



Teewinot

The official newspaper of Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway
Winter 2003/2004

Welcome to Grand Teton National Park

Few landscapes in the world are as striking and memorable as that of Grand Teton National Park. The Teton Range, the central feature and focus of the park, draws the eyes for miles, captivating park visitors and local residents alike. For generations, the Tetons have touched all who have witnessed their beauty.

Rising abruptly from the valley floor, the Tetons offer a testament to the power and complexity of nature. The mountains, valleys, lakes, rivers, and skies are home to diverse and abundant plants and animals. People have been living in the shadow of the Teton Range for almost 11,000 years. The human history of this area is extensive, beginning with American Indian prehistoric life, to the early Euro-American explorers, and the more recent frontier settlement that left more than 300 historic structures.

This spectacular mountain range and the desire to protect it resulted in the establishment of Grand Teton National Park in 1929. Over time, through the vision and generous philanthropy of John D. Rockefeller, Jr., additional lands were added, creating the present-day park. This area continues to be protected through the combined efforts of the National Park Service, the local community, and the Greater Yellowstone Ecosystem partners. Grand Teton National Park is a dynamic example of people from all walks of life working together to protect a mountain park and its surrounding landscape of natural and human communities.

Grand Teton National Park is truly a special and unique place. With thoughtful use and careful management, it can remain so for generations to come. As with other sites in the National Park System, Grand Teton preserves a piece of the natural and cultural heritage of America for the benefit and enjoyment of future generations.

While you are here, take a moment to put your cares aside and lose yourself to the power of this place. We hope you will be refreshed and restored during your visit, and stay connected to this magnificent landscape long after you have returned home.



Mount Moran



Bison



Snowshoe Hike



Elk

Caring for the American Legacy

Grand Teton National Park is one of 388 park sites administered by the National Park Service (NPS). The NPS preserves the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The NPS also cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

On August 25, 1916, President Woodrow Wilson signed the act creating the National Park Service, a new federal bureau in the Department of the Interior responsible for protecting the 40 national parks and monuments then in existence, as well as those yet to be established.

The Organic Act of August 25, 1916, states that: *"The Service thus established shall promote and regulate the use of Federal areas known as national parks, monuments and reservations – by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."*

The National Park Service strives to meet those original goals, while filling many other roles as well: guardian of diverse cultural and recreational resources; environmental advocate; world leader in the parks and preservation community; and pioneer in the drive to protect America's open space.

Please join us in protecting Grand Teton National Park by following park regulations and watching out for your own safety and the safety of others. Enjoy your visit.

International Visitors

Des renseignements en Français sont disponibles aux centres des visiteurs dans le parc.

Sie können Informationen auf Deutsch in den Besucherzentren bekommen.

Se puede conseguir información en Español en el Centro del Visitante.

Phone Numbers

Grand Teton National Park's websitewww.nps.gov/grte/

Phone Numbers	
EMERGENCY	911
Park Dispatch	739-3300
Visitor Information	739-3600
Weather	739-3611
Continental Divide Snowmobile Trail	739-3614
Backcountry & River Information	739-3602
Climbing Information	739-3604
Campground Information	739-3603
TDD (Telecommunication Device for the Deaf only)	739-3400 and 739-3544

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DATES OF OPERATION SUBJECT TO CHANGE.

Visitor Centers

Moose Visitor Center
(307) 739-3399
Open year-round, except December 25. Features exhibits, an introductory video, and an extensive bookstore. Located 12 miles north of Jackson.

Jenny Lake Visitor Center
Open June through September. Features geology exhibits and book sales. Located 8 miles north of the Moose Visitor Center on the Teton Park Road.

Colter Bay Visitor Center and Indian Arts Museum
(307) 739-3594
Open May–September. Features a museum, an auditorium, and an extensive bookstore. Located 42 miles north of Jackson.

Flagg Ranch Information Station
Open summer and mid-winter. Features book sales and information about John D. Rockefeller, Jr. Memorial Parkway and the Greater Yellowstone area. Located 16 miles north of Colter Bay Junction.

Winter Activities

Climbing Guides
Exum Mountain Guides (307) 733-2297
Jackson Hole Mtn. Guides (307) 733-4979

Cross Country Ski Tours
Snowshoe and cross-country ski tours. Inquire at visitor centers.

Interpretive Programs
Check at visitor centers for current information.

Winter Lodging
Triangle X and Dornans' Spur Ranch provide winter lodging in the park.

Winter Camping
Colter Bay Campground is closed in winter; however, limited winter camping is available near the visitor center for \$5.00 per night.

Visitor Services

AAC/Climber's Ranch
(307) 733-7271
June–September
www.americanalpineclub.org

Barker-Ewing Float Trips
(307) 733-1800
Mid-May–late September
www.barkerewingscenic.com

Colter Bay Cabins
(307) 543-2811
May 28–September 26
www.gtlc.com

Colter Bay Store and Marina
(307) 543-2811
May 28–September 28
www.gtlc.com

Colter Bay RV Park
(307) 543-2811
May 28–September 26
www.gtlc.com

Colter Bay Tent Cabins
(307) 543-2811
June 4–September 6
www.gtlc.com

Dornans
(307) 733-2522
Open year-round
www.dornans.com

Exum Mountain Guides
(307) 733-2297
Open year-round
www.exumguides.com

Flagg Ranch Resort
(307) 543-2861
(800) 443-2311
Late May–October
www.flaggranch.com

Grand Teton Lodge Co.
(307) 543-2811
(800) 628-9988
www.gtlc.com



Mule Deer

Teton Weather

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Avg. Max. Temp. (F)	25.7	31.1	39.0	49.0	60.9	70.6	79.8	78.8	68.9	55.9	38.0	26.0	52.0
Avg. Min. Temp. (F)	1.2	3.6	11.9	22.1	30.9	37.2	41.2	39.6	32.2	23.2	13.7	1.5	21.5
Avg. Total Pre. (in.)	2.61	2.00	1.60	1.45	1.96	1.80	1.22	1.37	1.44	1.24	2.14	2.47	21.3
Avg. Total Snow (in.)	44.4	30.0	20.6	9.3	2.8	0.1	0	0	0.5	4.4	25.2	39.2	176.5
Avg. Snow Depth (in.)	28.0	34.0	32.0	13.0	0	0	0	0	0	0	4.0	16.0	11.0

