



The Volcano Yellowstone National Park inspires awe in travelers from around the world. New Zealand and Iceland are known for geysers, but nowhere are there as many as in Yellowstone. At the heart of Yellowstone's past, present, and future lies volcanism. About 2 million years ago, then 1.3 million years ago, and again 640,000 years ago, huge volcanic eruptions occurred here. The latest spewed out 240 cubic miles of debris. The central part of what is now the park collapsed, forming a 30- by 45-mile caldera, or basin (*see outline on large map*). The magmatic heat powering those eruptions still powers the park's geysers, hot springs, fumaroles, and mudpots. The Grand Canyon of the Yellowstone River

gives a deeper view of these forces: its waterfalls highlight the boundaries of lava flows and thermal areas. Rugged mountains flank the park's volcanic plateau, rewarding eye and spirit.

Plants and Animals Yellowstone wildlife includes bison (buffalo), elk, grizzly and black bears, wolves, trumpeter swans, and Yellowstone cutthroat trout. Vegetation types range from near-desert vegetation at the North Entrance to subalpine meadow and forest on Mount Washburn. Lodgepole pine covers 60 percent of the park and makes up 80 percent of the forested areas.

People in the Park Yellowstone's human history spans at least 11,000 years and includes the sagas of Native Americans, fur trappers, explorers, surveyors, photographers, artists, and the U.S. Army. Photographs by William Henry Jackson and sketches by Thomas Moran influenced Congress in 1872 to make Yellowstone the world's first national park—now a land-use model for many nations.

About this Guide The tours below help you choose what to see in your time in Yellowstone. They give capsule advice on three parts of the Grand Loop's figure-eight-shaped road system that

connects the park's major attractions. Maps on the back of this brochure show park facilities and services, which are also found in the gateway communities of Jackson and Cody, Wyo., and West Yellowstone, Gardiner, Silver Gate, and Cooke City, Mont.

Ask at a visitor center for other publications to help you see and grasp the park's significance, because park roads sample only a fraction of Yellowstone. The rest of the park is backcountry, traversed by some 1,000 miles of trails.

Minerva Terrace, Mammoth Hot Springs (above)
© HENRIK KASER / PEXEL STOCK

A Guide to the Park and Its Wildlife



Staying Safe and Legal in Yellowstone

All wildlife, especially bison and bears, can be dangerous; keep your distance! Never approach, harass, or try to feed any animals, even small ones. It is illegal to get within 100 yards of bears and wolves or 25 yards of other wildlife or within any distance in which harassment occurs. Pets must be leashed and are prohibited on all trails, in thermal basins, and in the backcountry. Maximum speed limit is 45 mph, lower when posted. Please drive defensively! Traffic accidents cause more

injuries to people than natural hazards. Use pull-outs to watch wildlife and to let faster traffic pass. Be alert for pedestrians and bicyclists. Driving off roads is not permitted. Store valuables securely, lock your vehicle, and report thefts or accidents to a ranger. To deface park features, collect archeological or natural objects, litter, or pick wildflowers is illegal. Geyser areas and hot springs are fragile and unstable; stay on trails to protect yourself and park features. To throw coins or

other items into thermal pools damages them, and it is illegal. Climbing in the Grand Canyon of the Yellowstone River is prohibited. Swimming or bathing is prohibited in hydrothermal pools or streams where water flows entirely from a hydrothermal spring or pool. Fishing and boating require permits, which are available at ranger stations. Read the

regulations! Many streams are catch-and-release or fly-fishing only; some are closed to fishing. Boating is allowed only on some lakes; they are dangerously cold. Hike with others and check at visitor centers for current trail conditions. Trails can be closed because of bears, high water, or other dangerous conditions. All overnight trips require a backcountry permit, available at ranger stations. Vehicles are prohibited on trails; bicycles are permitted on a few designated trails.

