



Alpine
A brief growing season and persistent wind and cold create desert-like conditions.

Forests
Tree roots tap water and nutrients, creating habitat for many other plants and animals.

Sagebrush Flats
What looks uniform and empty is a surprisingly diverse and complex dry habitat.

Wet Meadows
Good soils and moisture produce dense vegetation attracting a variety of wildlife.

Lakes, Ponds
Water that flows from the mountains pools on the valley floor, supporting wildlife.

Teton Range from Snake River Overlook
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Geologic Forces Still Shape This Youthful Landscape

With no foothills to obstruct your view, the jagged peaks and deep canyons of the Teton Range rise abruptly from the Jackson Hole valley. Striking, magnificent views provoke wonder. This landscape was born out of an ancient past and shaped by recent geologic forces. The 2.7 billion-year-old rocks found in the core of the range are some of the oldest in North America, but these mountains rank among the youngest in the world.

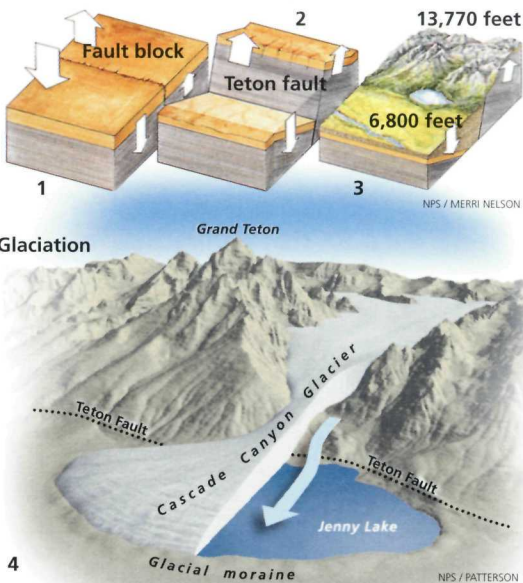
Beginning 100 million years ago, long before today's mountains formed, the collision of tectonic plates along North America's west coast bowed-up a vast block of sedimentary rock deposited by ancient seas. Beginning 10 million years ago, movement on the Teton fault generated massive earthquakes causing the mountains to rise

while the valley floor dropped (*see diagram at right*). The vertical displacement—from the sedimentary rocks overlaying the mountaintops to the same layers beneath the valley floor—approaches 30,000 feet.

While movement on the Teton fault lifted the range, erosion sculpted the landscape. Starting two million years ago, massive glaciers up to 3,500 feet thick periodically flowed south from Yellowstone and filled the valley—eroding mountains, transporting and depositing huge volumes of rocky glacial debris. As ice sheets filled the valley, alpine glaciers sculpted the jagged Teton skyline. These glaciers carved the peaks and canyons and deposited moraines along the glacier's edge.

Today these moraines dam beautiful lakes, like Jenny Lake, along the base of the Teton Range. The general color scheme of vegetation in the 310,000-acre park hints at this geologic story (*see the boxes above, keyed to color bands below*).

Using geology and vegetation as clues, you can determine key wildlife habitat. Geology, plants, and animals interact dynamically over a large region, or ecosystem. The mission of the National Park Service is to safeguard natural and cultural resources for the enjoyment of this and future generations. Please help care for this beautiful place.



Two blocks of Earth's crust moved like trap doors—one skyward to make mountains, one downward to make the valley (1, 2). Wind, rain, ice, and glaciers erode the rising range (3).

Huge ice age glaciers and torrential meltwaters carried cobbles, gravel, and coarse sand south. Repeatedly they re-leveled the valley's sinking floor.

Alpine glaciers (4) deposited moraines that impounded lakes along the range. More recent glaciers have receded 15 to 25 percent in the past 40 years.

Natural Communities Color the Park's Scenery

Alpine



High-elevation canyons hold lingering snow, patches of plants in crevices, and fragile meadows that will transition to bare rock higher up.

Pika

Alpine communities are harsh habitats often the color of bare rock. Elevation, hard winters, and brief summers challenge life above treeline. Lichens cling to rocks while phlox and moss campion resist the wind and cold by growing low on scant soils. Flowers emit scents that lure insects to pollinate them. The insects attract white-crowned sparrows, which eat the insects. In summer, tiny pikas (*left*) dry and store plants for winter. Pikas and yellow-bellied marmots watch for predators like weasels and raptors. Most alpine residents winter at lower elevations or hibernate.



Forests



Lodgepole pine, the most common tree in the park, has cones that need heat to open and release seeds. Lodgepole trunks served Native Americans as tipi poles.