Heart Six Ranch Float Trips
(307) 543-2477
May–September
www.heartsix.com

Jack Dennis Fishing Trips
(307) 733-3270
May–September
www.jackdennis.com

Jackson Hole Mountain Guides
(307) 733-4979
open year-round
www.jhmg.com

Jackson Hole Trail Rides
(307) 733-6992 / May–September

Jackson Lake Lodge
(307) 543-2811
May 21–October 6
www.gtlc.com

Jenny Lake Lodge
(307) 733-4647
May 28–October 10
www.gtlc.com

Leeks Marina
(307) 543-2494
Marina: May 22–September 12
Pizzeria: May 27–September 25

Moose Village Store
(307) 733-3471
May 28–September 12
www.gtlc.com

National Park Float Trips
(307) 733-5500
May–September
www.trianglex.com

OARS
(800) 346-6277
mid-June–mid-September
www.oars.com

Signal Mountain Lodge
(307) 543-2831
May 8–October 17
www.signalmtnlodge.com

Snake River Angler
(307) 733-3699
May–September
www.snakeriverangler.com

Solitude Float Trips
(307) 733-2871
May–September
www.solitudefloattrips.com

Jenny Lake Boating
(307) 734-9227
June–September

Triangle X Ranch
(307) 733-2183
Dec. 26–March 31
May 22–November 1
www.trianglex.com

Triangle X-Osprey Float Trips
(307) 733-5500
May–September
www.trianglex.com

2004 Winter Activities Update

SNOWMOBILING

Snowmobiling is permitted within the park on the Continental Divide Snowmobile Trail (CDST) and the Grassy Lake Road, when conditions permit. The CDST follows US Highway 89/287 from the eastern park boundary, through Moran to the north park boundary, and continues beyond Flagg Ranch to the south entrance of Yellowstone (see the map on page 8). Use of biodegradable motor oil and improved snowmobile technology such as four-stroke engines is encouraged to reduce environmental impacts. Check at entrance stations, the Moose Visitor Center (year-round), or the Flagg Ranch Information Station (mid-December to mid-March) for



regulations and safety information before operating a snowmobile on the CDST. Call (307) 739-3614 for CDST conditions within the park. Call (800) 225-5996 for information on snowmobile trails throughout Wyoming. For information about snowmobiling and snowmobiling reservations in Yellowstone National Park, visit www.TravelYellowstone.com or call (307) 344-7311. You can also visit www.nps.gov/yell, the park's official website, for detailed information.

SKIING AND SNOWSHOEING

From November 1 to May 1, the Teton Park Road is open for non-motorized use only. You can ski or snowshoe on this road from the Taggart Lake Trailhead all the way to Signal Mountain. The road is regularly groomed to provide a packed surface for snowshoeing, skate skiing and cross-country touring. Other places to enjoy cross-country skiing and snowshoeing include Colter Bay, Antelope Flats Road, Taggart Lake and Flagg Ranch. If you plan to ski the Moose-Wilson Road, be sure to park at the Granite Canyon Trailhead, no parking is available on the north side.

SNOWSHOERS – PLEASE REMEMBER TO WALK NEXT TO SKI TRAILS, NOT ON THEM.

Rangers provide guided snowshoe walks from the Moose Visitor Center when snow conditions permit, usually late December to mid-March. Call the Moose Visitor Center at (307) 739-3399 to make



reservations. Snowshoes are provided during this free activity.

PROTECT WILDLIFE

While enjoying winter activities you can expect to see bison, moose, elk, coyotes, bald eagles, and other wildlife. Please be aware that although they have adapted to cold, the rigors of winter still pose enormous challenges. Certain areas of the park are closed during winter in order to provide critical winter range and relieve stress on the animals.

- Winter closures remain in effect on the Snake River floodplain, the Buffalo Fork River floodplain, the Uhl Hill area, Willow Flats, Kelly Hill, and Static Peak.
- Closures for the protection of bighorn sheep include Prospectors Mountain and Mount Hunt including peaks 10988, 10905, and 10495; all areas above 9900 feet (3000m) and south-facing slopes on Mount Hunt above 8580 feet (2600m); Banana Couloir is open. See the map on page 8 for more detailed information or stop at the visitor center and talk to a ranger.

Regulations

SAFETY

- Protect yourself. Know your equipment and your capabilities and limitations.
- Never ski, snowshoe, or snowmobile alone. Let someone who remains behind know your planned destination, route, and expected time of return.
- Hypothermia is a major cause of human fatality in mountain country. When the temperature drops within the core of the body, the brain fails to function properly. Carry extra dry clothing and put them on in time to prevent hypothermia. Never leave a member of your party alone. If someone you are with begins to act or talk abnormally, make him or her put on more clothing, drink warm liquids, etc. Study first aid for hypothermia before your trip.
- Be prepared for sudden changes in the weather. Snow and weather conditions vary considerably from day to day. Check conditions before you venture out.
- Be alert for avalanche hazards, especially in mountain canyons. Check with park rangers about current and forecasted avalanche hazard conditions.



FIREARMS

All firearms, including state-permitted concealed weapons, are prohibited in the park and parkway – except when actively pursuing game during legal hunting seasons. Unloaded firearms may be transported in a vehicle when the weapon is cased, broken down, or rendered inoperable.

FISHING

Fishing conforms to National Park Service and Wyoming regulations. A Wyoming fishing license is required for fishing in the park and parkway. Jackson Lake is open to fishing year-round – except during the spawn from October 1 – November 1. Jenny, Leigh, Phelps, and Two Ocean lakes are open year-round. The Snake River is open November 1 – March 31 for catch and release only trout fishing; from April 1 – October 31, trout creel limits apply. From December 15 – April 1, the Snake River floodplain is closed to all entry (including fishing) from Moran to Menors Ferry near Moose. Obtain fishing regulations at the Moose Visitor Center. Be careful when wearing waders in or near swift water.

PETS

Restrain pets on a leash at all times. Keep pets within 50 feet of roadways; pets are not allowed on trails or in the backcountry, in boats on the Snake River, in boats on lakes other than Jackson Lake, or in visitor centers. During the winter, pets are not allowed off plowed roadways or parking areas – except the unplowed portions of the Teton Park and Moose-Wilson roads. Leashed dogs may travel in all areas open to snowmobiles.

