. to noon and 1:00 p.m. to 5:00 p.m. For more information, pick up a *Backcountry Trip Planner* at the Backcountry Information Office or any NPS visitor center.

Leave No Trace

Leave No Trace is a nonprofit organization dedicated to promoting responsible outdoor recreation through education, research and partnerships. While enjoying your visit, please consider the following principles to minimize your impact and help protect Grand Canyon for future generations.

1. Plan ahead and prepare
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impacts
No campfires in Grand Canyon National Park backcountry.
6. Respect wildlife
7. Be considerate of other visitors

For more information: www.LNT.org

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:

Hypothermia

Hypothermia 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, and protect from wind, rain, and cold.

Hyponatremia

Hyponatremia 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!

Heat exhaustion

Heat exhaustion is the result of dehydration due to intense sweating. Hikers can lose one to two quarts (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

Heat stroke 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!

Want to know more?

Grand Canyon Association bookstores offer many books and maps on hiking. Bookstore hours and locations are listed on page 4. A few items to consider include:

- *Official Guide to Hiking Grand Canyon*, Scott Thybony
- The Grand Canyon Trail Guides series: Bright Angel, Grandview, Havasu, Hermit, North Kaibab, South Kaibab, South and North Bass
- Grand Canyon National Park Trails topographic map



Lodging and Services

Lodging

In the Park–South Rim

For same-day reservations, call (928) 638-2631. For advance reservations, call (888) 297-2757 or write:

Xanterra Parks & Resorts
6312 South Fiddlers Green Circle, Suite 600N
Greenwood Village, CO 80111

www.grandcanyonlodges.com

All prices are subject to change.

Bright Angel Lodge

On the rim. \$69–174

El Tovar Hotel

On the rim. \$174–426

Kachina Lodge

On the rim. \$170–180

Thunderbird Lodge

On the rim. \$170–180

Maswik Lodge

West end of village. \$90–170

Yavapai Lodge

Market Plaza. \$107–153

Phantom Ranch

Located at the bottom of the canyon. Overnight dormitory and cabin space. Advance reservations are required. Call for prices (see above) or inquire at the Transportation Desks in Bright Angel, Maswik, or Yavapai Lodges.

North Rim

North Rim opens for the season May 15, 2010.

Grand Canyon Lodge

Make reservations by calling (877) 386-4383 or www.foreverresorts.com

Outside the Park–Tusayan, AZ

Best Western Grand Canyon Squire Inn

(800) 937-8376 or (928) 638-2887

Canyon Plaza Resort

(800) 995-2521 or (928) 638-2673

Grand Hotel

(888) 634-7263 or (928) 638-3333

Holiday Inn Express

(888) 473-2269 or (928) 638-3000

Red Feather Lodge

(866) 561-2425 or (928) 638-2414

Camping

In the Park–South Rim

Camping is permitted only in designated campsites in Grand Canyon National Park.

Mather Campground

Operated by the National Park Service. No hook-ups are available, but there is a dump station. Maximum vehicle length: 30 feet. Campsites are self-serve during the winter. Drive through, pick a site, and register at the automated machine at the campground office. \$15.00 per night; \$7.50 for Senior or Access Pass holders. Cash or credit cards accepted.

For advance reservations at other times of the year (up to six months in advance) contact Reserve America at (877) 444-6777 or visit www.recreation.gov.

Trailer Village

Pull-through sites with hookups are located next to Mather Campground. \$32.00 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 Parks & Resorts. For same-day reservations, call (928) 638-2631. See advance reservation contact information in adjacent column.

Desert View Campground

Located near the East Entrance, 25 miles (40 km) east of Grand Canyon Village. Closed for the season; opens mid-May.

Outside the Park

Camper Village

Commercial campground located one mile (1.6 m) south of park entrance in the town of Tusayan. Hookups, coin-operated showers, laundry, propane, dump station, and store are available year round. Call (928) 638-2887 or (800) 638-2887.

www.grandcanyoncampervillage.com

Ten-X Campground

Operated by Kaibab National Forest. Located two miles south of Tusayan. Closed for the season; campground opens May 1. Information: (928) 638-2443.

Dining

Listed west to east along the rim.

Hermits Rest Snack Bar

Open daily 9:00 a.m. – 5:00 p.m.

Maswik Cafeteria

In Maswik Lodge at the west end of the village.

Open daily 6:00 a.m. – 10:00 p.m.

Sports Lounge 5:00 p.m. – 11:00 p.m.

Bright Angel Restaurant

In Bright Angel Lodge. Open daily.

Breakfast: 6:30 a.m. – 10:45 a.m.

