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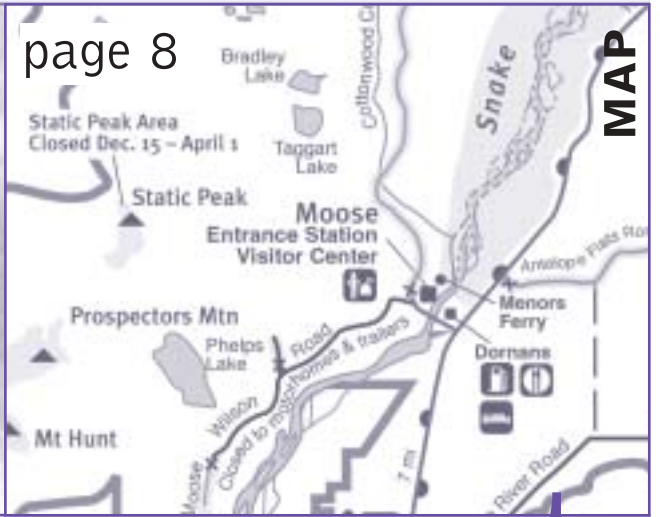
VISITOR SERVICES

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MAP

# teewinot

GRAND TETON NATIONAL PARK & JOHN D. ROCKEFELLER, JR. MEMORIAL PARKWAY NEWS

winter 2002/2003

## Seasons Transform the Teton Range

Welcome to Grand Teton National Park and John D. Rockefeller, Jr. Memorial Parkway. As fall turns to winter and then to spring, the Greater Yellowstone Ecosystem experiences dramatic change. Each season offers a range of activities, fascinating natural phenomena, and spectacular scenery.

### Fall

Visitor activities during fall include photography, wildlife watching, and hiking. Favorite locations for viewing or photographing fall colors and new snow on the mountains include Snake River Overlook, Oxbow Bend, and the Jenny Lake area. Snowstorms may temporarily hamper travel until the storms pass. You can enjoy scenic views and vibrant fall

visitors each winter. The north end of the Rockefeller Parkway serves as staging for oversnow trips into Yellowstone National Park via snowmobiles and snowcoaches. Photography and wildlife watching are also popular winter activities. Turnouts along Highway 89 offer chances to view and photograph the snow-clad Tetons. Stop by the National Elk Refuge for a sleigh ride among the elk.

Take care to avoid causing animals to flee while observing or photographing them.

colors while hiking the Taggart Lake, Phelps Lake, Granite Canyon, and Paintbrush Canyon trails. Witness the spectacle of elk during the rut (breeding season) along the Teton Park Road between Signal Mountain and Moose, and in the Colter Bay area. Oxbow Bend and Willow Flats offer glimpses of moose.

### Winter

As winter descends, short days and cold temperatures ensure that snow blankets the mountains and valley. The park becomes a popular destination for visitors who enjoy winter recreation in the mountains. Cross-country skiing, snowshoeing, snowmobiling, and ice fishing attract a growing number of

visitors each winter. The north end of the Rockefeller Parkway serves as staging for oversnow trips into Yellowstone National Park via snowmobiles and snowcoaches. Photography and wildlife watching are also popular winter activities. Turnouts along Highway 89 offer chances to view and photograph the snow-clad Tetons. Stop by the National Elk Refuge for a sleigh ride among the elk.

### Spring

Winter lingers in the valley through March and early April and grips the mountains until June. Longer days allow for extended spring skiing and snowshoeing trips. Throughout April, the Teton Park Road is closed to motorized vehicles but open to pedestrians, bicyclists, and rollerbladers.

continued, see SEASONS on page 7



FOR ASSISTANCE PLANNING YOUR ACTIVITIES be sure to stop by the Moose Visitor Center or the Flagg Ranch Information Station. Rangers are glad to help you plan a safe and enjoyable visit. Whether you visit in fall, winter, or spring you are sure to find a wide variety of challenging and fulfilling activities to enjoy against the backdrop of inspiring scenery. This place, like no other, has scenery for all seasons.