FLOATING THE SNAKE RIVER

Only hand-propelled rafts, canoes, dories, and kayaks are allowed on the Snake River within the park and parkway. Register non-motorized vessels (fee charged) at the



Moose Visitor Center permits desk each year. Read the launch site bulletin boards for current river conditions. On the surface, the Snake does not seem very powerful, but only experienced floaters should attempt this swift, cold river. The Snake River from Moran Junction to Menors Ferry is closed to floating from December 15 – March 31.

BOATING

A boat permit is required. For motorized craft, the fee is \$10 for a 7-day permit and \$20 for an annual permit; for non-motorized craft, the fee is \$5 for a 7-day permit and \$10 for an annual permit. Obtain permits and boat regulations at the Moose Visitor Center.

CLIMBING AND BACKPACKING

Obtain the required backcountry permit for overnight trips at the Moose Visitor Center. Climbing registration is voluntary. Weather and avalanche hazard forecasts are available. Only experienced mountaineers with ice axes and other essential equipment should travel on steep snow slopes.

WILDLIFE

Keep a respectful distance from all animals to avoid disturbing their natural routines.

Large animals are quick, powerful, and unpredictable. Getting too close can result in serious injury. Take special care to avoid encounters with bears and to help maintain their natural fear of humans.

Stay out of closed areas to protect wintering wildlife (see winter map for closures). Do not approach wildlife to obtain photographs. Animals use roads as travel corridors. Do not chase animals with your vehicle; stop your vehicle and wait until they leave the roadway.

Park regulations prohibit wildlife feeding and harassment. Many small animals can carry diseases and should never be touched or handled. Their natural diet assures their health and survival.

ELK REDUCTION PROGRAM

Management of elk within Grand Teton National Park involves a reduction program through a strictly regulated hunt from October 25 to December 7, 2003. Legal hunting for a variety of species occurs in the Rockefeller Parkway from September through the end of December. For your safety, check at the Moose Visitor Center for specific locations open to hunting.

Questions and Answers about Snowmobiling in Grand Teton National Park and John D. Memorial Parkway

Please Note: This information is current as of publication in November 2003.

Please check for updates at the Moose Visitor Center or on the park's website at <http://www.nps.gov/grte> before operating a snowmobile in the park or parkway.

Must I operate a certain model of snowmobile?

Snowmobiles not operating under a concessions contract do not have to meet Best Available Technology (BAT) requirements this winter. BAT requirements will be in place for all snowmobiles beginning in 2004/2005.

Where can snowmobiles be operated in the park and parkway?

Snowmobiles may be operated in the following areas:

- The Continental Divide Snowmobile Trail (CDST) along US 26/287 from the east park boundary to Moran Junction and along US 89/287 from Moran Junction to Flagg Ranch.
- Grassy Lake Road from Flagg Ranch to the western boundary of the parkway.

When may I operate my snowmobile?

Depending upon weather and snow conditions, snowmobiles may be operated from December 17, 2003 through March 14, 2004. Snowmobiles may be operated only between the hours of 7:00 a.m. and 9:00 p.m.

What other conditions apply to the operation of snowmobiles?

- Snowmobiles must be operated with the safety of persons, property, and park resources in mind at all times.
- Snowmobile operators must possess a valid state motor vehicle operator's license. The license must be carried on the operator's person at all times. It is prohibited to allow an unlicensed driver to operate a snowmobile.

- Snowmobiles must be properly registered and display a valid state registration sticker from any state in the United States.
- When stopping a snowmobile, pull over to the far right and next to the snow berm. Pullouts must be utilized where available and accessible. Do not obscure the view of others or stop your snowmobile in a hazardous location.
- Snowmobiles may not be operated so slowly as to interfere with the normal flow of traffic.
- Do not idle a snowmobile for more than five minutes at any one time.
- Snowmobiles must have a lighted white headlamp and red taillight.
- All snowmobiles must have brakes in good working order.
- The towing of persons on skis, sleds, or other sliding devices by snowmobile, except in emergencies, is prohibited.
- Equipment sleds towed by a snowmobile must be pulled behind the snowmobile and fastened to the snowmobile with a rigid hitching mechanism.

What conditions apply to alcohol use while operating an oversnow vehicle?

Operating a snowmobile is prohibited when the operator is 20 years of age or younger and has a blood alcohol level of 0.02 grams or more. For snowmobile operators 21 or older, the blood alcohol limit is 0.08 grams or more.

May I operate a snowplane in the park or parkway?

The operation of a snowplane in the park or parkway is prohibited.

May I continue to access public lands via snowmobile through the park?

The following routes are designated only for access via snowmobile to public lands:

- From the parking area at Shadow Mountain directly along the unplowed portion of the road to the east park boundary.
- Along the unplowed portion of the Ditch Creek Road directly to the east park boundary.

Where to Look For Wildlife

Always Keep a Safe Distance When Viewing Wildlife



Bison in Winter

Spring and Fall

ANTELOPE FLATS

East of Moose. Look for grazing bison and pronghorn, especially where grasses have grown thick since the 1994 Row Fire removed sagebrush.

SAWMILL PONDS

Southwest of Moose on the Moose-Wilson Road. At dusk, elk emerge from forests cloaking the ridges west of Sawmill Ponds. Moose sometimes browse on shrubs at the ponds' edge. Puddle ducks feed in the ponds.

TIMBERED ISLAND

Southeast of Jenny Lake. Elk venture from the security of this forested island into the sagebrush

flats to eat grasses and other non-woody plants. Pronghorn, the fastest land mammals in North America, browse on sagebrush and eat grasses as they migrate to and from their winter range south and east of the park.

JACKSON LAKE DAM

North of Signal Mountain. Canada geese, American white pelicans, a myriad of duck species, and other water birds concentrate on either side of the dam. Occasionally peregrine falcons strafe resting ducks, while bald eagles and ospreys search for fish.

WILLOW FLATS

North of Jackson Lake Dam at Jackson Lake Junction. Abundant willows attract moose. Grassy meadows scattered among the

willow shrubs harbor elk. Beavers dam creeks, forming ponds where waterfowl gather.

OXBOW BEND

West of Moran Junction. Trumpeter swans, Canada geese, and a variety of ducks gather when open water is present. Coyotes search the nearby meadows for small rodents. Moose browse willows growing at the water's edge.

Winter

SAGEBRUSH FLATS AROUND

BLACKTAIL BUTTE

Near Moose. In winters with low snow accumulation, moose search for bitterbrush, a preferred food that grows with sagebrush in this area.

BUFFALO FORK MEADOWS

South of Moran Junction. Extensive willow meadows attract numerous moose.