Bald eagles fish from lodgepole pines beside lakes or rivers. Only mature eagles have white head feathers.

Darker greens of Teton landscapes are forests that grow where moraines and mountainsides hold water within reach of tree roots.

Forests of lodgepole pine and other conifers—Douglas-fir, Englemann spruce, limber pine, and subalpine fir—occur in lower elevations of the Teton Range. In summer, elk and mule deer seek their shade. Black and grizzly bears frequent this area searching for berries, insects, and small mammals. Red squirrels live in the trees, gathering and storing cones in caches for winter. Long-tailed weasels and pine martens prey on the squirrels, snowshoe hares, deer mice, and other small mammals. Colorful western tan-

agers fly through less dense parts of the forest canopy.

Above 8,500 feet, whitebark pine, spruce, and fir dominate forests. Whitebark pine—a keystone species sensitive to global climate change, insects, and disease—is an important food source for red squirrels and grizzly bears. These pines also retain moisture on high windswept slopes, benefiting the entire high-altitude forest community. On the edges of these forests ruffed grouse nest on the ground and feed on buds and insects. Great horned owls hunt the forest's voles, mice, and gophers.



Red-tailed hawk

Sagebrush Flats

Sagebrush flats color the landscape a silvery gray-green. This plant community, covering most of the valley floor, looks barren and sparse but is quite lush. Rocky, well-drained soils discourage most plants, but hardy big sage, low sage, antelope bitterbrush, and over 20 species of grasses thrive. Sage grouse use sagebrush for shelter, food, and nesting areas. Arrowleaf balsamroot and lupine add spring color. Small mammals like Uinta ground squirrels, white-footed deer mice, and least chipmunks live here



The sagebrush community surrounds the Chapel of the Transfiguration in the Menors Ferry Historic District at Moose. Cottonwood and aspen

trees in the background show where water is close enough to the surface for these trees' roots to reach.



Pronghorn

and attract raptors. Badgers dig burrows, and coyotes and wolves lope across cobbled plains. Pronghorns live here in summer but migrate southeast to the upper Green River Basin—to avoid deep winter snow. Evenings and mornings, elk herds feed on grasses in spring, summer, and fall. Where bitterbrush abounds, moose forage, especially in winter and early spring. Birds can find sage thrashers, green-tailed towhees, western meadowlarks, and vesper and

Brewer's sparrows. Bison roam the steppes between the Snake River and the forests. For Native Americans, the valley was productive for hunting and gathering, but severe winters meant they did not live here year-round. Permanent residents came eventually, starting in the mid-1880s as farmers and ranchers. Improved shelter, irrigation, and more hardy seed varieties enabled a meager living. Now people value the valley's scenery, human history, and quality of life.



Trapper Richard "Beaver Dick" Leigh, wife Sue Tadpole, and children. Leigh Lake and other features in the park are named for his family. The fur trade declined about 1840.



An irrigation ditch on Mormon Row, east of Moose (*see map*). Five Mormon families settled here from Utah in 1889. With them came

interest in community services (schools, mail service, and churches). Until then, people had known this as a rough bachelor valley.



Sagebrush

Wet Meadows and Wetlands

Green hues that fall between silvery sage and dark forest may indicate wet meadows, willow flats, or wetlands. Wet meadows and willow flats are flooded by water part of the year. A high water table and pockets of good soil make possible abundant grasses, sedges, and forbs. Many birds and small mammals eat these plants. In the West, the narrow bands of vegetation along waterways may account for over 90 percent of an entire region's biological diversity. Wetlands around rivers, lakes, and marshes share many characteristics of the neighboring aquatic community.



Moose most commonly feed on willows. They dive up to 18 feet deep, and stay underwater up to a minute to feed on aquatic plants.

Lakes and ponds dot the landscape with shades of blue. Streams and rivers are reflected as ribbons of blue and silver. Snake River tributaries drain the mountains around Jackson Hole. Stream banks, floodplains, lakes, and ponds are rich habitats teeming with life. Snake River float trips are an excellent way to see the park's variety of wildlife. Native cutthroat trout, mountain whitefish, and other fish are crucial food for otters, bald eagles, and osprey. At Oxbow Bend you may see American white pelicans, great blue herons, and trumpeter swans.



Cutthroat trout



River otters hunt in water for fish, frogs, and snakes. Otters are far more agile in water than on land. Until the 1700s they lived by most major rivers in North America.