### Phone Numbers

**EMERGENCY 911 or 739-3300** Park Dispatch  
Visitor information (307) 739-3600 • Weather 739-3611  
TDD (Telecommunication Device for the Deaf only) 739-3400

### 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 informacion en español en el Centro del Visitante.

# VISITOR INFORMATION

## Visitor Centers

### Moose Visitor Center (307) 739-3399

Open year-round, except December 25. Features exhibits, an introductory video, and an extensive book store. 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 & Indian Arts Museum

(307) 739-3594

Open summer only. Features a museum, an auditorium, and a large book store. Located 42 miles north of Jackson.

### Flagg Ranch Information Station

Open summer and mid-winter. Features book sales and information about John D. Rockefeller 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

Jackson Hole Mountain Resort (307) 739-2710  
Rendezvous Ski Tours (307) 353-2900  
Spring Creek Ranch (307) 733-1004

### Interpretive Programs

Check at visitor centers for current information.

## Winter Lodging

Flagg Ranch, Triangle X, and Dornan's provide winter lodging in the park.

## Winter Campgrounds

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

# Teton Weather

## Winter

Snow blankets the mountains and valley. During blizzards, travel is not advised and roads may be closed. Between storms, days are sunny and nights are frigid.

## Spring

From late April to early June, mild days and cold nights alternate with rain and occasional snow. Snow begins melting in the valley in April; valley trails are snow-covered until late May.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr
<b>Temperature</b>							
Average High °F	57	39	28	25	31	38	48
Average Low °F	24	15	3	2	5	11	22
<b>Precipitation</b>							
Average Snowfall (inches)	5"	25"	40"	49"	33"	24"	11"
Average Clear Days	15	13	13	13	11	12	11

Call 307-739-3611 for current weather info.

# VISITOR SERVICES INDEX

<b>AAC/Climber's Ranch</b> June–September www.americanalpineclub.org	307-733-7271	<b>Jackson Hole Mountain Guides</b> open year-round www.jhmg.com	307-733-4979
<b>Barker-Ewing Float Trips</b> mid-May–late September www.barkerewingscenic.com	307-733-1800	<b>Jackson Hole Trail Rides</b> May–September	307-733-6992
<b>Colter Bay Cabins</b> May 23–September 28 www.gtlic.com	307-543-2811	<b>Jackson Lake Lodge</b> May 18–October 5 www.gtlic.com	307-543-2811
<b>Colter Bay Store &amp; Marina</b> May 3–October 15 www.gtlic.com	307-543-2811	<b>Jenny Lake Lodge</b> May 31–October 5 www.gtlic.com	307-733-4647
<b>Colter Bay RV Park</b> May 23–September 28 www.gtlic.com	307-543-2811	<b>Jenny Lake Boating</b> June–September	307-734-9227
<b>Colter Bay Tent Cabins</b> June 6–September 1 www.gtlic.com	307-543-2811	<b>Leeks Marina</b> Marina: May 17–September 14 Pizzeria: May 29–September 1	307-543-2494
<b>Dornans</b> Open year-round www.dornans.com	307-733-2522	<b>Moose Village Store</b> May 23–September 14 www.gtlic.com	307-733-3471
<b>Exum Mountain Guides</b> Open year-round www.exumguides.com	307-733-2297	<b>National Park Float Trips</b> May–September www.trianglex.com	307-733-6445
<b>Flagg Ranch Resort</b> late May–Oct. & mid-Dec.–mid-March www.flaggranch.com	307-543-2861/800-443-2311	<b>OARS</b> mid-June–mid-September www.oars.com	800-346-6277
<b>Fort Jackson Float Trips</b> May–September ftjackson@silverstar.com	307-733-2583	<b>Signal Mountain Lodge</b> May 10–October 19 www.signalmtnlodge.com	307-543-2831
<b>Grand Teton Lodge Company</b> www.gtlic.com	307-543-2811 800-628-9988	<b>Solitude Float Trips</b> May–September www.solitudefloattrips.com	307-733-2871
<b>Heart Six Ranch Float Trips</b> May–September www.heartsix.com	307-543-2477	<b>Triangle X Ranch</b> Dec. 26–March 31 & May 21–mid-November www.trianglex.com	307-733-2183
<b>Jack Dennis Fishing Trips</b> May–September www.jackdennis.com	307-733-3270	<b>Triangle X-Osprey Float Trips</b> May–September www.trianglex.com	307-733-5500

All dates subject to change.