GROS VENTRE ROAD

East of the park boundary. Bighorn sheep forage on windswept, south-facing slopes near Slide Lake.

CAUTION

Winter places enormous stress on wildlife. Observe animals from a distance. If you cause an animal to move, you are too close. Unnecessary movement burns precious body fat needed to survive through winter and into spring. Park regulations prohibit wildlife harassment. See page 8 for areas closed in winter to protect wildlife.

Elk Ecology and Management

Elk residing in Grand Teton and the Rockefeller Parkway are part of the large Jackson Hole elk herd, which consists of approximately 14,000 elk. Management of this herd, including elk within the park and parkway, is intensive and involves a reduction program. The recommended population is 11,000 elk.

POPULATION REGULATION

Female elk are able to begin breeding when they are one and a half years old, but most start breeding at two and a half years of age. Females usually breed every year and have one calf per year until they die, although about 40% of juveniles do not survive their first year. Life expectancy for female elk averages twelve years, but some may live into their twenties. Elk have a high reproduction potential — a ten-year old female may account for five additional living descendants, which is a five-fold increase in the population.

Winter mortality, disease, and predation contribute to elk population reduction, as does hunting. Available natural winter range is limited due to human development. The National Elk Refuge, the wintering ground for many elk that summer in Grand Teton National Park, the Bridger Teton National Forest and southern Yellowstone National Park, is designed to support up to 7,500 elk. In recent years,



Bull Elk Bugling

about 12,000 elk have wintered on and near the refuge; about 90% of the Jackson Hole elk herd winters on the refuge and on three nearby state-operated feed grounds. Some elk winter singly or in small groups scattered throughout Jackson Hole.

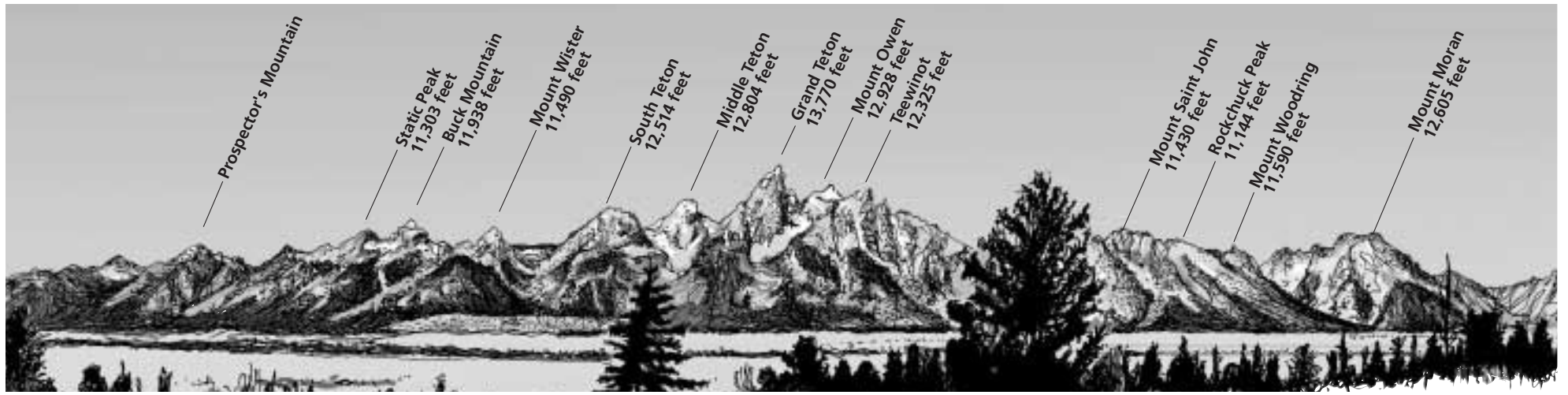
ELK MANAGEMENT

The Wyoming Game and Fish Department and the National Park Service jointly manage the elk population within Grand Teton National Park. When the park was

enlarged in 1950, Congress included a provision for managing elk numbers through a special annual elk management program. According to this law, selected hunters are deputized as park rangers. Hunting occurs in Grand Teton National Park from mid-October through early December. Between Moose and Moran, all legal hunt areas are east of the Snake River. North of Moran Junction, legal hunting occurs east of Highway 89/287. The Rockefeller Parkway is administered by Grand Teton, but hunting regulations are in accord with Wyoming State Law. The Rockefeller Parkway is open for legal hunting of elk and other game species from approximately September 1 through December 31.

VISITOR SAFETY

While visitors may hike in those parts of Grand Teton National Park and the Rockefeller Parkway that are open to legal hunting, it is not recommended. Most of the park's hiking trails are located in areas not open to hunting. Check at the Moose Visitor Center (open daily 8 a.m. to 5 p.m.) for recommended hiking trails, for specific areas that are open to hunting, and for more information on elk ecology and management.



Reading the Landscape

The Teton Range dominates the skyline of Grand Teton National Park, attracting the attention of all who pass through Jackson Hole. The geologic events that created the dramatic scenery of Jackson Hole indirectly account for the distribution and abundance of wildlife and plants found here. Herbivores – plant-eating animals like moose, mule deer, and elk – inhabit areas where their food sources exist. Carnivores – meat-eating animals such as bears, coyotes, and weasels – follow the herbivores they prey upon.

The Tetons owe their existence to movement along a fault located on the eastern front of the range. Starting about 13 million years ago, movement along this fault, caused by massive earthquakes, occurred every several thousand years or so. The mountain block uplifted along the west side of the fault, while the valley

block dropped down on the east side of the fault. Today, the mountains rise more than a mile above Jackson Hole, with a total displacement of 30,000 feet.

As recently as 12-14,000 years ago, small mountain glaciers flowed from high elevation cirques and gouged out U-shaped canyons. Mountain glaciers spilled from the canyons to the valley floor, forming basins now filled by Leigh, Jenny, Bradley, Taggart, and Phelps lakes. Ridges of glacial debris, called moraines, surround these lakes and mark the edge of the glaciers' flow.

While small glaciers flowed within the Teton Range, an ice field covered much of what is now Yellowstone National Park. Beginning 50,000-25,000 years ago, lobes from this ice field flowed south, gouging out the depression that Jackson Lake fills today, and carrying debris as far as Snake River Overlook

(eight miles north of Moose on Highway 26-89-191). Today, moraines support forests of lodgepole pine and other conifers. Elk and black bears seek refuge and shade in morainal forests and graze in nearby meadows during cooler parts of the day.

