



More Than a Hole in the Ground

“Awesome” must be the word that’s used most often by visitors to Grand Canyon. But the views of the canyon are much better than awesome, far grander than grand; they’re *magnificent*—especially in the early morning or evening, when the colors of the rock are most vibrant.

Yet, even with eyes wide open and studying the views intently, the average visitor sees very little of the canyon: Not its two billion years of history. Not its five life zones. Not its 4,000 prehistoric sites. Not its 1,500 species of plants or 470 species of birds and other vertebrate animals. Not the width and power of the Colorado River.

What the average visitor *does* see is: the other side of the canyon about 10 miles away; one third of the canyon’s total length; a virtual mountain range rising from the canyon floor almost a mile below; and a spiritual beauty that’s unmatched anywhere.

This is one of the most popular natural attractions in the United States, visited by 4.4 million people a year. Most come—from all over the world—between mid-May and mid-October. For that reason, you may want to arrive just before or after that time.

If you haven’t yet visited “Magnificent Canyon,” you should.

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Guided Tours of Cities, Towns, and National Parks in the American West

by the Authors of *Seven Perfect Days in Northern California* and *Seven Perfect Days in Colorado*

Here is how the National Park Service sums up the astounding beauty and enduring power of this special place:

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. Its vast spaces offer solace from our hectic lives.

Two days at Grand Canyon are probably all you'll need to amply enjoy its pleasures—unless you plan to hike extensively, ride the mules to the bottom of the canyon, stay overnight at Phantom Ranch on the canyon floor, or take a raft trip on the Colorado River.

[Why not combine this trip with one to nearby Sedona? Sedona trip details are contained in the Summer 2007 issue of *Pathfinder Newsletter* which can be downloaded at <http://www.traveltheamericanwest.com>.]

Reservations and What to Bring Along

We strongly recommend that you make your room reservations well in advance of your trip, especially if you plan to visit Grand Canyon between mid-May and mid-October. All advance in-park room reservations on the South Rim are made through Xanterra Parks and Resorts. See “Where to Sleep” at the end of Day One for Xanterra contact information and for accommodations outside the park. For same-day reservations in the park, call 928-638-2631.

When you arrive at the South Entrance of the park, you'll be given a copy of the park's newspaper, *The Guide*. It's an excellent resource that's worth studying before you embark on your visit. It provides specific information about parking, the free shuttle bus routes, ranger programs, hiking trails, food establishments, information and commercial services within the park, detailed maps of Grand Canyon Village and of the drives both east and west of the village, and other useful news and suggestions.

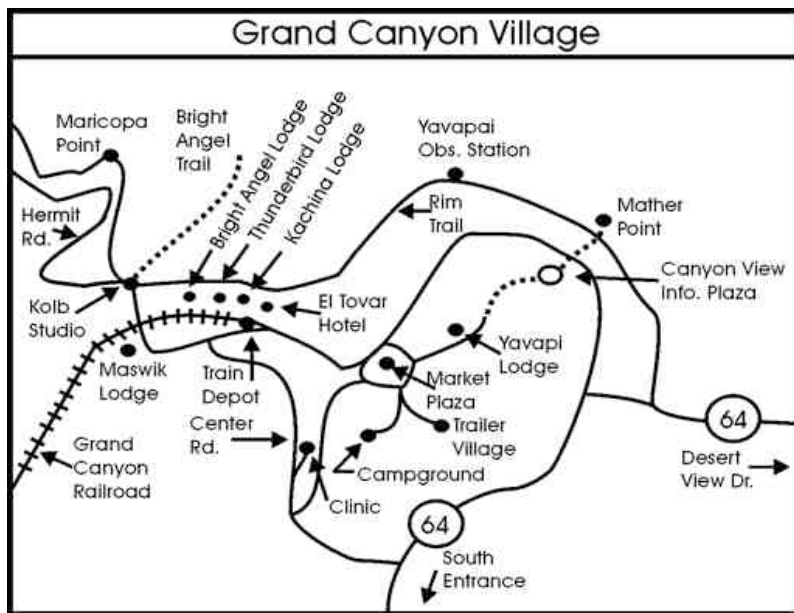
(Rather than drive to the park, you may choose to ride the train from Williams, Arizona. This is especially fun for children, because traveling musicians perform and the train gets “robbed.” Check out www.thetrain.com. While at the park, you can get from place to place using the free shuttle bus system.)

As for what to bring along, we're reminded of the Boy Scout Creed: “Be Prepared.” Because of the elevation at the South Rim of Grand Canyon (average 7,000 feet/ 2,100 meters), temperatures are mild from May through October—65 to 84 degrees Fahrenheit (18 to 29 Celsius) during the day, and 36 to 54 degrees (2 to 12 Celsius) at night—so you'll probably need something warm to wear in the evenings and early mornings. (Daytime temperatures do climb to over 100 degrees Fahrenheit/38 Celsius down inside the canyon.) Thunderstorms are common and expected in July, August and early September, so carrying rain protection at all times is a prudent idea. And you'll be outside most hours of the day, so you'll need a broad-brimmed hat, sunscreen, a pair of comfortable (not new) walking shoes and plenty of drinking water.