Lunch: 11:15 a.m. – 4:00 p.m.

Dinner: 4:30–10:00 p.m.

Lounge: 11:00 a.m. – 11:00 p.m.

Bright Angel Coffee House

Located in the Bright Angel Lodge.

Open daily 5:30 a.m. – 10:00 a.m.

Bright Angel Fountain

On the rim in Bright Angel Lodge

Open December 26–January 3.

Reopens February 13 weather permitting.

The Arizona Room

On the rim in Bright Angel Lodge.

Reservations are not accepted.

Dinner: 4:30 p.m. – 10:00 p.m.

Closed January 3–February 12.

El Tovar Dining Room

Located on the rim. Open daily.

Breakfast: 6:30 a.m. – 11:00 a.m.

Lunch: 11:30 a.m. – 2:00 p.m.

Dinner: 5:00 p.m. – 10:00 p.m.

Dinner reservations are required:

(928) 638-2631 ext. 6432.

Lounge: 11:00 a.m. – 11:00 p.m.

Delicatessen at Marketplace

Located in the General Store.

Open daily 8:00 a.m. – 6:00 p.m.

Closed Christmas Day.

Yavapai Cafeteria

Located at Market Plaza.

Open December 24–January 3: 7:00 a.m. – 8:00 p.m.

Reopens February 12.

Desert View Trading Post Snackbar

Open daily 9:00 a.m. – 4:00 p.m.

Groceries

Canyon Village Market

The General Store is located in Market Plaza.

Open daily 8:00 a.m. – 7:00 p.m.

Closed Christmas Day.

Desert View Marketplace

Open daily 9:00 a.m. – 5:00 p.m.

Closed Christmas Day.

Books and Gifts

Listed west to east along the rim.

Hermits Rest 9:00 a.m. – 5:00 p.m.

Grand Canyon Village area

Maswik Gift Shop 7:00 a.m. – 10:00 p.m.

Kolb Studio 8:00 a.m. – 5:00 p.m.

Lookout Studio 9:00 a.m. – 5:00 p.m.

Bright Angel 7:00 a.m. – 10:00 p.m.

El Tovar 7:00 a.m. – 10:00 p.m.

Hopi House 9:00 a.m. – 5:00 p.m.

Verkamp's Visitor Center
..... 8:00 a.m. – 5:00 p.m.

Yavapai Curio
Open seasonally 9:00 a.m. – 5:00 p.m.

Books & More
at Canyon View Information Plaza
..... 8:00 a.m. – 5:00 p.m.

Yavapai Observation Station
..... 8:00 a.m. – 5:00 p.m.

Desert View area

Tusayan Museum 9:00 a.m. – 5:00 p.m.
..... Closed December 7–11

Desert View Bookstore/Park Information 9:00 a.m. – 5:00 p.m.

Desert View Trading Post
..... 9:00 a.m. – 5:00 p.m.

Desert View Watchtower
..... 9:00 a.m. – 5:00 p.m.
Watchtower stairs close 30 minutes before store closing.

Services

Medical

24-Hour emergency care dial 911
From hotel rooms dial **9-911**

North Country Grand Canyon Clinic
Monday–Friday: 8:00 a.m. – 5:00 p.m.
(928) 638-2551

Services

Laundry and Showers

Located near Mather Campground.
Open daily 8:00 a.m. – 6:00 p.m.
Last laundry load 4:45 p.m.

Chase Bank and ATM

At Market Plaza. 24-hour ATM.
Monday–Thursday: 9:00 a.m. – 5:00 p.m.
Friday: 9:00 a.m. – 6:00 p.m.
Accepts travelers checks and major credit cards.
(928) 638-2437.
ATM also available in Maswik Lodge lobby.

Post Office

At Market Plaza. (928) 638-2512
Monday–Friday: 9:00 a.m. – 4:30 p.m.
Saturday: 11:00 a.m. – 1:00 p.m.

Kennels

Open daily: 7:30 a.m. – 5:00 p.m. (928) 638-0534
For retrieval after 5:00 p.m., contact Fire and Safety: (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. Take found items to the Grand Canyon Visitor Center at Canyon View Information Plaza or Verkamp's Visitor Center.

Garage Services

Located east of the train depot. Open daily 8:00 a.m. – noon and 1:00 p.m. – 5:00 p.m.
Provides basic emergency repairs; tow service to Williams or Flagstaff. After hours emergency service available. (928) 638-2631

Tours & River Trips

Air Tours

Fixed-wing and helicopter tours originate daily from Grand Canyon Airport. A list of air tour operators is available upon request at NPS visitor centers 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. Contact any transportation desk or call (928) 638-2631.