Enjoy a Safe Visit and Be Bear Aware

The park's clean air and waters, and its natural sounds, enhance your visit and the quality of habitat for native species—1,200 plants, 300 birds, over 60 mammals, and 12 fish. The park and parkway let you enjoy nature's sights and sounds safely. Stay on trails to protect native vegetation. Dispose of waste properly in bear-resistant trash containers; recycle or reuse food and drink containers. Observe wildlife quietly from a safe distance: 100 yards from bears and wolves, 25 yards from all other animals. The park newspaper lists schedules of ranger-led activities like talks, walks, hikes, demonstrations, and other programs

conducted early June through September. Campfire programs cover a range of topics at Colter Bay, Signal Mountain, Jenny Lake, and Gros Ventre amphitheaters. The newspaper lists visitor center hours and concession services, like restaurants, lodging, stores, gas stations, and mountaineering and float trip services.

Be Bear Aware! All odorous items must be stored properly at all times to protect people and bears. Ask at a visitor center or check the park newspaper to learn about proper food storage in bear country.



View all wildlife from a safe distance and respect their need for space. People too close to wildlife risk serious

harm when animals defend themselves or their young. The park newspaper has more safety information.



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Exploring Grand Teton

Camping Camping is permitted in five campgrounds, first-come, first-served. Trailers, RVs, and tents are allowed in all campgrounds except Jenny Lake, which is tents only. Only dead and down wood may be collected as firewood. Please see the park newspaper for group camping information.

Backcountry camping is permitted only in designated areas; permits are required, and reservation requests are accepted from January 5 through May 15. A service fee is charged for advance reservations.

Water Safety and Protection Floating the Snake River in the park is allowed only in hand-propelled boats and rafts; inner tubes are prohibited. Only experienced floaters should launch on the river. Motorboats are allowed on Jackson and Jenny lakes; Jenny Lake has a 10-hp limit. Hand-propelled craft are allowed on most lakes. Sailing, windsurfing, and water skiing are allowed on Jackson Lake only. All craft require permits and yearly registration at park visitor centers.

Swimming in park waters is generally a cold experience. The shallow areas of Jackson, Leigh, String, and

Jenny lakes have reasonable temperatures in July and August. There are no lifeguards. Swimming in the Snake River is not advised.

Stream and lake water should be boiled or treated to kill or remove harmful organisms like *Giardia* and *Campylobacter* that may cause severe gastrointestinal distress.

Fishing is allowed in most park streams and lakes. Wyoming fishing licenses are required and are sold at Dornans, Signal Mountain Lodge, and Colter Bay Marina. Visitor centers have information on park fishing regulations. Aquatic

nuisance species are a concern. Clean and dry boats, boots, and waders before you enter a new body of water—and never empty containers of bait, fish, plants, or animals into park waters.

Vehicles Drive only on established roadways and observe posted speed limits. Pass bicyclists with caution. Dawn and dusk are excellent times to see wildlife; watch other drivers for sudden stops. Park in turnouts or completely off the road to observe or photograph wildlife and scenery. Be alert for animals along or crossing roadways.

Wildlife Feeding any wildlife is prohibited. Animals in the park are part of complex, protected natural systems. Let animals find natural foods. Never handle smaller animals like ground squirrels. They can carry disease. Larger animals are unpredictable and can cause serious injuries. Approaching too closely is prohibited: Minimum distances are 100 yards from bears and wolves and 25 yards from all other wildlife. Regulations prohibit destruction, injury, disturbance, or removal of cultural or natural features, including all plants, animals, rocks, and arrowheads or other historic artifacts.

Pets Pets must be leashed (maximum length six feet) at all times. Pets are not allowed in public buildings, on trails, in the backcountry, on most ranger-led activities, or in visitor centers. They are prohibited in boats on rivers and on lakes other than Jackson Lake. Never leave pets unattended, especially in a closed vehicle. Pet regulations are strictly enforced. Service animals like guide dogs are welcome; contact the park.

Climbing Mountain climbing is a technical sport requiring proper knowledge, experience, physical condition, and equipment. Over-

night trips require a backcountry permit. Jenny Lake Ranger Station offers climbing information from June through early September. Solo climbing is not advised.

For firearms regulations see our website or ask at a visitor center.

Accessibility We strive to make our facilities, services, and programs accessible to all. For information contact a visitor center or a ranger or visit www.nps.gov/grte.

More Information
Grand Teton National Park
PO Drawer 170
Moose, WY 83012-0170
307-739-3300
TTY 307-739-3400

For trip planning information please call 307-739-3600 or visit www.nps.gov/grte.

Grand Teton is one of over 390 parks in the National Park System. To learn more about national parks and National Park Service programs in America's communities, please visit www.nps.gov.

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