A Quick Orientation to the South Rim

Most visitors to Grand Canyon choose the South Rim because it's easier to get to than the North Rim, and because there are more facilities and things to do at the South Rim. Also, the North Rim is closed after the first heavy snow in November, through mid-May. If you want to also visit the North Rim, it's a 215-mile (346 km), five-hour drive. At 8,000 feet (2,400 meters) elevation, the North Rim is 1,000 feet (300 meters) higher than the South Rim.

A great resource for learning about both the south and north rims is the National Park Service's website at www.nps.gov/grca/planyourvisit/index.htm. Or you can contact the park at Grand Canyon National Park, P.O. Box 129, Grand Canyon, Arizona 86023, 928-638-7888.



The map to the left will help orient you to the heart of the South Rim, known as Grand Canyon Village. Note the locations of: Mather Point, Canyon View Information Plaza, Market Plaza (General Store/grocery, Chase Bank, Post Office), Yavapai Observation Station, Rim Trail, Bright Angel Trailhead, Kolb Studio, the Train Depot, the Kennels, Hermit Road, Desert View Drive, and the in-park lodgings (El Tovar Hotel, Bright Angel Lodge, Maswik Lodge, Thunderbird Lodge, Kachina Lodge, Yavapai Lodge, Trailer Village and Mather Campground).

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We recommend that you take along your copy of the *The Guide*, which you received when entering the park. It will be particularly helpful as you negotiate the shuttle bus system and select which ranger program you want to see. And, don't forget your raingear!

We also recommend that you start your Grand Canyon visit at Canyon View Information Plaza and Mather Point. Parking is often a problem, especially during peak season, so we suggest that you leave your car at your lodging and use the park's free shuttle buses. You can use the Village Route (blue) buses to get to most of today's sites. See *The Guide* for the locations of the Village Route bus stops. Buses generally run every 15 minutes; check *The Guide* for early- and late-day schedules.

The **Canyon View Information Plaza** is the park's principal visitor center. Outside, you'll find interesting displays; pay particular attention to the Bright Angel Trail display, because we'll be recommending that you walk part way down that trail tomorrow morning. Inside the visitor center, you'll find more displays, a walk-around model of the entire canyon, a venue for ranger presentations, and a desk staffed by park service personnel where you can ask your ques-

tions. One question you should ask is: What is today's "Ranger's Choice" program, and when and where is it to be held? (See the listing of Ranger Programs in *The Guide*.) Don't overlook the bookstore which is located across the plaza from the visitor center.

A movie theatre will be installed in the visitor center in the year 2010; in the meantime, the only movie about Grand Canyon is at the IMAX theatre in Tusayan outside the Park. The visitor center is open daily 8-6 from mid-May to mid-October and 8-5 the rest of the year. The bookstore remains open an additional hour.

Grand Canyon National Park visitor center is open daily 8-5; P.O. Box 129, Grand Canyon, 86023; 928-638-7888; www.nps.gov/grca;

After you finish at the visitor center, we suggest that you walk the 300 yards (275 m) on the paved path to **Mather Point**. If you're like us, your first view of Grand Canyon from there will be both breathtaking and humbling. The canyon is a space so vast and so complex that the mind can hardly take it in. We've heard that park rangers have measured the length of time that the average person spends here: five to ten minutes. We doubt that anyone comes all this way to spend so little time admiring the canyon; so we assume that most people view it from other locations as well.

But we would encourage you to spend more than five or ten minutes here: Stand at the end of the railed observation deck, look downward, then outward, and *feel* the vastness of the chasm in front of you. Look at the complexity of the towers, pinnacles and walls inside the canyon. Count how many shades of color are discernible on them. Imagine yourself on the canyon floor looking up at Mather Point. Close your eyes and ask yourself what you are experiencing. What words will you use to tell family and friends about this unique experience? Step back; watch and listen to other visitors' reactions. Answer this question: Is Grand Canyon more than a hole in the ground?

By the way, Mather point was named for the first director of the National Park Service, Stephen T. Mather.

Then, return to the Canyon View Information Plaza and hop back on the shuttle bus. The next stop is Market Plaza. Is there something that you need at the store? This is your chance to get it.

Yavapai Observation Station is the shuttle's following stop. It's here that you'll learn more about Grand Canyon and how it was made. It's an especially great place to spend an hour or two on a bad-weather day, because you'll be inside and absorbed by what you're learning.

The Yavapai Observation Station's purpose is to help visitors understand the complicated geology of the canyon. It provides expansive views of the canyon, behind large windows. It has exhibits that explain the deposition of the multiple rock layers, the uplift of the Colorado Plateau, and the carving of Grand Canyon. It has three-dimensional models, interpretive panels, photographs and videos that educate and entertain the visitor. It has a large topographic relief map that's helpful in understanding the scale of the canyon. And it has an excellent bookstore, which is open from 8 a.m. to 7 p.m. during spring, summer and fall, and until 6 p.m. during the winter months.

