

## Cross Country Relatives Road Trip (R24A-2) Yellowstone and Grand Teton National Parks

I took my annual road trip out to the Midwest and back to visit family, and as usual I did some sightseeing along the way. I once again planned to visit Yellowstone National Park on the way home as part of my itinerary. Of course, I've made such plans on four past trips only to have a winter storm show up, killing those plans. So, this year I pulled my trip forward into September.

Mother Nature caught on to my plans. It snowed in Yellowstone a couple days before I was to start exploring the park. Fortunately, that was early enough that the snow was mostly gone by the time I reached the park, and I finally got a nice visit to Yellowstone. This note focuses on my time in Yellowstone National Park and nearby Grand Teton National Park.



The north entrance to Yellowstone National Park is marked by the Roosevelt Arch. It was built in 1903 when train passenger service reached nearby Gardiner, Montana, and when the north entrance was the first major entrance into the park. It remains the only year-round entrance into Yellowstone.

A steep winding road leads to Mammoth, one of the visitor “towns” in Yellowstone, with lodging, dining, fuel and limited shopping. It is also home to the Mammoth Hot Springs Terraces, which has trails to get you close to some of its geothermal features.



The Liberty Cap formation



Palette Spring. The white is where the minerals have dried out, and the heat-loving microbes have died off. The microbes thrive where hot, mineral-laden water is still flowing, giving this formation some color. The Mammoth Hot Springs water is hot enough to be dangerous, but not hot enough for the formation of geysers, so there are only hot springs in this part of Yellowstone.



The road continues through the Silver Gate area, where the surrounding grey rocks are from rock falls above the road.



The Golden Gate gets its warmer color from minerals in the rock combined with the afternoon sun.



Swan Lake Flat. Although Yellowstone is famous for its many geothermal features including the world's highest concentration of geysers, there are also a great many rugged outdoor landscapes.



I drove by Roaring Mountain four times during the trip. The last time, the morning light had left the mountain in shade, but its numerous fumaroles, or steam vents, caught the morning sun, making it much more apparent than this photo does of just how many fumaroles there are on this mountain. The mix of steam and sulfur-rich gases create ideal conditions for a certain type of microbe that consumes the gases, and converts them into sulfuric acid which is breaking down the mountain.



The Fountain Paint Pots area features a half-mile boardwalk trail that winds its way among several geothermal features include this – the Fountain Paint Pot, a mud pot that features red, yellow and brown muds in an area with some steam vents.



Spasm Geyser is another one of the features in this area.

Arguably my top target for this visit was to see the Grand Prismatic Spring, the largest hot spring in the U.S. and third-largest in the world. The combination of its size and the microbes growing around it really makes Grand Prismatic Spring stand out in a park that features numerous outstanding features.



Like a lot of Yellowstone's major geothermal areas, boardwalk trails let visitors get up close to the park's springs, vents, mud pots, fumaroles and geysers, including Grand Prismatic Spring. But to really appreciate Grand Prismatic Spring, it is worth the 2-mile round trip hike to a nearby hillside for a more elevated view of the spring.



You get to see some geothermal features along this hike.

But none compare to Grand Prismatic Spring.



Grand Prismatic Spring. The blue water is nearly pure because the water in the middle is hot enough to kill any microbes. The green, yellow, orange and red colors come from heat-loving microbes.



As this overcast picture suggests, you really want to see this view with the sun bringing out the colors.

A few miles to the south is Yellowstone's most famous feature, Old Faithful Geyser, part of the Upper Geyser Basin.



Old Faithful got its name because for much of its recorded history it routinely erupted about every 60-70 minutes. After some regional earthquakes, the eruption frequency has changed to about once every 50 to 127 minutes.

Eruptions can shoot as much as 8,400 gallons of boiling water up an average of 145 feet, with eruptions lasting from 1 ½ to 5 minutes.





Looking out at part of the Upper Geyser Basin hiking area



Is the water boiling or are those gas bubbles? It depends on the hot spring, but either way the water is dangerously hot.



Blue Star Spring. The water here is too hot for the heat-loving microbes, so the water is more pure. Purer water leads to bluer water.



A closer look at some of the heat-loving microbial mats that provide color to some of the geysers and hot springs



Heart Spring and Lion Geyser



Anemone Geyser

For my second day of exploring the park, I visited sites in the northern and eastern parts of the park, where the tourist crowds were quite a bit smaller than those I found at the popular geothermal areas.



Bison graze towards the north end of the park



Hiking the Forces of the Northern Range nature trail



The Upper Falls of the Yellowstone River



The Lower Falls of the Yellowstone River and the start of what's called the Grand Canyon of the Yellowstone, as seen from Artist Point



The Lower Falls of the Yellowstone River



The Grand Canyon of the Yellowstone



A bison herd brought traffic to a standstill when part of the herd slowly made its way across the road.



Sulphur Caldron bubbles with pools of sulfuric acid. It teems with microorganisms called thermoacidophiles that love to live in an extremely hot, acidic environment.