# IMPORTANT INFORMATION

## 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 layers of 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

Anglers may test their skills by trying to catch whitefish and cutthroat, lake and brown trout in lakes and rivers of the park and parkway. Fishing conforms with 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 Oct. 1 to Nov. 1. Jenny, Leigh, Phelps and Two Ocean Lakes are open year-round. The Snake River is open Apr. 1 through Oct. 31. 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. Pets must be kept 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 dogs pulling dogsleds. 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 within the park 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 & 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.

To protect wildlife during winter, stay out of closed areas. Do not approach wildlife to obtain photographs. Wildlife uses roads as travel corridors. Do not chase animals with your vehicle; stop your vehicle and wait until animals leave the road.

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 19 to December 8, 2002. 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.

# READING THE LANDSCAPE

The Teton Range dominates Grand Teton National Park, attracting the attention of all who pass through Jackson Hole. The natural processes that resulted in mountain building and sculpting have also determined where plants grow in the park. Herbivores, plant-eating animals like moose, mule deer and elk, inhabit areas where their food sources exist.



Carnivores, meat-eating animals like bears, coyotes and weasels, follow the herbivores they prey upon. Geologic events created the dramatic scenery of Jackson Hole and indirectly account for the distribution and abundance of wildlife and plants found here.

The Tetons owe their existence to movement along a fault found where the mountains meet the valley. Starting about 13 million years ago, movement with massive earthquakes occurred about every thousand years or so along the fault. The mountain block uplifted on the west side of the fault while the valley block dropped down east of the fault. Today the mountains rise more than a mile above Jackson Hole, with total displacement of 30,000 feet along the fault.

Ice performed the sculpting and carving of the Tetons. As recently as 12-14,000 years ago, small mountain glaciers,

or rivers of ice, flowed from high elevation cirques and gouged out U-shaped canyons between the peaks. Mountain glaciers spilled from the canyons to the valley floor, forming basins occupied today by lakes like Leigh, Jenny, Bradley, Taggart and Phelps. Ridges of glacial debris, called moraines, surround these lakes and mark the edge of the glacier's flow.

While small glaciers flowed in the Teton Range, an ice cap covered much of what is now Yellowstone National Park beginning 50-25,000 years ago. This river of ice flowed south, gouging out the depression that Jackson Lake fills today, and carried 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.

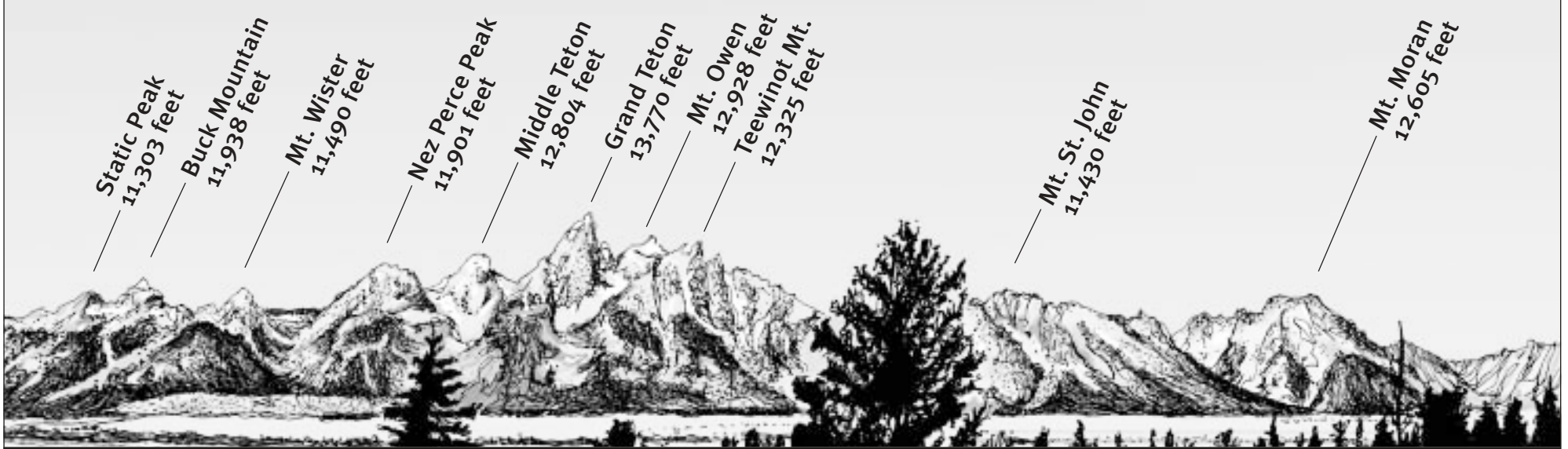
When the climate warmed and glacial ice melted, water broke through the moraines and swirled south through the valley, carrying away soil. Today the southern part of Jackson Hole contains less developed, dry, rocky soils. Only vegetation like sagebrush and hardy grasses and wildflowers can thrive in such desert-like conditions. Despite the hot and dry conditions, some mammals and birds favor the sagebrush flats. Bison graze on grasses growing among the sagebrush, while pronghorn eat sagebrush itself. Sage grouse, large chicken-like birds, eat sagebrush buds.