This is what we learned about the canyon's geology while at the Yavapai Observation Station and from other reading:

Grand Canyon is in the southwest corner of a huge landform called the Colorado Plateau. The plateau extends north from Arizona into Utah, northeast into Colorado and east into New Mexico. Over millions of years, the area that was to become the plateau was near a coastline, under the advancing and retreating ocean, collecting eons-worth of sediment, which became compacted over time. About 65 million years ago the plateau was thrust upward, by a collision of tectonic plates within the earth, to 5,000-10,000 feet (1,500-3,000 meters) elevation.

The result of all that deposition and hardening of sediment is the distinct layering of rock in Grand Canyon. The oldest on the bottom is dated at 1.84 billion years ago (yes, that's a "b," or 1,840 million), and the youngest on top is dated at about 270 million years. (The planet is estimated to be 4.55 billion years old.) Many of the upper layers are different forms of sedimentary rocks—limestone, sandstone and shale—the latter two are relatively soft rocks: the key to understanding how the canyon got so wide.

By comparison, Colorado's Black Canyon of the Gunnison was also carved into the Colorado Plateau, to the depth of ½-mile (0.8 km), but only averages 1,000 feet (305 meters) across. The reason? Hard rock, from top to bottom, similar to the rock found at the bottom of Grand Canyon.

So, how *did* Grand Canyon get so wide? And, where is all the rock that was eroded away?

Geologists say that the eroding of Grand Canyon began five or six million years ago, and that it's still continuing, although much more slowly because the rocks at the bottom of the canyon are so much harder than the upper sedimentary layers.

Significantly, the water flowed much more heavily following each of the many ice ages. All that water carried a great amount of sediment from upstream, which scoured the banks of the river, widened the river, undercut the soft rock in the canyon, and caused it to collapse into the river.

There are three reasons that the canyon got so wide. One is that there are springs and tributary streams along the length of the canyon that contribute to water erosion.

A second reason is that there is another form of erosion caused by ice. In the colder months of the year, water seeps into cracks of the rocks, expands, and widens the cracks. Over the millennia, flash floods washed down the side canyons causing the weakened rocks to fall away and gradually widen the entire Grand Canyon. And since each rock layer erodes in a different way, there are vertical and slanted shapes throughout the canyon.

A third reason is that the canyon gets very little rain, so there are few trees; and with no tree roots to stabilize the soil, the canyon erodes more easily.

The end result is that the fallen rock eroded and was carried as sediment downstream toward the Gulf of California, where it was eventually deposited in southwestern Arizona and southeastern California.

It's Lunchtime!

The dining room at the El Tovar Hotel has Grand Canyon's best food. The hotel is just two stops away by shuttle bus (get off at the Train Depot stop and walk up the hill and into the hotel).

The El Tovar dining room accepts advance reservations 30 days ahead for dinner (5-10 p.m., 928-638-2631, ext. 6432), but not for lunch. It's first-come-first-served for lunch, which is available from 11:15 a.m. to 2:00 p.m. But even during peak season, there is rarely more than a 15 to 20 minute wait for the 250 seats available. The dress code is casual.

If the El Tovar dining room is unusually busy, walk three buildings west to the Bright Angel Lodge, where you'll find the Bright Angel Restaurant, Bright Angel Fountain and the Arizona Room.

Take a look around the hotel before you leave. Along with many other historic structures in Grand Canyon Village, it was built by the Fred Harvey Company, the hospitality branch of the Santa Fe Railroad. It opened its doors in 1905 (and was last renovated in 2005), sits just a few dozen feet from the edge of the South Rim, is built of Douglas fir logs and local stone, has a hunting-lodge aura, is listed on the National Register of Historic Places, and is the premier lodging at the South Rim. Its famous guests include Presidents Theodore Roosevelt and William Howard Taft, Albert Einstein, George Bernard Shaw, Zane Grey and Arthur Fiedler.

Some Human History of the Canyon

While you're waiting to be seated, or while eating lunch, we thought you'd like to read a timeline showing the human history of the canyon, as determined from archeology and historical accounts:

- 12,000 years ago, a nomadic people who lived by hunting animals and gathering edible plants arrived at Grand Canyon.
- About 750 AD, people known as the Ancestral Puebloans (also as Anasazi) began building small villages in the area; you'll see one tomorrow at the Tusayan Ruin.
- In 1540, a band of Spanish conquistadores, led by Garcia López de Cárdenas, arrived at the south rim while searching for the "golden cities."
- In 1776, a Spanish Franciscan missionary explorer, Tomás Garcés, became the second European to see the canyon, while working with Native American tribes in the area.
- From 1820 through the 1850s, trappers and adventurers were active in the area, and the federal government sponsored expeditions led by Beal and Ives, among others.
- In 1869 and 1872, a one-armed Civil War veteran, Major John Wesley Powell, led two geological expeditions in the canyon using wooden boats.
- For four months in 1872, prospectors streamed into the canyon after two members of the second Powell expedition found traces of gold. There was too little gold and it was too hard to get to, so the rush quickly petered out.
- In 1883, tourism began; 67 people visited the canyon that year.
- In 1893, President Harrison proclaimed part of the area as the Grand Canyon Forest Preserve.
- In 1901, the Santa Fe Railroad began service to the south rim, and Grand Canyon Village began to take shape.
- In 1903, President Teddy Roosevelt visited the canyon; in 1906 he designated much of the area as the Grand Canyon Game Reserve; and in 1908 he created Grand Canyon National Monument, making the federal government responsible for preservation of the area.