The southern part of Jackson Hole contains dry, poorly developed, rocky soils. As the climate warmed, glacial ice melted and broke through the moraines, flowing south through the valley and carrying away soil. Sagebrush, grasses, and wildflowers adapted to thrive in this sagebrush community. Some mammals and birds favor the sagebrush flats, bison graze on grasses there, and pronghorn eat sagebrush itself. Sage grouse, large chicken-like birds, eat sagebrush leaves.

For the past 10,000 years or so, the Snake

River has cut through glacial moraines to flow through the southern end of Jackson Hole. Old river terraces paralleling today's Snake River indicate that it once carried much more water. Cottonwood and spruce trees, home to bald eagles, grow along the Snake River. Beavers occasionally dam side channels of the Snake River, establishing ponds that Canada geese and ducks use for nesting and feeding. Moose and beavers eat willows that flourish in wetlands along the river. Willows and other wetland plants provide cover and nest sites for a multitude of songbirds.

As you explore Grand Teton National Park, read its landscape. Note the work of glaciers on the mountains and canyons, and the old river terraces carved by the Snake River. Watch for the wildlife that provides clues to the ancient processes that formed and shaped this area.

Surviving Winter

Like humans, wild animals have three main methods for adjusting to winter – they can leave by migrating, they can avoid it by hibernating, or they can live with it by confronting and adjusting to severe weather conditions.

Migration is a tactic that many animals use. More than 150 species of birds nest in the park and parkway. Most of these birds leave northwestern Wyoming before winter sets in and return in spring. American white pelicans spend winters on either coast of Mexico. Immature bald eagles head west to coastal Oregon and northern California. Many songbirds, from swallows to warblers fly to western Mexico for the winter. And hummingbirds fly to the tip of South America.

Spending the winter in the tropics conjures up images of lazing on a balmy beach. For birds, however, winter is no vacation. Birds of all sizes fuel their long distance flights by burning fat. They must store up body fat prior to migration and eat enough during travel to replenish this fat as it is burned. Travel to and from nesting areas is fraught with perils, including storms, predators, obstacles like radio towers and finding food in unfamiliar landscapes. Human alteration or destruction of habitats within migration corridors and wintering sites compounds the risks. Birds tend to be more concentrated in wintering areas, adding competition for food and living space to the problems faced by migratory birds.

Hibernation is a strategy employed by animals including bears, bats, Uinta and golden-mantled ground squirrels, chipmunks

and yellow-bellied marmots. In the fall bears put on fat by gorging on whitebark pine nuts. While bears are denning, their temperatures drop from 101°F to 86°F and their bodies slow down to reduce energy use. Even so, bears will burn 15-40% of their body fat over the winter. Bears may wake up but will not eat, urinate or defecate. Female bears give birth during hibernation.



Bears are light hibernators. However, true hibernators include bats and ground squirrels. Bats increase their body weight by 25-30% by eating insects before hibernation. During hibernation, bats lower their body temperature from 104°F to 35°F and their heart rate slows from 350 beats per minute to 24 beats per minute. Uinta ground squirrels engage in a hibernation marathon – adults hibernate as long as seven months!

Animals that confront winter have a wide variety

of behavioral, morphological, and physiological adaptations. Storing food is a common behavioral adaptation: Beavers stash twigs underwater where they will be available all winter. Red squirrels store large amounts of cones and seeds in middens and place mushrooms in tree branches to dry. Pikas, the “haymakers of the mountains,” dry grasses all summer for consumption under winter’s blanket of snow.

Morphological adaptations are related to the way an animal is built. Moose are equipped with very long legs that allow them to walk in deep snow. Their musculature allows them to lift their legs straight up out of the snow before taking another step to avoid dragging their feet through deep snow, saving them energy. Moose hairs are hollow and offer good insulation. Small mammals cannot grow the thick, heavy fur of the moose; instead, many take advantage of the insulating value of the snow itself. Once the snow cover is

about eight inches deep, the temperature at ground level becomes an almost constant 32 degrees regardless of how cold it gets aboveground. Voles remain active all winter by living under the snow where their food is still available and they can build warm nests of grass. Unfortunately for voles, weasels successfully hunt them in their own tunnels, even using the nests as sleeping quarters and lining the nest with the fur of the previous occupants.

Physiological adaptations are those that are tied to the way an animal works. Adding fat and gaining weight for hibernation is a physiological adaptation. Moose have unsaturated fats in their bodies, fats that remain supple in very cold temperatures. Without these fats, their hooves would become brittle and crack. Some insects produce glycerol, a form of sugar that resists freezing. On cold nights, chickadees enter a controlled hypothermia; lowering their body temperatures allows chickadees to save fat that would have been burned to maintain their normal high body temperature. Wolves, coyotes, and waterfowl have a built-in feature that allows them to walk through snow and stand on ice without losing too much body heat. The arteries carrying warm blood from the center of their body out to their limbs run next to the veins carrying cooled blood from their limbs back to the heart. Heat is exchanged as the warm blood becomes cooler and the cool blood becomes warmer. This “counter-current cooling system” results in the temperature of a limb being much cooler than the body and saves significant energy.

Entrance Fees 2004

Costs for achieving National Park Service goals in Grand Teton and other national parks have skyrocketed in recent years, while funding has not matched those ascending needs. All Americans support our national parks through tax dollars. Congress allocates some of those dollars to each park area.

Unfortunately, the dollars available through the appropriation process are only sufficient to conduct the yearly operation of the park. Money is not available for roads, trails, facilities, and infrastructure needs. In 1997, Congress authorized the Fee Demonstration Program, which allowed selected national parks, including Grand Teton and Yellowstone national parks, and other federal sites to increase entrance and other fees. The parks were authorized to keep 80% of the fees collected in the park

to address the backlog of these needs as part of this experimental program. In 2004, money generated because of increased entrance fees will be used for:

- Rehabilitation of wastewater treatment facilities, a trailer dump station, comfort stations, and sites at Gros Ventre Campground.
- Rehabilitation and improvements to wastewater treatment facilities in Colter Bay, Beaver Creek, and Flagg Ranch.
- Resurfacing roads in the north district of the park, including roads between Colter Bay and the south entrance of Yellowstone, and the Pacific Creek road.
- Replacement panels for interpretive exhibits.

The National Park Service appreciates your support of ongoing efforts to improve protection of natural and cultural features.