For the past 10,000 years or so, the Snake River has cut through glacial moraines and flowed from Jackson Lake and out the southern end of Jackson Hole. Old river terraces paralleling

today's Snake River indicate that it carried much more water in the past.

Along the Snake River grow cottonwoods and blue spruces where bald eagles nest. 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 in the past by the Snake River. Watch for wildlife. The presence of wildlife provides clues to the ancient processes that formed and shaped this area.



## 2003 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 287 from the eastern park boundary, through Moran to the north park boundary, and continues past Flagg Ranch all the way to the south entrance of Yellowstone (see the map on page 8). Use of biodegradable motor oil and improved snowmobile technology such as 4-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.

### 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 will be regularly groomed to provide a packed surface. Other places to enjoy cross-country skiing and snowshoeing include Flagg Ranch, Colter Bay, Antelope Flats, and the unplowed portion of the Moose-Wilson Road. 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.

### 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.
- New 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.

## Where to Look for Wildlife

### Wildlife in spring and fall

**ANTELOPE FLATS - KELLY AREA** (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, fastest land mammal in North America, browse on sagebrush and eat grasses as they migrate to and from their wintering ranges 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 waterbirds concentrate on either side of the dam. Occasionally peregrine falcons strafe resting ducks, while bald eagles and ospreys search for fish.



**WILLOW FLATS - JACKSON LAKE JUNCTION AREA.** Abundant willows attract moose. Grassy meadows scattered among the willow shrubs harbor elk. Beavers have dammed 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.

Spring may be the most difficult time

for animals. They have depleted body fat stored the previous summer in order to survive winter and cannot replenish this fat until plants start to grow again. Please observe animals from a distance.

### Wildlife in 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** (at the east end of the park). Bighorn sheep forage on windswept, south-facing slopes.

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 spring. **Park regulations prohibit wildlife harassment. See page 8 for areas closed in winter to protect wildlife.**

## Elk Ecology & Management

Elk residing in Grand Teton and the Rockefeller Parkway are part of the large Jackson Hole elk herd, which consists of 16-17,000 elk. Management of this herd, including elk within the park and parkway, is intensive and involves a reduction program (authorized hunt). The recommended population is 11,000 elk.

### Population Regulation

Female elk are able to begin breeding when they are 1½ years old, but most start breeding at 2½ 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, where elk that summer in the park, the Bridger-Teton National Forest and southern Yellowstone National Park spend winter, is designed to support up to 7,500 elk. About 90% of the Jackson Hole elk herd winters on the refuge and on three state-operated feed grounds. Some elk winter singly or in small groups scattered throughout Jackson Hole.

### Elk Management

The elk population within Grand Teton National Park is jointly managed by the Wyoming Game and Fish Department and the National Park Service. When today's Grand Teton National Park was established in 1950, Congress included a provision for managing elk numbers through a special annual elk management program. According to this law, hunters selected 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.