A boardwalk trail leads through the nearby Mud Volcano Area. This is the Dragon's Mouth Spring.



I was a bit disappointed when I saw the mud volcano for which this area is named. Its small pool of bubbling sulfuric acid was less impressive than what I had just seen at the Sulphur Caldron. But when it was first discovered back in 1870, it would spray its "mud" into nearby treetops. Geothermal areas can change due to earthquakes or ups and downs in the water table. A few years after this got its impressive name, it blew itself up, leaving behind this small pool of bubbling muddy water.





The Churning Caldron is not the sort of hot spring that you might seek out for a soak.



The Cooking Hillside was covered by dense forest until a swarm of earthquakes hit the area in 1978. The trees survived the shaking earth, but soon ground temperatures here rose to 200 degrees Fahrenheit. The heat cooked the roots, killing and then toppling the trees that once grew here.

That pretty much covers my sightseeing in Yellowstone National Park. I missed some of the big highlights that were in my original plans – the Norris Geyser Basin, Black Sand Basin, West Thumb Geyser Basin and Yellowstone Lake among them. But visitation numbers are at near record levels, approaching 5 million people this year, most of whom will visit between May and October. The number was closer to 3 million the last year I was there. The roads, parking areas and other visitor facilities just haven't kept up with all of these people. Driving was often slow, and parking lots were often overflowing.

I avoided the worst of the crowding by going in September, but if I go back, I'll once again try to get there in October in spite of the increased risk of snowstorms hitting the park at that time of year.



After finishing up my sightseeing at Yellowstone, I headed south toward Grand Teton National Park. But first I had to pass through the John D. Rockefeller, Jr. Memorial Parkway, a separate National Park Service official unit. For most tourists, it's basically just the five-mile stretch of road between Yellowstone and Grand Teton.

The drive would have been through forested land, but forest fires in recent years have done a number on the park's trees.

Grand Teton National Park is home to the major peaks of the 40-mile-long Teton Range. The Teton Range was formed much like the mountain ranges we see in Nevada's Great Basin, where large blocks of earth stretched apart and tilted, one end rising up into mountains, the other sinking into valleys. But at just 6-9 million years old, it is the youngest range in the Rocky Mountains. This makes it much younger than the ranges in Nevada, so the Tetons are less eroded, making them taller and more rugged.

A park road takes visitors off the highway, and provides stops at several places that feature views of the mountains. However, it doesn't take long to realize that we're just seeing the same mountains from several different angles and with different foregrounds. Still, they're quite pretty, so it's worth taking the slower park road.



Looking across Jackson Lake toward the Teton Range



The Snake River starts in Yellowstone National Park and flows south into Jackson Lake. It leaves Jackson Lake here and flows west across Idaho, and then north to Oregon and Washington where it finally reaches the Columbia River.



The Tetons at Willow Flats



Mt. Moran as seen from the Mt. Moran Turnout



Heading south out of the park towards Jackson, Wyoming

After leaving the park, I headed west into Idaho, where I spent the night at Idaho Falls. From there it was south towards Las Vegas on a route that mostly followed I-15. I did have a couple museum visits in Utah as part of my plans, both known for their dinosaur displays.

The least impressive of the two was the Stewart Museum of Paleontology in the George S. Eccles Dinosaur Park in Ogden, Utah. Not just because it was easily the smaller of the two, but the exhibits didn't really tell much of a story. Also, its outside dinosaur sculpture park was more of the attention getter when it came to other museum visitors, especially those with children.



When fossils of long-necked dinosaurs are found reasonably intact, they often have this “death pose” where the head appears to be leaning way back, the mouth is open and the tail is extended. It is widely believed that strong ligaments in a dinosaur’s neck desiccate and contract when it dies, drawing the body into this position. However, there is still a lot of uncertainty about this, and other possible explanations are the subject of more recent research.



The museum’s dinosaur sculpture park seemed to be the real drawer for many of the visitors I saw.



The Natural History Museum of Utah, on the campus of Utah State University in Salt Lake City, presented a much bigger collection of fossils and fossil casts, it did a much better job of telling their stories, and the museum went well beyond paleontology in its displays, including other favorite subjects of mine – Native American archaeology and geology – which gave me some ideas for other areas in Utah to explore on future trips.



Ancient woven footwear, which can sometimes survive for millennia in dry caves

I made one last sightseeing stop on the way home at Timpanogos Cave National Monument. I stopped here once late in the day in 1994. The visitor center had closed for the day, so I took a few photos and left. I had never made it back there until now.

No caving for me this time. First, you need appointments now to join cave tours. Second, getting to the cave entrance requires a fairly steep uphill climb – 1 ½ miles with a 1000-foot elevation gain. Slopes can be problematic for my booted feet, and that is a lot of slope. And third, my booted feet would really slow me down in the cave system itself. But I did take in the displays in the visitor center, I took some photos of the mountain where the cave is, and I hiked the park's nature trail. So, it was a better visit than my 1994 stop, but I'm not likely to return to visit the cave itself.



The red arrow points to where the tour exits the cave system.

The rest of the drive home was uneventful.