- Beginning in 1904, Emery and Ellsworth Kolb built their photographic studio. You'll visit it this afternoon.
- From 1905 to 1931, architect Mary Elizabeth Jane Colter designed Hopi House, Lookout Studio, Bright Angel Lodge, Hermits Rest, Phantom Ranch and Desert View Watchtower using rustic designs and native rocks to blend the buildings into the landscape. You'll see all of these structures while on this tour. Her buildings became a National Historic Landmark in 1987.
- In 1919, Congress designated Grand Canyon a national park; 44,000 people visited that year.
- Congress established the current park boundaries in 1975.

Ranger Programs and South Rim Sites

At this point, we suggest that you take out your copy of *The Guide* and look at the listing of ranger programs. The afternoon programs usually last 30 to 45 minutes and are held at different times and at different venues. They may include programs such as "Ranger's Choice," "A Geo-Glimpse," "The Human Story," "Nature Walk," and "Condor Talk: Wings Over the Canyon." These programs are very worthwhile; it's your chance to learn from a knowl-



edgeable specialist about a topic that interests you. We very much liked the "Nature Walk" program, because we wanted to learn about the plants and animals on the South Rim. For a couple of the programs, you'll need to use the shuttle bus. Others are held near El Tovar Hotel.

As for nearby sites on the South Rim, you'll enjoy brief visits to the following, as time permits (Hopi House, Bright Angel Lodge and Lookout Studio are Mary Elizabeth Jane Colter designs):

- **Hopi House**, a shop offering handicrafts made by Native Americans, is immediately to the east of El Tovar.
- **Verkamp's Visitor Center**, on the rim east of Hopi House, opened in the fall of 2008. For 100 years, it was a gift shop operated by the Verkamp family. Staffed daily from 8-5 by uniformed rangers, the visitor center features displays about the history of Grand Canyon Village and contains a bookstore operated by the Grand Canyon Association.
- **Bright Angel Lodge** is the third building west of El Tovar.
- **Lookout Studio**, just across the Rim Trail from Bright Angel Lodge, has a gift shop and outside telescopes for viewing the canyon.

- **Kolb Studio**, the next building west of Lookout Studio, is perched on the canyon's rim at the head of Bright Angel Trail.

You wouldn't guess it from looking at the top level of Kolb Studio, but the building is five stories high and has 23 rooms. The final addition was completed in 1926 and the studio is on the National Register of Historic Places. It contains a bookstore and an exhibit hall featuring changing displays of Grand Canyon-related art.

In 1911, Emery and Ellsworth Kolb, made a movie of their exploration of the Colorado River, which was wildly popular wherever they showed it around the U.S. Emery continued showing it in the auditorium at the studio (currently the exhibit room) every day from 1915 to 1976.

For many of those years (until 1928, when water was piped into Grand Canyon Village), Emery would take photographs of tourists on mules just before they descended into the canyon. He would then hike rapidly down the canyon 4-1/2 miles (7.2 km) to the only "nearby" source of clean water at Indian Garden springs, develop the photographs in the darkroom he built there, and hike back up to the studio in time to sell the tourists their mementos as they finished their rides. He sometimes did this two or three times a day! Over the years, the Kolbs took photographs of more than three million Grand Canyon tourists.

Hermit Road Overlooks

You should have time for a late afternoon tour of at least some of the eight overlooks on Hermit Road, when the sun is at an angle that enhances the colors within the canyon. From March through November, cars are excluded from this route; transportation is via shuttle bus only. To get to the Hermits Rest shuttle, continue on the Rim Trail past Kolb Studio and turn left at the first opportunity.

If you'd like to walk, instead of ride the shuttle, at least for awhile, you can continue west on the Rim Trail to Trailview Overlook and beyond. The trail is quite steep in places and has some uneven surfaces, so we don't recommend it if you're not physically able to undertake such a walk. You can always hop on a shuttle bus at any overlook stop. Shuttle buses normally arrive about every 15 minutes.

The shuttle trip is seven miles (11 km) one way to the last stop, Hermits Rest, and takes a total of about 75 minutes without getting off the bus. But you will want to get off the bus at some or all of the overlooks, to gawk and take photographs.

There are short walks between Maricopa, Powell and Hopi Points. We believe that you'll enjoy the canyon views at **Trailview Overlook** (Bright Angel Trail switchbacks), **Maricopa Point** (1893-1988 copper and uranium Orphan Mine), **Powell Point** (John Wesley Powell Memorial), **Hopi Point** (Dana Butte, with Salt and Monument Creeks on either side), **Mohave Point** (Boucher and Granite Rapids at the end of Monument Creek), **The Abyss** (3,000-foot/900-m sheer dropoff to the Tonto Platform), **Pima Point** (Hermit Creek, Granite Rapids on the Colorado River, and a 40-mile view), and **Hermits Rest** (Hermit Rapids).