Fee Schedule for Grand Teton National Park

Winter Entrance Fees \$5 per vehicle for 1-day pass to Grand Teton National Park only \$10 per hiker, skier or biker for 7-day pass to both Grand Teton and Yellowstone national parks
Individuals Planning to Snowmobile (Good for both Grand Teton and Yellowstone national parks) \$15 per snowmobile for a one-day pass / \$20 per snowmobile for a seven-day pass
Individuals Planning to Ride a Snowcoach into Yellowstone \$10 per person for a one-day pass / \$15 per person for a seven-day pass For detailed information about snowmobiling reservations and fees in Yellowstone National Park visit www.TravelYellowstone.com or call (307) 344-7311.
Golden Eagle Passport \$65 Allows entrance to most national park areas and some other federal fee areas for 12 months from purchase; non-transferable.
National Parks Pass \$50 Allows entrance to most national park areas for 12 months from purchase; non-transferable.
Parks Specific Pass \$40 Allows entrance to Grand Teton and Yellowstone national parks for 12 months from purchase; non-transferable.
Golden Age Passport \$10 (one-time fee) Allows lifetime entrance to all National Park System areas to American citizens 62 years old or older; non-transferable.
Golden Access Passport - Free Allows lifetime entrance to all National Park System areas to American citizens who can provide proof of permanent disability; non-transferable.

Park Partners



GRAND TETON NATURAL HISTORY ASSOCIATION
PO Box 170
Moose, WY 83012
(307) 739-3403
www.grandtetonpark.org



GRAND TETON NATIONAL PARK FOUNDATION
PO Box 249
Moose, WY 83012
(307) 732-0629
www.gtnpf.org



TETON SCIENCE SCHOOL
Box 68T
Kelly, WY 83011
(307) 733-4765
www.tetonscience.org



THE MURIE CENTER
PO Box 399
Moose, WY 83012
(307) 739-2246
www.muriecenter.org

Grand Teton Natural History Association was established in 1937 as the park's primary partner to increase public understanding, appreciation, and enjoyment of Grand Teton National Park and the Greater Yellowstone area. Since that time, the Association has been aiding the interpretive, educational, and research programs of Grand Teton National Park.

The Association has grown to operate interpretive and educational bookstores in five visitor centers in Grand Teton National Park and the John D. Rockefeller, Jr. Memorial Parkway, as well as several outlets in Bridger-Teton National Forest, Caribou-Targhee National Forest, and National Elk Refuge information facilities. When you make a purchase at an Association bookstore, profits are returned to the park in the form of donations to support park programs. Your purchase also supports the publication of this newspaper, books, and the free educational handouts available at visitor centers and entrance stations.

Be sure to check out the on-line bookstore at www.grandtetonpark.org for all your trip-planning needs.

The Grand Teton National Park Foundation was established in 1997 as the only private, nonprofit organization dedicated exclusively to raising money for projects that protect, preserve, and enhance Grand Teton National Park. The foundation receives no government support and relies solely on the generous contributions of private individuals, foundations, and corporations. Philanthropy in the cause of national parks is not new. The John D. Rockefeller, Jr. Memorial Parkway reminds us that we have the Rockefeller family to thank for a generous 32,000-acre land donation that led to today's Grand Teton National Park.

A major fundraising effort is underway to build the new Grand Teton Discovery and Visitor Center at Moose that will replace the woefully small visitor center in use since 1961. Schematic design for the new facility has been completed, and planning for construction is underway. The Grand Teton Discovery and Visitor Center will offer unparalleled opportunities for information, orientation, and education about Grand Teton National Park and the Greater Yellowstone Ecosystem.

If you would like to become a member of the Grand Teton National Park Foundation, or join us in the fundraising effort for the new visitor center, please fill out the coupon below and return it with your donation.

The Teton Science School, founded in 1967, provides and encourages experiential education in natural sciences and ecology while fostering an appreciation for conservation ethics and practices. The secluded campus, operated in cooperation with Grand Teton National Park, is located on a historic dude ranch in the park. The Greater Yellowstone region serves as the school's outdoor classroom and model for year-round programs that offer academic, professional, and personal benefits to students of all ages.

Summer programs include two- to five-week residential field ecology and field natural history courses for high school and junior high students, and weeklong, nonresidential programs for third through eighth grades. A one-year, masters-level graduate program in environmental education and natural science is also available. This summer the Teton Science School is offering 37 field seminars for adults and seven seminars for families. Workshops and seminars for teachers and other professionals are also offered.

The Murie Center is a nonprofit organization located on the historic Murie Ranch, home of famed conservationist Mardy Murie. The Murie Center's mission is to develop new constituencies for wilderness, emphasizing the importance of human connections with nature. The center is funded entirely through the generosity of individuals and the commitment of foundations. Please call if you are interested in visiting the center or attending a seminar.



UNIVERSITY OF WYOMING NATIONAL PARK SERVICE RESEARCH CENTER
PO Box 3166 • Laramie, WY 82071-3166
www.uwyo.edu

The AMK Research Station is a field operation of the University of Wyoming based at the historic AMK Ranch in Grand Teton National Park. The research station facilitates research in the diverse aquatic and terrestrial environments of Grand Teton and Yellowstone national parks and the Bridger-Teton and Caribou-Targhee national forests.

We invite you to become an annual member-at-large entitled to a 15% discount on purchases at all GTNHA



visitor center outlets, as well as on catalog and website orders. Many cooperating association stores nationwide offer reciprocal discounts. I would like to become a:

- \$25 Individual Annual Member with discount privileges
- \$50 Associate Annual Member with discount privileges and commemorative Grand Teton canvas bookbag

Name _____
Address _____
City _____
State _____ Zip Code _____ Phone _____
Date of Application _____ Paid By Cash Check
 Credit Card _____ Exp.: _____

Grand Teton National History Association • PO Box 170 • Moose, WY 83012
(307) 739-3403 • www.grandtetonpark.org

Yes! I would like to be a part of the future of Grand Teton National Park.