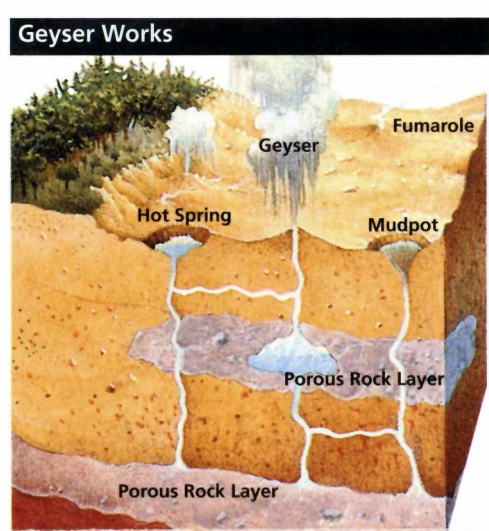
Bear country! Grizzly and black bears are wild and dangerous. People have been injured seriously and killed by both. Bears may seem tolerant of people but may attack without warning. Always view bears from a safe distance. FEEDING ANY WILDLIFE IS ILLEGAL—including birds and small mammals. Often, animals who get handouts become aggressive and have to be killed. To avoid personal injury, store food

More Information
307-344-7381
307-344-2386 TTY
307-344-2117 road updates
www.nps.gov/yell
EMERGENCIES: Dial 911.

Three Tours of Yellowstone



Old Faithful to Mammoth Hot Springs



Surface water seeps underground, is heated by a deep source of magma, and rises as superheated water. Geysers occur when underground constrictions increase the pressure of the water until it finally erupts. Hot springs have no constrictions, so water rises, cools, and sinks. The small amount of water in fumaroles flashes into steam before it reaches the surface. Mudpots are acidic features with limited water; the acid and microorganisms decompose the surrounding rock into clay and mud.

Driving to the Old Faithful area from the South Entrance, you cross the Continental Divide three times. This route also passes five geyser basins—West Thumb, Upper (Old Faithful), Midway, Lower, and Norris—on the way to Mammoth Hot Springs. Between the Upper and Norris basins, you can sample the world's largest concentration of geysers. Old Faithful Visitor Education Center, museums at Norris, and the Albright Visitor Center tell aspects of the park's stories.

Old Faithful Old Faithful Geyser is the world's best known geyser. Its eruption intervals have varied from 40 to 126 minutes. Find out the eruption times of Old Faithful and other large geysers at the visitor center.

Old Faithful to Madison In Black Sand Basin, bright colors of Sunset Lake and Emerald Pool attract photo-

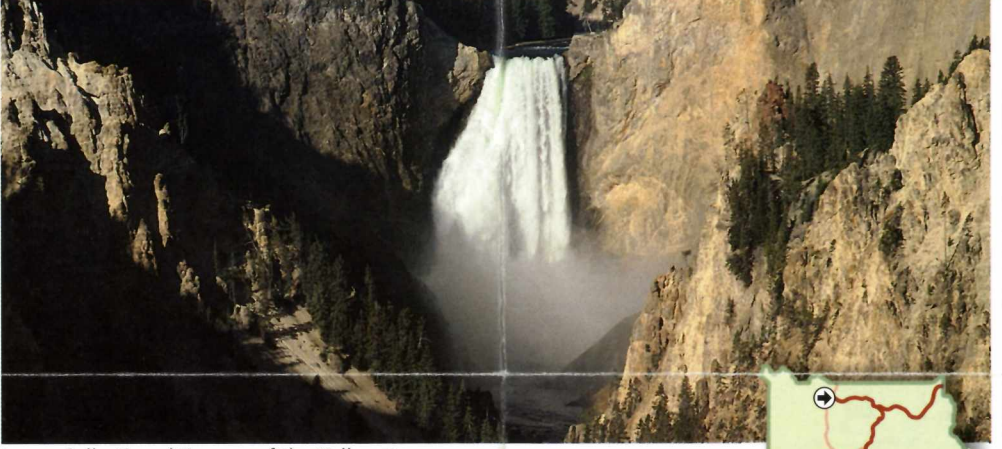
raphers and artists. At Biscuit Basin, look for mineral deposits that look like biscuits. They are slowly regrowing after being destroyed by changes triggered by an earthquake. At Midway Geyser Basin, walk the boardwalk past the enormous Excelsior Geyser Crater and the park's largest hot spring, Grand Prismatic. Firehole Lake Drive (one-way, northbound) loops off the main road to Great Fountain Geyser, Firehole Lake, and a variety of hot pools. Lower Geyser Basin features Fountain Paint Pot, where you can take a short walk past all four types of the park's hydrothermal features. On Firehole Canyon Drive (one-way, southbound), you pass between lava flows and by Firehole Falls.

Roadside forests are mainly lodgepole pine. Along the West Entrance Road (west from Madison), you can see thousands of young trees that naturally regenerated after the fires of 1988. West Yellowstone, Mont., lies 14 miles west of Madison. From Madison to Norris you drive along the Yellowstone caldera's northwest rim and past Gibbon Falls.