At Hermits Rest, you'll find another structure designed by architect Mary Elizabeth Jane Colter, with a snack bar, gift shop, rest rooms, water, and a massive rock fireplace. It's open 8-7 during summer and 9-5 in winter.

By the way, Hermits Rest was named for a French Canadian prospector by the name of Louis Boucher who lived alone mining copper and hosting tourists from 1891 to 1912.

This final fact for the day may astound you as it did us: Grand Canyon continues westward from Hermits Rest another 180 miles (290 km)!

It's Dinnertime!

See the list of restaurants below. We especially like the El Tovar dining room (reservations required) and the Arizona Room in Bright Angel Lodge (which closes for a few weeks during the winter).

Where to Eat

El Tovar Dining Room, El Tovar Hotel; continental cuisine; open year round, 6:30-11 breakfast, 11:30-2 for lunch, 5-10 for dinner; 928-638-2631 or eltovardining@xanterra.com. **The Arizona Room**, Bright Angel Lodge; southwestern cuisine; open March 1 through October 1, 11:30-3 for lunch, mid-February through December 4:30-10 for dinner; seating is first come, first served. **Bright Angel Restaurant**, Bright Angel Lodge; diverse traditional cuisine; open year round, 6:30-10:45 for breakfast, 11:15-4 for lunch, 4:30-10 for dinner; seating is first come, first served. **Bright Angel Fountain**, on the rim walk at Bright Angel Lodge; open seasonally and hours vary. **Canyon Coffee House**, Bright Angel Lodge; coffees and continental breakfast items; open year round, 5:30-10 a.m. **Maswik Cafeteria**, Maswik Lodge; traditional cuisine; open year round, 6 a.m. to 10 p.m. **Canyon Café** at Yavapai Lodge; diverse traditional cuisine; open seasonally, hours vary. There are lounges at El Tovar and Bright Angel Lodge, open year round 11 a.m. to 11 p.m., and a sports bar at Maswik Lodge, open year round 5-11 Monday-Friday and 3-11 Saturday and Sunday.

Where to Sleep

For the six inside-the-park Grand Canyon lodgings, make all advance reservations with Xanterra Parks and Resorts, 6312 South Fiddlers Green Circle, Suite 600N, Greenwood Village, CO 80111, 888-297-2757, www.xanterra.com. Consult the Xanterra website for property and room descriptions, availability, and rates. \$-\$\$\$. Also contact Xanterra for Trailer Village reservations. For Mather Campground (327 spaces, no hookups), call Reserve America at 877-444-6777 or visit www.recreation.gov. Desert View Campground, at the East Entrance operates on a first-come, first-served basis; 50 spaces; bathroom facilities, but no showers or hookups.

Accommodations outside the park, in or near Tusayan, include: **Best Western Grand Canyon Squire Inn**, 800-937-8376, www.grandcanyonsquire.com, \$\$-\$\$\$; **Grand Hotel**, 888-634-7263, <http://the-grand-hotel-grand-canyon.pacificahost.com>, \$\$\$; **Holiday Inn Express Grand Canyon**, 888-473-2269, www.ichotelsgroup.com/h/d/ex/1/en/hotel/gcnaz, \$\$-\$\$\$; **Quality Inn and Suites Canyon Plaza**, 800-995-2521, www.qualityinn.com/hotel-grand_canyon-arizona-AZ024, \$\$\$; **Red Feather Lodge**, 866-561-2425, www.redfeatherlodge.com, \$. **Grand Canyon Camper Village**, Tusayan, no website, recommend you read reviews on www.tripadvisor.com before making a reservation.

This morning, if you're up to it, we strongly recommend a walk part way down, and back up, Bright Angel Trail. This afternoon, we suggest a tour of the sites along Desert View Drive. And we have a special place in mind for you to eat a picnic lunch.

We're not necessarily recommending that you do the following, but we've enjoyed watching the wranglers prepare tourists to ride the mules down into the canyon. It takes place in the stone corral at the head of Bright Angel Trail, during a 45-minute period starting at 7:00 a.m. during the summer and at 8:00 a.m. during the winter.

Here are two hiking alternatives (to Bright Angel Trail) that may be better suited to your physical condition or interests: 1) walk some or all of the Rim Trail from the El Tovar Hotel to Hermits Rest (the trail is not all level in this section and most of it is unpaved; 7 miles/11.3 km); or, 2) hike the paved and level Rim Trail east a little over two miles (3.2 km) from El Tovar to Mather Point, where you can board a shuttle bus at nearby Canyon View Information Plaza. Walking the Rim Trail will enable you to enjoy changing views of the canyon from multiple points along the rim.

We recommend, because of the high elevation and heat, that you do not take the following hike if you have a history of heart or respiratory problems.

If you are able, we recommend that you hike the **Bright Angel Trail** as a way to become more intimately acquainted with Grand Canyon. Although it's steep, you'll find it to be an easy-to-follow, well-groomed pathway that's lined with rocks and has very few precipitous drop-offs.