Name _____
Address _____
City, State, Zip _____
Phone _____ Email _____
Please include your check made out to the Grand Teton National Park Foundation, or supply the following credit card information.
Credit Card Type Visa Mastercard
Card Number _____ Exp.: _____
Cardholder's Signature _____

Grand Teton National Park Foundation • PO Box 249 • Moose, WY 83012
(307) 732-0629 • www.gtnpf.org

Contact Information

Emergency911
 Visitor Information.....(307) 344-7381
 Visitor Information TDD only....(307) 344-2386

Xanterra Parks & Resorts..... (307) 344-7311
 Website.....www.nps.gov/yell

Winter Services

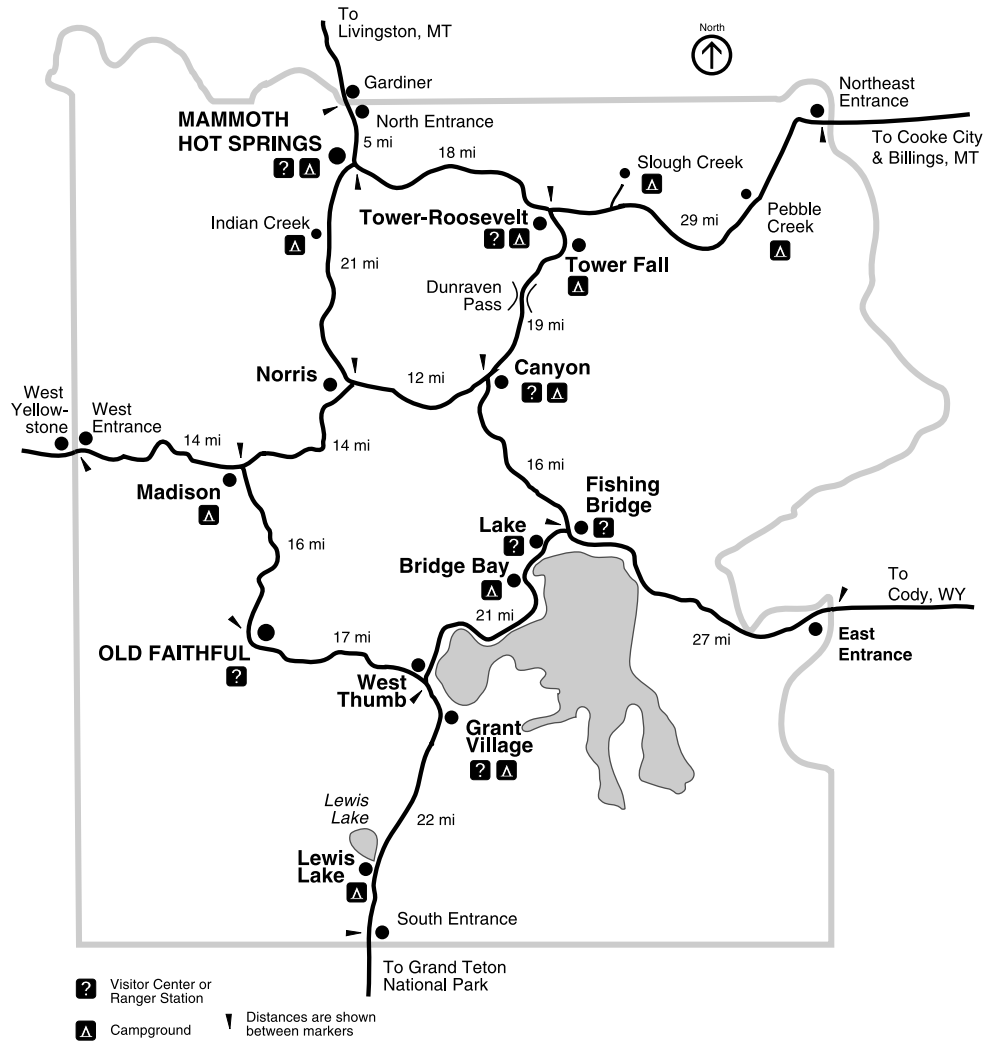
Dates subject to change.

Information, publications, exhibits, movies, videos, and interpretive programs are available year-round at the Albright Visitor Center in Mammoth Hot Springs (307) 344-2263 and December 17 – March 14 at the Old Faithful Visitor Center (307) 545-2750. Information and snowmobile entrance reservations are available at the West

Yellowstone Chamber of Commerce, Public Lands Desk, December 17–March 14. Park concessioners offer lodging and other services including evening programs, snowcoach tours, guided ski and snowshoe tours, guided snowmobile tours, and wildlife bus tours. Detailed information is available at visitor centers, warming huts, and hotels or call Xanterra Parks and Resorts at (307) 344-7311.

Mammoth Hotel and other services
 December 20 – March 7
 Old Faithful Snow Lodge and other services
 December 17 – March 14

Warming huts at Old Faithful, Madison Junction, Fishing Bridge, Canyon, and West Thumb are open December 17 – March 14; warming huts at Mammoth and Indian Creek are open December 17 – March 7. Snowmobile fuel is available at Old Faithful, Canyon, Mammoth Hot Springs, and Fishing Bridge mid-December to mid-March. The NPS campground at Mammoth Hot Springs is open year-round, offers 85 sites, and is first-come, first-served.



Spring Services

Dates subject to change. Call Xanterra Parks & Resorts at (307) 344-7311 for details.

FOOD SERVICE, STORES, AND GASOLINE
 Yellowstone General Stores (groceries, souvenirs, light meals) and Yellowstone Park Service Stations generally open the same time or earlier as lodging in each area.

Slough Creek.....open by late May
 Tower Fall.....open by late May
 Indian Creek.....open in June
 Pebble Creek.....open in June
 Grant Village.....open in June
 Lewis Lake.....open in June

2003 OPENING DATES
 All dates are tentative, no dates are confirmed as of printing.

LODGING
 Old Faithful Inn.....May 5
 Old Faithful Snow Lodge.....May 14
 Old Faithful Lodge.....mid-May
 Grant Village.....late May
 Lake Yellowstone Hotel.....May 21
 Lake Lodge.....early June
 Canyon Lodge.....late May
 Roosevelt Lodge.....early June
 Mammoth Hot Springs.....May 14

CAMPGROUNDS
 Mammoth.....open year-round
 Madison.....open in early May
 Bridge Bay.....open by late May
 Canyon.....open by late May
 Fishing Bridge.....open by late May
 Norris.....open by late May

Yellowstone Roads

WINTER TRAVEL
 Weather permitting, Yellowstone will open for oversnow vehicle travel in mid-December and close in sections beginning in March. The only park road that remains open to wheeled vehicles all winter is the road from Gardiner, Montana at the north entrance to Cooke City, Montana near the northeast entrance. Snow tires and/or chains may be required. Travel east of Cooke City, Montana is not possible during the winter season.

weather conditions. Snow tires or chains may be required. Weather and snow conditions permitting, tentative road opening dates for automobiles are:

- April 16 Mammoth to Old Faithful; Madison Junction to West Entrance
- April 23 Norris Junction to Canyon
- May 7 Canyon to Lake, Lake to East Entrance
- May 14 Lake to South Entrance, West Thumb to Old Faithful, Tower to Tower Fall
- May 28 Beartooth Highway

Closed for construction: Dunraven Pass, Chittenden Road south to Canyon.