Norris to Mammoth Hot Springs Norris Geyser Basin is among the park's hottest, most acidic hydrothermal areas. Visit Steamboat Geyser, the world's tallest active geyser; to see its smaller eruptions. (Full eruptions are rare.) Descend into Porcelain Basin, the park's hottest exposed area. Exhibits at the historic Norris Geyser Basin Museum explain how geysers work. The Museum of the National Park Ranger (0.8 mile north of Norris) explores this historic profession.

At Norris you can turn east toward the Canyon area (*see next tour*). Continuing north from Norris you pass Obsidian Cliff, a national historic landmark. Obsidian, a volcanic glass used for projectile points and cutting tools, was quarried here and traded across North America by Native Americans. (Collecting obsidian or other rocks is prohibited.) Upper Terrace Drive, two miles before the main part of Mammoth Hot Springs, takes you to overlooks of spectacular terraces composed of travertine (calcium carbonate). Gnarled limber pines on some dormant formations are over 500 years old. Continue to explore the terraces from the boardwalks.

Exhibits at the Albright Visitor Center portray the park's wildlife and history, including the period when the U.S. Army protected the park from 1886 to 1916. Park headquarters is in the buildings of historic Fort Yellowstone. The Roosevelt Arch and Gardiner, Mont., are at the North Entrance, five miles north.



Lower Falls, Grand Canyon of the Yellowstone
© HENRIK KASER / PEXEL STOCK

To Tower-Roosevelt and Canyon Village

The road east from Mammoth Hot Springs leads you four miles to Undine Falls, then 0.2 mile to Lava Creek (picnic area). Three miles farther east look for waterfowl and muskrats at Blacktail Pond. Blacktail Plateau Drive, a one-way unpaved road eastbound, leaves the main road to traverse the grass and sagebrush-covered hills and forests of Douglas fir, Engelmann spruce, and lodgepole pine. Watch for pronghorns, mule deer, and elk. In autumn the groves of quaking aspen trees turn gold. Another side road leads to a petrified redwood tree. Such trees, some upright, are found over hundreds of square miles in northern Yellowstone.

Tower-Roosevelt to Northeast Entrance Lamar Valley, accessible all year, is winter range for elk and bison. This is a good area to look for predators (wolves, bears, foxes, and coyotes) and their prey. The Northeast Entrance, 29 miles from Tower-Roosevelt, leads to Silver Gate (one mile) and Cooke City (four miles), Mont., and the Beartooth Highway (U.S. 212), which climbs to over 10,900 feet of elevation at Beartooth Pass.

Tower-Roosevelt to Canyon Village Tower Fall, tumbling 132 feet, was named for the adjacent volcanic pinnacles. Tower Creek flows into the Yellowstone River. South of Tower Fall, you drive through the prime grizzly bear country of the Antelope Creek valley. To provide bears refuge this area is closed to human travel. **DO NOT TRY TO FEED OR APPROACH BEARS.**

The main road next crosses Dunraven Pass (8,859 feet elevation) amidst broad-topped whitebark pines and spire-shaped subalpine fir. Meadows display wildflowers in the brief summer. From Washburn Hot Springs Overlook south of the pass you can see the Yellowstone caldera. Its north boundary is near Mount Washburn; the south boundary is the Red Mountains south of Yellowstone Lake. On clear days you can see the Teton Range beyond the Red Mountains.

Canyon Village Begin your visit at Canyon Visitor Education Center, for its exhibits on Yellowstone's supervolcano, then explore the side roads that begin south of the Canyon junction and take you to spectacular views of the Grand Canyon of the Yellowstone River and its waterfalls. Hot water acting on volcanic rock created the canyon's colors and weakened the rock, which the Yellowstone River is eroding. North Rim Drive, 1.2 miles south of the junction, leads to overlooks of Lower Falls (308 feet) and walkways along the canyon's rim. Lookout Point has a vista of Lower Falls. Grand View gives spectacular views of the



Yellowstone has been a travelers' mecca since the late 1800s. The world's first national park proved a popular success. These visitors hiked into the Grand Canyon of the Yellowstone, where Uncle Tom Richardson served a picnic lunch.

Hayden Valley The road south to Fishing Bridge travels through this scenic valley famous for wildlife watching. Soil here permits little tree growth, and the shrub-and-grassland valley plants are used by grazing animals—from rodents to large ungulates like elk, moose, and bison—which in turn attract associated species, from carcass beetles and butterflies to bears, coyotes, and wolves. Look for waterfowl, including white pelicans, along the river and creeks.

