

Johnson County Jim Gatchell Memorial Museum



Johnson County Natural History Tour

The Johnson County Jim Gatchell Memorial Museum presents this driving tour for your enjoyment.

Travel to different areas to learn about Johnson County’s natural history as well as the human history of the landscape. Participants will be traveling west along Highway US-16 and conclude the tour at the Dry Creek Petrified Tree Environmental Education Area.

To reach Mosier Gulch Picnic Area from the Johnson County Jim Gatchell Memorial Museum, drive 6.8 miles west of Buffalo along US-16W and make a sharp left at Mosier Gulch Road.



1. Mosier Gulch Picnic Area

The BLM Buffalo Field Office and the City of Buffalo manage the Mosier Gulch Picnic Area. It is located next to the Bighorn National Forest. Visitors can fish, float the river during the spring melt, and view wildlife such as mule deer, antelope, eagles, and occasionally black bear and elk.

Return to US-16 and drive west 9.6 miles before turning left onto Tie Hack Road. Enjoy viewing the rock formations alongside the highway.



2. Geology of Johnson County and the US-16 Rock Formations

The rock formations along US-16 are made up of Paleozoic limestone and dolomite beds which cut into much older Precambrian rocks that are roughly 2.5 – 3 billion years old. The metamorphic rock layers were formed through a combination of extreme temperature and pressure, most likely during an ancient mountain building period. Mountains in Wyoming generally

contain limestone, gypsum, bentonite, phosphate rock, copper, iron ore, molybdenum, and feldspar, as well as deposits of oil, natural gas, coal, and uranium. The various layers in the geology of the Big Horns were caused by the constant eroding and uplifting of the mountains.



3. Tie Hack Dam and Reservoir

Tie Hack Dam and Reservoir provides water to the City of Buffalo and is located at the confluence of the South Fork of Clear Creek and Sourdough Creek. The dam was finished in 1997 and stands at an elevation of 7,900 feet. Tie Hack Reservoir is a popular fishing spot; anglers can catch Brook, Brown, Cutthroat Trout, and Grayling. No motorized boats are allowed on Tie Hack. Other nearby fishing spots include Meadowlark Lake, Lake DeSmet,

and Healy Reservoir.

From Tie Hack Road, turn left onto US-16W and drive 2.1 miles. Turn right onto Sourdough Road.



4. Sourdough Dam

Sourdough Dam, made completely of logs and earthen banks, was the original Tie Hack Dam before the current engineered reservoir and dam were built. Sourdough Creek, for a century, was a major source of timber production in Johnson County. Timber workers, known as “tie hacks”, would cut logs and stack them within the creek through the winter months. In the spring these earthen dams were blown up, and flumes, sometimes three and a half miles long, carried the heavy ties down Clear Creek to Buffalo. In 1925, two years after the Clear Creek Tie and Timber Company was formed, 15,000 ties were floated down Clear Creek. At the peak of production, just prior to the Great Depression in 1929, that number expanded to over 150,000.

From Sourdough Dam, return to US-16W, turn right, and drive for 8.2 miles before making a left turn onto Forest Service Route 33/County Road 14, also known as Crazy Woman Canyon Road.

**** Only turn onto Crazy Woman Canyon Road if your vehicle can handle off-roading. Vehicles larger than an SUV or pickup are NOT RECOMMENDED. ****



5. Crazy Woman Canyon

There are many legends regarding the naming of Crazy Woman Canyon. One involves a white woman while another a Native American woman. Crazy Woman Creek originates in the Hazelton Peak area of the Big Horn Mountains and becomes a tributary of Powder River. The canyon is a beautiful drive with sheer rock walls on both sides closely following the creek. During the summer, many species of wildflowers are in bloom. It started out as a stock trail before a CCC camp stationed there in the 1930s dynamited the canyon to create the wider road.

