



by Bob Ribokas

The Grand Canyon of the Colorado River is one of the seven natural wonders of the world and one of our planet's most astounding accomplishments. The sheer majesty and beauty of the scenery found here is beyond belief. I have never seen a picture that has ever done it justice. I keep taking them and I manage to capture little pieces of beauty here and some majesty there, but to really understand the Grand Canyon, to really appreciate it, you have to see it with your own eyes.

Getting to Know the **GRAND CANYON**

Vital Statistics

The Canyon, as measured from Lees Ferry just below Glen Canyon Dam at the southern end of Lake Powell to the Grand Wash Cliffs at Lake Mead, is 277 miles (443 km) long. It averages 10 miles (16 km) in width from rim to rim, with the greatest distance being about 18 miles (29 km) and the least being about 5 miles (8 km). Its depth as measured from the North Rim is slightly more than a mile or about 5,700 feet (1,737 meters). The South Rim is approximately 1,200 feet (365 meters) lower than the North Rim. The area of the park includes over a million acres of land or 1,218,375.54 acres (493,077 hectares, 1,904 square miles, 4,931 km²) to be exact.

Traveling in and around the Canyon

The altitude of the Colorado River, at the bottom of the Canyon, averages around 2,200 feet (670 meters). The average altitude of the South Rim is around 6,800 feet (2,072 meters) with the highest spot, Grandview Point, being 7,400 feet

(2,255 meters). The average altitude of the North Rim is about 8,000 feet (2,438 meters) with the highest point, Point Imperial, being 8,800 feet (2,682 meters). The depth of the Canyon at the South Rim, near Grand Canyon Village, measures almost a vertical mile, about 5,000 feet (1,524 meters).

To hike to the bottom of the Grand Canyon, *just* to the bottom—*not* back to the top, requires at least one full day. Some people manage to do the trip to the river *and back* in one day but this is extremely hazardous, the person attempting it risks dehydration and hypothermia, and the Park Service discourages the activity. It is possible to take a one-day mule trip to Plateau Point almost to the bottom of the Grand Canyon. This point 1,200 feet (366 meters) above the Colorado River provides some excellent views of the river, the inner gorge, and the South Rim. Even the mules take two days to go all the way to the river and back.

A river trip along the full length of the Colorado River through the Grand Canyon can be done in as little as a week in a motor-powered raft or may take as long as 2 or 3 weeks in an oar-powered raft or dory. Shorter half-Canyon trips are also possible, but these require you to either hike in and join the trip or leave the trip and hike out at Phantom Ranch.

From the South Rim, as the crow flies, the North Rim is only 12 miles away, but by automobile it's a long drive of 215 miles, and 5 hours to the other side.

Discovery of the Grand Canyon

The first European to view the Grand Canyon was Captain García López de Cárdenas in 1540. Cárdenas was sent north from Mexico by Francisco Vásquez de Coronado in search of the fabled Seven Cities of Cíbola (Gold). Cárdenas and his party spent three days at the Canyon, trying to get down to the river, until depleted supplies forced them to give up. It was some three centuries before the Europeans would return to the Grand Canyon, when in 1869 Major John Wesley Powell became the first person to explore the entire length of the Canyon.

The North Rim was not visited by Europeans until 236 years after the South Rim, when in 1776 Father Escalante became the first European to visit the North Rim. Another reason for the North Rim being so isolated is because its ownership remained questionable well into the 20th century. Both Arizona and Utah claimed the territory, and it wasn't until Arizona was granted statehood in 1912 that the issue was finally decided. Even after that the "Arizona Strip" remained a no-man's land, and all that

was to be found there were a few scattered Mormon settlements, and some sizeable herds of cattle, horses, and sheep. Hunting on the North Rim was also very popular. One of the most notable hunters who frequented the area was President Teddy Roosevelt. Roosevelt eventually declared the area a game preserve and in 1919 persuaded Congress to protect the area by declaring it a national park.

The Colorado River

The Colorado River is the primary river of the American Southwest, draining approximately 242,000 square miles of land in the states of Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada, and California. The Green River is the primary tributary of the Colorado River, and until 1921 the Colorado River did not technically begin until the Grand and Green Rivers joined in Utah. In that year the Grand River was renamed the Colorado River at the request of the State of Colorado.

The headwaters of the Colorado River are located in Rocky Mountain National Park in Colorado. From here, at an elevation of 9,010 feet, the Colorado begins its flow southwestward toward the Gulf of California and the Pacific Ocean. By the time the river enters the Grand Canyon at Lees Ferry, its elevation has fallen to 3,107 feet, dropping over one mile since its beginning. The river will drop another 1,886 feet before it reaches the other end of the Grand Canyon, the Grand Wash Cliffs, 277 miles away.

The river within the Grand Canyon is 277 miles long, measured between Lees Ferry (Mile 0) and Grand Wash Cliffs. It drops 1,886 feet in elevation between miles 0 and 277.

The river flows through alternating sections of rapids and calm sections. The depth of the river varies from 6 feet to 90 feet, with the average being about 20 feet. The rapids are the shallow sections and the calm sections tend to be the deepest parts. Some deep holes have also formed at the base or foot of some of the major rapids. The rapids represent only 10 percent of the river's total length through the Grand Canyon, but are responsible for more than half of the total drop in elevation.

The Colorado River was originally named Rio Colorado or "Red River" by the Spanish. A person looking at the river today may not understand the reason for the name, as the present-day color of the river is more of a blue-green. The reddish-brown color that originally gave the river its name became a rarity upon completion of the Glen Canyon Dam in 1963. The silt and sediments that gave the river its color are now trapped behind the Glen Canyon Dam.

By examining river sediments, scientists have determined that, on a number of occasions over the past 4,000 years, the river reached peak flow rates of over 250,000 cubic feet per second (cfs). The peak flow rate through the Grand Canyon after construction of the dam was reduced to 50,000 cfs on rare occasions and is normally around 30,000 cfs. The primary purpose for construction of the Glen Canyon Dam was to prevent silt from building up behind another dam, Hoover Dam, at the downstream end of the Grand Canyon. Before construction of the Glen Canyon Dam, the river carried between 380,000 and 500,000 tons of silt and sediment through the Grand Canyon every day. (NOTE: A compact car weighs about one ton.)

Since the dam was built, the river carries only about 40,000 tons of sediments per day.

Construction of the Glen Canyon Dam has adversely affected the ecology of the Grand Canyon. Flash floods that would at one time scour the inner canyon clean and deposit fresh sand along the beaches no longer occur. The water temperature, which used to get as warm as 80 degrees F, is now icy-cold all year and averages around 42 degrees F. Because of the changes in the water temperature some native fish that used to inhabit the river have become extinct and still others are endangered. The Rainbow Trout, a nonnative species which was introduced by humans, thrives in the colder waters and makes it even more difficult for the native fishes to survive.

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