South of the valley, stop at Mud Volcano to see its array of mudpots, fumaroles, and hot springs. Three miles north of Fishing Bridge, at LeHardys Rapids you have a chance to see spawning cutthroat trout jumping the falls in June and July.

VIEW LARGE ANIMALS ONLY AT A DISTANCE, FROM YOUR CAR OR FROM ROADSIDES. Do not stop in roadways; use roadside parking areas for your safety. No fishing is allowed for a six-mile section in Hayden Valley, to provide quiet for animals and scenic views of untrammeled wilderness for you.



Yellowstone Lake
© HENRIK KASER / PEXEL STOCK

The Lake Area

East Entrance to Fishing Bridge Entering the park through the East Entrance (53 miles west of Cody, Wyo.), you soon cross Sylvan Pass (8,530 feet). Watch for pikas and yellow-bellied marmots (*see illustration above*) in the rocky debris of talus slopes. You are descending the west slope of the Absaroka Range, eroded volcanic mountains named for the Crow tribe.

Near Yellowstone Lake a side road leads to Lake Butte Overlook to view this huge body of water. Yellowstone Lake sits in only the southeast quarter of the Yellowstone Caldera (*see top text and map on reverse side*). At the overlook you are just outside its east boundary. North of the lake Sour Creek Dome rises and subsides, which suggests the volcano is not dormant and might someday erupt again. Stop at Steamboat Point to view Steamboat Springs, a hot spring remnant on a line of faults that also passes through Mary Bay and Indian Pond. Bay and pond both occupy hydrothermal explosion craters. Bottom sediments in Mary Bay are still very warm. Underwater exploration of the lake has found hydrothermal vents, tall spires of silica and diatoms, and steep-walled depressions that may be hydrothermal explosion craters. Approaching Fishing Bridge, watch for herons, eagles, ospreys, ducks and other birds along the Pelican Creek flats.

Exhibits at Fishing Bridge Museum and Visitor Center feature birds and a relief map of the lake bottom. Fishing Bridge spans the Yellowstone River, the lake's outlet. Closed to fishing in 1973, the bridge offers one of the best wild trout spawning shows anywhere for most of the summer. White pelicans feed on native cutthroat trout. An RV park (hard-sided vehicles only) is at Fishing Bridge.

Yellowstone Lake is North America's largest high-altitude lake. It has 141 miles of shoreline and is 20 miles long by 14 miles wide. Its deepest spot is about 410 feet. Its average depth is 140 feet. Native trout generally live in the upper 60 feet—their foods rarely occur below that depth. Average August surface temperature is 60°F. Bottom temperature never rises above 42°F. Water that cold can cause potentially fatal hypothermia or hyperventilation within mere minutes.

Boating is permitted on Yellowstone Lake and some smaller lakes. You must have a boating permit for all watercraft, including float tubes. Rangers at Bridge Bay or Grant Village provide advice on boating—including canoeing and kayaking. A marina is at Bridge Bay, and a boat ramp is at Grant Village.

Native Fish



Eleven native fish species include two subspecies of cutthroat trout (*top*), named for the red on the lower jaws, and mountain whitefish (*bottom*).

South of Bridge Bay, you may walk or bicycle a side road to Natural Bridge. Gull Point Drive loops off the Grand Loop Road for close views of the lake's edge.

West Thumb and Grant Village Visit West Thumb Geyser Basin, where geysers line the shore. Thermal features also occur under the bay; their heat can melt ice in mid-winter. The bay results from a small volcanic eruption about 174,000 years ago. Should the water level fall just a few feet, an immense steam (hydrothermal) explosion could occur here. That is what created the craters now filled by Mary Bay and Indian Pond (*described above*). Exhibits at Grant Village Visitor Center, two miles south of West Thumb, highlight the role of fire in Yellowstone. Fishing, boating, and backcountry use permits are available at the visitor center; you can get details there, or visit the park website www.nps.gov/yell.

Check the park website www.nps.gov/yell or newspaper for seasonal dates of services and facilities.

Accessibility
Entrance stations and visitor centers offer a free guide, *Accessibility in Yellowstone*, describing wheelchair-negotiable facilities.

Emergencies: Call 911

 Medical clinic

 Parking area (see detail map at right)

 Ranger station

 Campground

 Lodging

 Food service

 Picnic area

 Store

 Gas station (some have auto repair)

 Recycling

 Self-guiding trail or boardwalk

 Horseback riding

 Boat launch