We also recommend a start time no later than 8:30 a.m., especially during the summer months when it gets very warm beneath the rim of the canyon. And that you, and each person with you, wear comfortable walking shoes and a broad-brimmed hat, use sunscreen, wear sunglasses and carry rain protection, drinking water and a salty snack (such as trail mix or granola bars, for energy and to help avoid heat exhaustion). It's also wise to have a jacket with you, if there's any possibility that the weather might turn cool.

Here are some other do's and don'ts: Don't attempt to get to the bottom of the canyon and return in one day (it's too far, so the National Park Service strongly discourages this; and temperatures at the bottom often top 100 degrees Fahrenheit/38 Celsius during the summer). Don't hike alone. Do eat a large breakfast to provide the extra energy you'll need. Do yield to walkers who are coming uphill and to mules at all times. Do be sensitive to possible altitude sickness, dehydration or heat-related illnesses; if you get symptoms of headache, dizziness, nausea or rapid heartbeat, be sure to stop, rest and drink water. Do hike according to the conditions you encounter; don't push beyond your capabilities.

To give you a sense of perspective, you'll start your Bright Angel Trail hike on the canyon rim—just west of the Kolb Studio—at 6,860 feet (2,091 m) elevation, descend to Mile-and-a-Half Resthouse at 5,729 feet (1,746 m) elevation, and return to the rim. That's three miles (4.8 km) round trip and a 1,131 foot (345 m) altitude gain. The total hike should take about two and a half to three hours, because the uphill walk takes longer than downhill. Mile-and-a-Half Resthouse is a rustic stone shelter with benches inside. It has drinking water (May through September only), restrooms, an emergency telephone (many cell phones don't work below the rim) and restrooms nearby.

Are you wondering why the trail is here? Originally, it gave prehistoric American Indians a relatively easy way to get in and out of the canyon. In the late 1800s, it was improved-upon to provide access to mining claims. Today, it's Grand Canyon's most popular hiking trail

Before you get started, stand on the rim and consider three things: First, from here to the bottom of the canyon there are several distinct life zones, or communities of plants and animals, that are determined by elevation, temperature and moisture level. The life zones in this part of the canyon are: *Transition*, on the rim at about 7,000 feet elevation (2,100 m); *Upper Sonoran*, the rim to about 3,500 feet/1,100 meters; and *Lower Sonoran*, from about 3,500 feet to the river. The *Transition* Life Zone is characterized by ponderosa pine forests; the *Upper Sonoran* zone is a complex area of pinyon pine, juniper, and shrubs called chaparral; the *Lower Sonoran* zone contains cacti, succulents and other desert shrubs. (Today, you'll be hiking through the top part of the Upper Sonoran Life Zone.)

The farther down you go into the canyon the drier and hotter it gets, until you reach true desert conditions as in the Sonoran Desert of northern Mexico and southern Arizona. Generally speaking, plants and animals in the canyon live within the life zones where they are most comfortable.

Overall in Grand Canyon, there are 89 species of mammals, 355 kinds of birds, 47 types of reptiles, 17 varieties of fish, nine kinds of amphibians and 1,500 species of plants. It's hard to believe that this landscape has such a spectrum of animal and plant life, isn't it? The only wild-life you're likely to see on your hike is ground squirrels, lizards and ravens.

The second thing to consider is that the trail goes down a side canyon that resulted from shifting along the Bright Angel Fault. (A fault is a break in the land caused by the movement of massive plates within the Earth.) You can see that the fault continues northeast all the way to the North Rim. You can also see that the cliff to your left is about 200 feet (61 m) higher than the rim where you're standing. It and the layers below were raised to that level by the earth's movements upward along the fault.

And, third, there is the amazing geology of Grand Canyon—a partial historical record of the Earth, bared for all to see. By the time you get to the overlooks on Desert View Drive this afternoon you'll have a little better understanding of that geology, and you'll be able to *see and imagine* more than you could when you first observed the canyon at Mather Point.

Geologists tell us that the Colorado Plateau was under the sea several times during the past 500 million years. The layers of rock that you'll see are comprised of sand, mud and calcium carbonate-rich bodies of sea creatures that were deposited here, later hardened by the pressure from higher layers and finally forced upward as the land rose about 65 million years ago.

So, let's take that hike on the Bright Angel Trail, shall we? As you do, keep this in mind: Every step that you take, you'll be figuratively going back in time 20,000 to 30,000 years!

Following are the layers of rock that you'll see, in this order, as you descend to Mile-and-a-Half Resthouse; try to identify each as you walk. The limestone layers contain fossils of marine life such as shellfish, sponges, corals and sea lilies.

The hard top layer of rock, the *Kaibab Formation*, is tan to yellow-gray limestone, 270 million years old, 350 feet/110 m thick, and made up of calcium carbonate from marine organisms.

The *Toroweap Formation* features alternating beds of limestone, mudstone, and sandstone. It's orangy-red in color, 260 million years old and 250 feet/80 m thick.

The *Coconino Sandstone* layer is buff colored, 275 million years old, 350 feet/110 m thick and primarily compressed quartz sand.

The *Hermit Formation* is dark red (from iron oxide), 280 million years old, 300 feet/90 m thick, and a combination of silt, mud and fine sand.