TENTATIVE SPRING 2004 OPENING SCHEDULE
 Spring weather is unpredictable; roads may be closed temporarily by snow or other



Grizzly Bear

Fattening Up For Hibernation

Black and grizzly bears live throughout the park and may be active at any time of the day or night.

During fall, black and grizzly bears engage in a feeding frenzy as they fatten up in preparation for hibernation. Bears may remain active until December. These guidelines are for your protection and for the preservation of bears, one of the true symbols of wild country.

bears when hiking. If you encounter a bear, do not run. Running often elicits attacks from otherwise non-aggressive bears and they can travel over 35 miles per hour. If the bear is unaware of you, detour quickly and quietly away. If the bear is aware of you but has not acted aggressively, back away slowly, talking in an even tone while waving your arms.

A Fed Bear is a Dead Bear

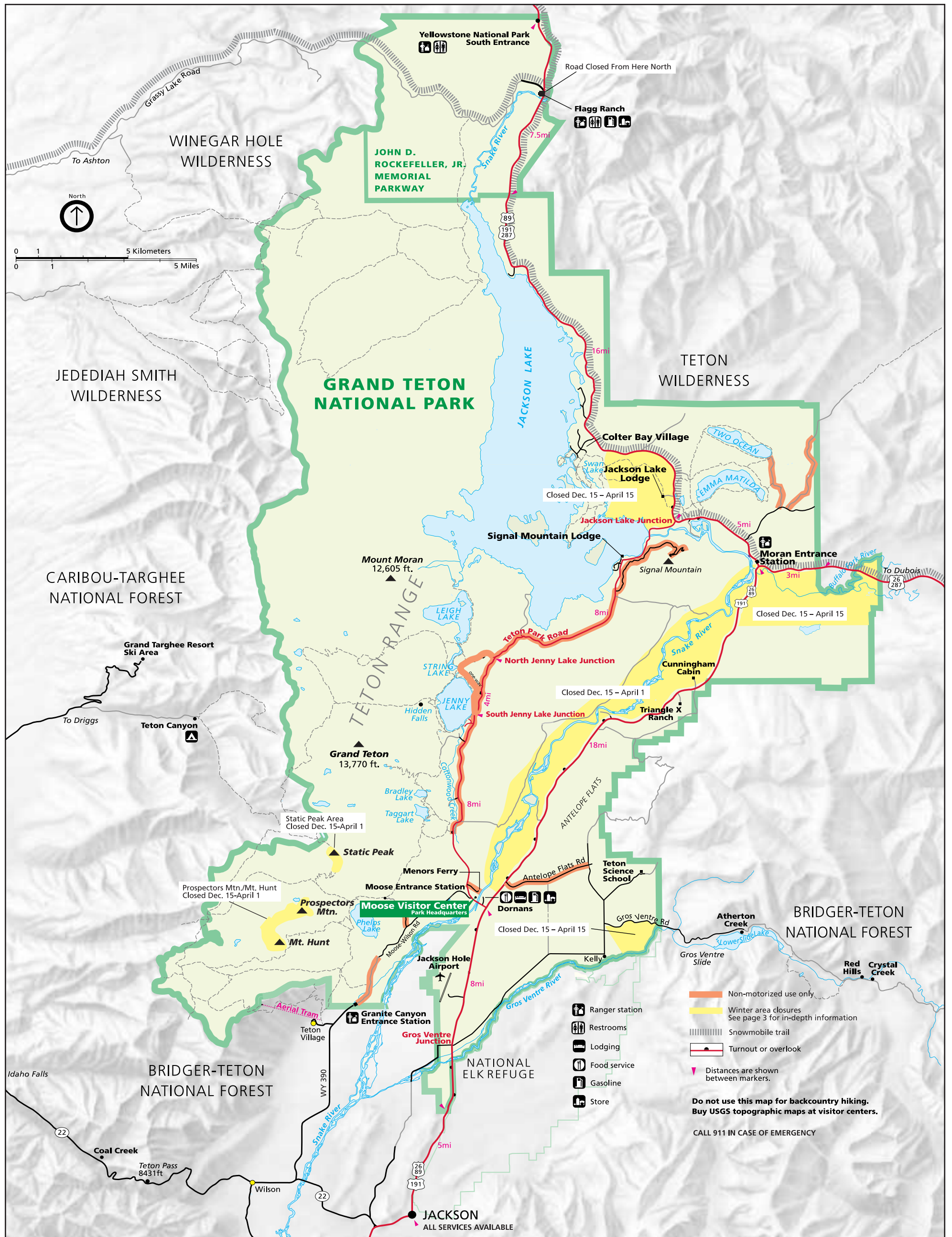
Careless food storage or feeding spells death for bears. Allowing a bear to obtain human food, even once, often results in aggressive behavior. The bear then presents a threat to human safety and must be removed or destroyed. Do not allow bears or other wildlife to obtain human food.

Aggressive Bears

If a bear approaches or charges you, do not run. It will increase the chance of attack. Do not drop your pack; it may protect your body if attacked. Bears often bluff charge, stopping before contact. Bear experts generally recommend standing still until the bear stops, then backing away slowly. Climbing trees is no protection from black bears and may not help with grizzlies either.

Avoid Encounters

Make bears aware of your presence and avoid surprising them by making noise like talking or singing. Be alert and look for



Information Services

The Moose Visitor Center is open daily (except December 25) from 8:00 a.m. to 5:00 p.m. Services include information, cross-country ski trail maps, publication sales, audio-visual programs, natural history exhibits and permits for backpacking, boating and mountaineering. Ranger-led

snowshoe hikes (snowshoes provided, reservations required) are offered from late December to mid-March. Call (307) 739-3399 to make reservations. Check at the visitor center for other ranger-led activities.

The Flagg Ranch information station is open daily from mid-December to mid-March. Hours are 8:00 a.m. to 5:00 p.m. Services include information, cross-country ski trail maps and publication sales.