Mule Trips

Two-day trips into the canyon to Phantom Ranch depart each morning. Three day/two night trips to Phantom Ranch available through March 31, 2010. A three-hour ride to the Abyss Overlook departs once daily through March 14, 2010; twice daily beginning March 31. Call (928) 638-2631 or contact the Bright Angel Lodge Transportation Desk for information. www.grandcanyonlodges.com

Horse Rides

Apache Stables at the north end of Tusayan is closed for the season. For information and reservations call (928) 638-2891.

Smooth-Water Raft Trips

Half-day and all-day trips on the Colorado River from Glen Canyon Dam to Lees Ferry are provided by **Colorado River Discovery** from March 1 to November 30. (888) 522-6644 or www.raftthecanyon.com.

Hiking and Backpacking

Grand Canyon Field Institute (GCFI) offers a wide variety of educational programs throughout the park. Expert instructors who share the wonder of Grand Canyon with participants of all ages and backgrounds lead these single- and multi-day classes. For more information call (866) 471-4435 or visit www.grandcanyon.org/fieldinstitute. GCFI is a program of the nonprofit Grand Canyon Association.

Transportation

Transportation Desks

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

Maswik Lodge

Hours vary seasonally

Bright Angel

Hours vary seasonally

Yavapai Lodge

Hours vary seasonally

Railroad

Grand Canyon Railway offers service between Williams, Arizona, and Grand Canyon. Call (800) THE-TRAIN for information and reservations. www.thetrain.com

Taxi Service

Service is available to the Grand Canyon Airport, trailheads, and other destinations. Daily 24-hour service. (928) 638-2631, ext. 6563.

Rim to Rim Shuttle

Closed for the season. 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 resumes May 15, 2010.

Shuttle Service

Arizona Shuttle provides shuttle service between Flagstaff and Grand Canyon twice daily, also serving Phoenix and Tucson as well as other locations in northern Arizona.

Arizona Shuttle

(877) 226-8060 or (928) 226-8060
www.arizonashuttle.com

Arizona Highway Information

511 or (888) 411-ROAD
www.az511.gov



Religious Services

Religious services are offered in the park and the nearby community. Current schedules are posted at Mather Campground (near the check-in station), Shrine of the Ages, the information kiosk near the post office, the Grand Canyon Visitor Center at Canyon View Information Plaza, and Verkamp's Visitor Center.

Church of Jesus Christ of Latter-Day Saints
Don Kiel, Branch President. (928) 638-9426

El Cristo Rey Roman Catholic
Father Eugene Cagoco, D.S., (928) 638-2390

Grand Canyon Assembly of God
Brian and Debbie Fulthorp, Co-pastors,

Grand Canyon Baptist Church
Rick Wiles, Pastor. (928) 638-0757

Grand Canyon Community Church
(Christian Ministry in the National Parks—multi-denominational)
Jared Long, Pastor. (928) 638-2340

Jehovah's Witnesses (Tusayan)
Borden Miller, (928) 635-4166

Jewish Services and Programs
Rabbi Nina Perlmutter, (928) 777-8172

Available in Tusayan

IMAX Theater. (928) 638-4629
Movie shown every hour on the half hour
. 10:30 a.m. – 6:30 p.m.