As you stand in front of Mile-and-a-Half Resthouse, you'll see the reddish *Supai Group* sloping to 950 feet/290 m below you. It's 315 to 285 million years old and comprised of four separate but similar layers of sandstone, mudstone and limestone.

There are six more layers of rock below the Supai Group, ending with the dark Vishnu Schist, the canyon's base rock, which has been dated at about 1.7 billion years.

Not easily seen along the Bright Angel Trail, but partly visible near Phantom Ranch, is the Grand Canyon Supergroup, which is a tilted group of sedimentary and volcanic rocks dated at 1.2 billion to 740 million years ago.

(In addition to our own reconnaissances of the Bright Angel Trail and our general reading about the geology of Grand Canyon, we found three publications to be particularly useful: *A Guide to Grand Canyon Geology Along the Bright Angel Trail*, by Dave Thayer, *Hiking the Grand Canyon's Geology* by Lon Abbott and Terri Cook, and *Mac's Pocket Guide: Grand Canyon National Park Geology*.)

Before you return to the South Rim, we'd like to point out the next milestones on the trail that some serious hikers aim for. We are *not* suggesting that you do this; we're only giving you some sense of what lies ahead on the Bright Angel Trail.

Do you see the large flat area that has a trail crossing from south to north? It's a 1.7 mile-long (2.7 km) spur of the Bright Angel Trail that leads to a canyon overlook called Plateau Point. (This is the destination of the one-day mule ride.) The overlook provides a view of the inner gorge and of the Colorado River 800 vertical feet (240 meters) below it, and of the surrounding rock formations. Before you become tempted to take on this additional distance, allow us to warn you that Plateau Point is much farther than it looks. *To hike there would add 9-1/2 miles/15.3 km and seven hours to today's hike*, expose you to higher temperatures, and be significantly harder on your body.

And do you also see the grove of trees just before Plateau Point Trail begins? That's called Indian Garden. It's three miles from where you're standing; you've only come one-half that distance. You'll remember that Emery Kolb made daily 9-mile (14.5 km) round trip hikes to take advantage of the springs at Indian Garden to develop his tourist photos. (Do you appreciate his efforts now?) Today, it's a popular rest stop for serious hikers, and back packers use the site and its water for overnight camping (by advance reservation only).

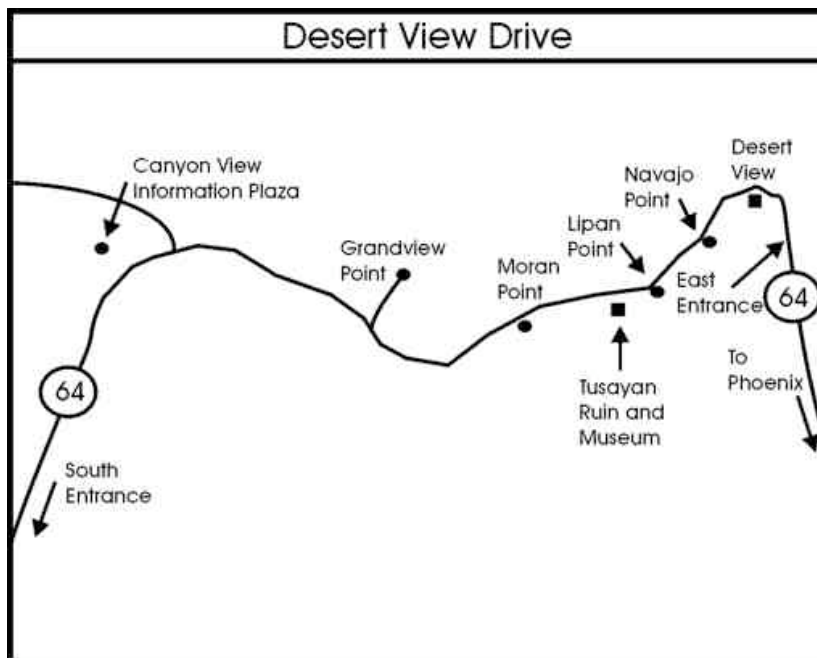
If the weather is sunny and comfortable when you return to the south rim, we suggest that you acquire the makings for a picnic lunch at the Maswik Lodge Cafeteria sandwich-making station, at the market in Market Plaza, or purchase a ready-made sandwich at the Bright Angel Fountain. What we have in mind for you is a lunch experience that you'll never forget: a picnic overlooking the canyon at Grandview Point on Desert View Drive.

Desert View Drive: Five Overlooks and an Indian Ruin

Have you seen enough Grand Canyon views? Will this be more of the same? Is your awestruck meter all tapped out?

We're betting that you're ready for more—especially after your morning trek down into the canyon. You now know what the terrain is like below the overlooks that you'll be visiting. You'll be able to recognize some of those layers of rock. And you'll appreciate the immensity of Grand Canyon even more than when you first saw it.

Desert View Drive, also known as Highway 64, is 25 miles (40 km) long, from Mather Point to the East Entrance of the park. There are six canyon overlooks and a very interesting Indian ruin and museum to enjoy. We'll skip Yaki Point overlook.