Continue on Crazy Woman Canyon Road until you reach WY-196 N/Old Hwy 87. Turn left and drive 11 miles until you reach the intersection of I-25/S. Main Street/S. Bypass Road. Continue straight on S. Bypass for 0.5 miles until you reach E. Parmalee Street/Stockyard Road. Turn right onto Stockyard Road and after 1.6 miles turn right onto County Road 204/TW Road. Continue on TW Road for about 7 miles, driving underneath I-90, and turn left at Tipperary Road. 2.6 miles down the road is the Dry Creek Petrified Tree Environmental Education Area on the left.



6. Red Hills and Scoria

As you drive along Tipperary Road towards the Dry Creek Petrified Tree Environmental Education Area, you may notice red buttes around you. The reddish *scoria* or clinker is made of shale or sandstone that is fused underground in burning coal beds, turning red when the iron in the rock is exposed. Due to the abundance of scoria in the area, the material is used in road construction, giving roads in Johnson County their red color.

Wyoming has many extensive coal beds. Long ago, Wyoming was the site of an inland sea. Later swamps formed in the region during the Paleocene Era and supported vegetation. Peat, a form of vegetation, is created when leaves, branches, stems, trees, aquatic plants, etc. accumulate and decay. Over time, and with consistent accumulation of sand and mud from the flooding of rivers, peat becomes buried and finally turns into coal due to pressure from the layers above. The Powder River Basin, which includes Johnson County, contains thick seams of coal that run for hundreds of miles beneath the surface.



7. Sagebrush and Johnson County's Landscape

Sagebrush covers nearly half of the Wyoming landscape and provides habitat and food for 87 mammal species, 297 bird species, and 63 reptile, fish, and amphibian species. Some of the species you might see in sagebrush include sage grouse, fox, coyote, and pronghorn.



8. Fire Ecology of Johnson County

The fire ecology of Johnson County is variable, depending upon the diverse plant communities that reach from the Big Horn Mountains to the Powder River basin. Most plants in the area are adapted to fire and re-establish themselves by seed or re-sprouting. Chokecherries, aspen, and most grasses typically re-sprout after fire whereas Curl-Leaf Mountain Mahogany and Wyoming Big Sagebrush reestablish themselves by seed. Some trees like Ponderosa Pine are resistant to surface fire and survive the low flames. Lodgepole Pine forests require canopy fires to create favorable conditions for new seedlings as the heat opens the closed pinecones and releases their seeds.

A number of plant species require fire or other disturbances to maintain structure and function while others require long undisturbed periods of time to fully develop. Seasonal weather systems and lightning from summer thunderstorms contribute to these fire cycles and burn patterns in northeastern Wyoming.

At various places around Johnson County you can see burn patterns where fires have occurred. This is most easily seen along the eastern slopes of the Bighorn Mountains where some patches of forest look shorter or younger than the surrounding forest. Some patches are so young that grasses and shrubs have re-sprouted and dominate the landscape.



9. Dry Creek Petrified Tree Environmental Education Area

The Dry Creek Petrified Tree Environmental Education Area is located 13 miles east of Buffalo and features a 0.8 mile interpretive walking trail. This area of Johnson County is an excellent place to see evidence of the Paleocene swamp landscape. The petrified trees formerly towered as *Metasequoia* (Dawn Redwoods) trees at the edge of an ancient swamp.

Scientists believe this area was the site of massive flooding that buried the lower trunks and roots in sediments while the branches died and decayed. The submerged roots and trunks were

preserved because there was not any oxygen in the soil to allow decay. The trunks and trees gradually turned into different colored rocks, depending on the minerals absorbed during the petrification process.

- Carbon: Black
- Cobalt: Green/Blue
- Chromium: Green/Blue
- Copper: Green/Blue
- Iron Oxides: Red/Brown/Yellow
- Manganese: Pink/Orange
- Manganese Oxides: Black/Yellow

From the Petrified Trees site, turn right onto Tipperary Road. Take the first right onto TW Road, which will intersect US16E/Hart Street east of Buffalo. Turn left onto US16E/Hart Street and left onto Main Street to return to downtown Buffalo.

Photographs are courtesy of Jennifer Romanoski and Francine Russell. Thank you to the BLM and the Forest Service for their assistance.

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JOHNSON COUNTY WYOMING

