Grand Canyon National Park's Ranger Audio Tour
Roaring Springs

Listen carefully. What do you hear, the rush of the wind or the roar of water? If the wind is calm, the sound you hear is Roaring Springs. Roaring Springs is located 4.7 miles down the North Kaibab Trail and is the source of water for residents and visitors here at Grand Canyon. Water is not only pumped up to the north rim, it is pumped down to Phantom Ranch, up to the South Rim and then out to Desert View. As you can imagine the water is under tremendous pressure in order to reach these distant destinations.

Roaring Springs is one of many underground water supplies located throughout the Grand Canyon. Where does all this water come from? Let me explain: The Kaibab Plateau, which reaches elevations up to 9,000 ft above sea level, receives an average of 25 inches of precipitation a year with a record of 45 inches in 1978. The North Rim has an average snowfall of 138 inches a year with a record snowfall of 305 inches. In comparison, Anchorage, Alaska gets an average snowfall of 73 inches a year with a record of 133 inches. The North Rim average snowfall is 5" more than the record snowfall of Anchorage, Alaska. Those are quite amazing statistics considering we are surrounded by Arizona desert.

As the water melts atop this layer of Kaibab Limestone, some of it is caught in clay lined sink holes creating ponds. You may have noticed some of these wildlife water sources as you drove through the lush forest meadows leading to the North Rim. Some of the precipitation runs off into the canyon and the rest seeps into cracks and fissures through the porous limestone. As it makes its way through approximately 4,000 feet of permeable rock layers, such as limestones and sandstones, it reaches an impermeable area where the Muav limestone and Bright Angel Shale make a connection. At this point you can view water pouring out of cracks and caves in the limestone creating the flourishing green riparian area known as Roaring Springs. Riparian areas in the desert are important to the survival of many plants and wildlife creatures. When hiking in the area, if you stand quietly you may hear the high pitched, droning trill of the Red Spotted Toad.

Roaring Springs water flow varies between 4 and over 40 cfs within a one year cycle. To put this into easier terms, cfs stands for cubic feet per second. Imagine 1 basketball full of water representing 1 cfs. Roaring Springs releases anywhere from 4 to over 40 basketballs of water per second. In comparison, if you were standing on the banks or the Colorado River, you would see an average of 14,000 basketballs of water flowing by per second. Over 1.5 cfs of water is pumped up to the North Rim and almost 6 cfs of water is pumped to the South Rim. This leaves plenty of water to flow into Bright Angel Creek and soon after, into the Colorado River.

How would life be different at the canyon if this water source was not available? Would water be pumped out of the Colorado River? The water rights of the Colorado are a very sensitive subject since water is such a precious commodity in this southwest desert region. Speaking of water, when was the last time you took a good swig? Remember to drink plenty of water as you meander about this Grand Canyon.