So, your first stop is **Grandview Point**, at about 10 miles (16 km), where you'll enjoy your picnic lunch and a spectacular panoramic view while sitting on the rocks below the observation deck. This viewpoint underlines the vastness of Grand Canyon. The most dominant close-by formation is Horseshoe Mesa about 2,600 feet (792 meters) below; you'll recognize it by its shape and circular "topknot." The mesa is the site of the closed Last Chance copper mine. Read the wayside exhibit to learn

about the mine and the about the hotel that once stood on the rim nearby.

If you want to work off your lunch by taking another short dip into the canyon, Grandview Trail starts right at your feet. It's a popular but very steep, narrow and unmaintained trail that's well used for the first half mile. It gets very icy during wintertime.

The next stop is **Moran Point**, about six miles (9 km) farther on Desert View Drive through a forest of juniper and pinyon pines. It was named for landscape painter, Thomas Moran, who illustrated John Wesley Powell's book about his exploration of the Colorado River. Ho-hum; just another gorgeous view of Grand Canyon and Hance Rapid on the Colorado River.

Then it's on to **Tusayan Museum and Ruin**, about 4.5 miles (7.2 km) beyond Moran Point. This site is your opportunity to learn about the prehistoric Native Americans who lived in this area from about 0 AD to 1200 AD. They occupied this village for a few decades at the end of that period. They are called the "Ancestral Puebloans," or "Anasazi," a term that's not appreciated by some modern American Indians.

Here, you have two interesting things to do. The first is a short, self-guided tour of the 14-room collapsed pueblo (village) where several farming families lived here in the late 1100s. (This is only one of more than 4,000 sites that have been found in Grand Canyon National Park.) Ranger-led tours are available, but the signboards and trail guide provide good descriptions of the site. You'll be able to see the San Francisco Peaks from here, through trees to the south. The second activity is a visit to the museum to see artifacts from the pueblo and the broader Grand Canyon, an artist's depiction of what the pueblo might have looked like when people occupied it, and displays about other local Native American cultures. (Tribes still active in the greater Grand Canyon region include the Havasupai, Hopi, Hualapai, Kaibab-Paiute and Navajo.) The museum is open daily from 9 to 5, 928-638-2305.

If you'd like to learn more about the Ancestral Puebloans, see the *Pathfinder Newsletter* titled "Southwestern Colorado: Mountains, a Train Ride and Mesa Verde" at www.traveltheamericanwest.com.

The next two stops, in short order, are Lipan Point and Navajo Point. At **Lipan Point**, you'll have a wonderful view of two curves on the Colorado River far below. This is the longest section of river visible from the rim. At **Navajo Point** (the highest elevation on the South Rim at 7,498 feet/2,285 meters) you'll have a clear view of the Watchtower, to your right, sitting on its promontory at Desert View.

Finally, you'll arrive at **Desert View** itself, where you'll have the opportunity to climb the **Watchtower** (86 steps, gorgeous views, free)—until 30 minutes before sunset. The first level of the Watchtower is patterned after a prehistoric kiva (a room used for religious and other communal purposes) and has a gift shop that sells authentic Native American arts and crafts. It's open daily from 8 a.m. to sunset.

At the bottom of the stairs, pick up a copy of "The Watchtower Guide." It provides detailed information about the artwork that you'll see.

The second level of the Watchtower, called the Hopi Room, features a religious sand painting (of the Snake Legend) on the floor and other artwork on the walls. The third level contains replicas of Native American petroglyphs. The fourth level provides 360-degree views of the entire area. The south-facing view features the San Francisco Peaks 41 miles in the distance, and the view to the north is the junction where the Colorado River leaves Marble Canyon and enters the east end of Grand Canyon. The Vermilion Cliffs can be seen about 30 miles (48 km) farther north. You'll also see the muted colors of the Painted Desert to the east and southeast, as well as the Navajo and Hopi Indian Reservations just beyond it.

The Watchtower was inspired by Ancestral Puebloan structures found in the Four Corners Region. You'll remember that it was designed by architect Mary Elizabeth Jane Colter and was built by the Fred Harvey Company (in 1932-33). It's 70 feet (21 m) tall and has the second highest elevation on the South Rim (7,522 feet/2,293 meters).

Also at Desert View, you'll find restrooms, a bookstore/information center, a Trading Post that sells groceries and outdoor supplies (until sunset), a snack bar, a service station and the Desert View Campground, which is open mid-May to mid-October.

As you leave Desert View and exit the park, we think you'll agree with our conclusion that Grand Canyon must be one of the most spectacular places on Earth.

Bill and Celia Ginnodo are residents of Arlington Heights, Illinois. They have lived and traveled extensively in the American West, including Arizona. They are the authors of *Seven Perfect Days in Colorado: A Guided Driving Tour*, *Seven Perfect Days in Northern California: A Guided Driving Tour* and *Seven Perfect Days in Arizona: A Guided Driving Tour*, which can be seen at www.pridepublications.com and www.amazon.com (enter keyword “Ginnodo”).

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Next Issue – “Olympic National Park: Mountains, Beaches and Rain Forest”