Kaibab National Forest
Tusayan Ranger District (928) 638-2443

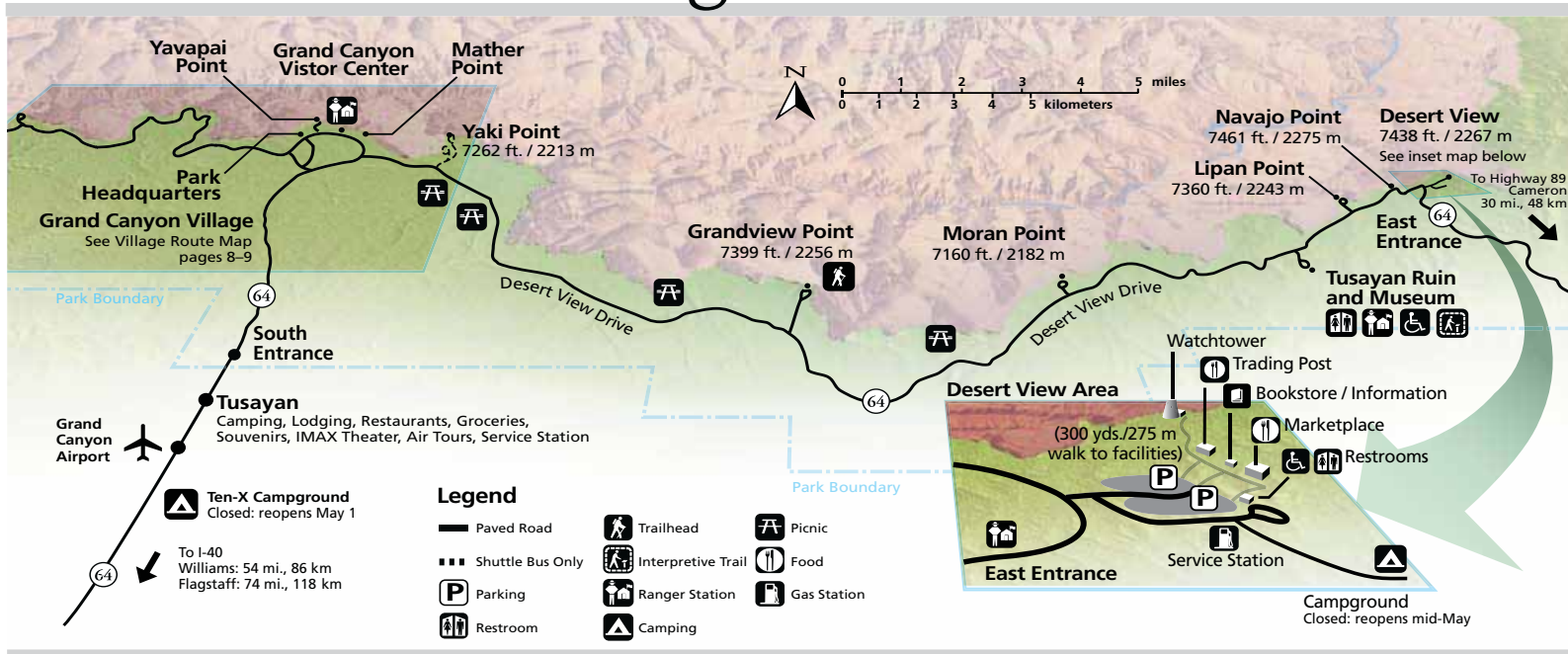
News and Weather
KNAU Radio FM 90.3

Hualapai Skywalk

The Hualapai Skywalk is on the Hualapai Indian Reservation, not in Grand Canyon National Park. The Skywalk is at the west end of Grand Canyon approximately 250 miles from the South Rim. Stop by any NPS visitor center for a brochure with a map.

The Skywalk is a Hualapai Tribal business. For information or to make reservations: (888) 868-9378 or (928) 769-2219 or www.grandcanyonwest.com.

South Rim including Desert View



GRAND CANYON ASSOCIATION

INSPIRE. EDUCATE. PROTECT.

The Grand Canyon Association (GCA) is a nonprofit organization created in 1932 to inspire and educate people to protect Grand Canyon National Park for the enjoyment of present and future generations. GCA has provided the park more than \$32 million in financial support. For GCA bookstore locations, see page 4.

When you shop at GCA bookstores, your purchase supports Grand Canyon National Park. Ask how you can support Grand Canyon National Park's educational programs and scientific research by becoming a member of the Grand Canyon Association. In addition to supporting the park, you will receive a 15 percent discount at all GCA bookstores, including our online bookstore at www.grandcanyon.org or call toll free (800) 858-2808, ext. 7030.

Member discounts are also available for most classes offered by the Grand Canyon Field Institute, GCA's outdoor education program. For more information about GCFL, visit www.grandcanyon.org/fieldinstitute.

Teachers can take advantage of GCA's *Travelin' Trunk* program, which brings the Grand Canyon to your classroom. For more information contact (800) 858-2808, ext. 7142 or www.grandcanyon.org/fieldinstitute/educators_trunk.asp.

North Rim



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

During the winter months, Highway 67 to the North Rim is closed at Jacob Lake, Arizona. Lodging and camping at the North Rim are available from mid-May to 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 edition of *The Guide* is published for the North Rim. Ask at any NPS visitor center for a copy.

Desert View Services

Chevron Service Station	Fuel available 24 hours with credit card all year
Desert View Marketplace	9:00 a.m. – 5:00 p.m. Closed Christmas Day
Bookstore/Park Information	9:00 a.m. – 5:00 p.m.
Trading Post Gift Shop and SnackBar	9:00 a.m. – 5:00 p.m.
Watchtower Gift Shop	9:00 a.m. – 5:00 p.m.
Watchtower stairs	Close 30 minutes before gift shop
Desert View Campground	Closed; reopens mid-May

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 the Grand Canyon National Park web site at: www.nps.gov/grca/

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