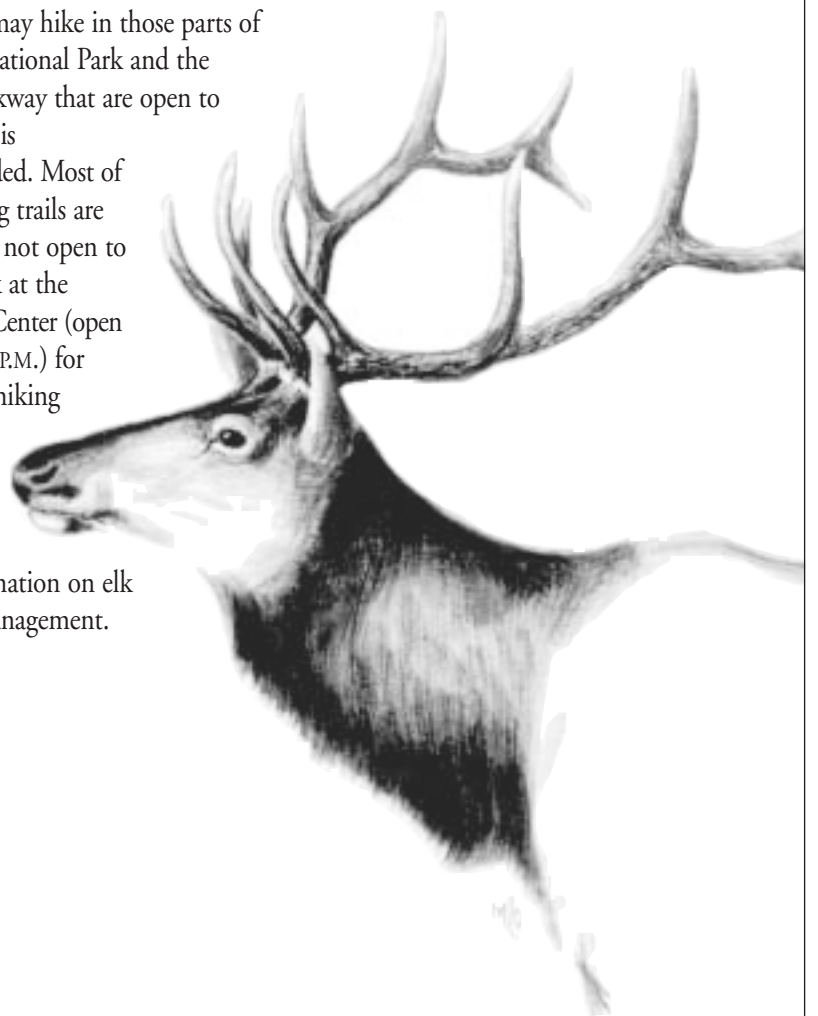
The Rockefeller Parkway is administered by Grand Teton, but hunting regulations are in accord with Wyoming State law. The Rockefeller Parkway is open for legal hunting of elk and other game species from approximately September 1 through December 31.

### give wildlife a brake®

Moose, bison, elk, mule deer, pronghorn, black and grizzly bears—a host of large animals inhabit Grand Teton National Park, the Rockefeller Parkway, Yellowstone National Park, and surrounding areas. Wildlife may be found on roads and highways at any time of the day or night. For your own safety and for the protection of wildlife, please drive carefully and stay alert.

### 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. – 5 P.M.) for recommended hiking trails, for specific areas that are open to hunting and for more information on elk ecology and management.





# Fattening Up For Hibernation

Black and grizzly bears live throughout the park and parkway and may be active 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 signs of wild country.

## 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.

## Avoid Encounters

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

for 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.

## 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.

## Surviving Winter

Summer is a comfortable time in Jackson Hole.

Wildlife raise their young and use energy for growth.

But the seasons here are very distinct. During winter wildlife directs all energy toward survival.

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

Migration is a tactic that many animals use. More than 150 kinds 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.

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, so they must store up body fat prior to migration and must eat enough to replenish this fat as it is burned. Travel to and from birds' nesting areas is fraught with perils, including storms, predators, obstacles like radio towers and finding food in unfamiliar landscapes. Human alteration or destruction of habitat in migration corridors and wintering sites compounds the risks of migration. Birds tend to be more concentrated in wintering areas, adding competition for food and living space to the problems migratory birds face.

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 consumption. Even so, bears will burn 15-40% of their body fat over the winter. Bears may wake up but won't eat, urinate or defecate. Female bears give birth during hibernation.

Bears, however, are light hibernators. 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 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, avoiding dragging, and saving them energy. Moose hairs are hollow and offer good insulation. Small animals could not support the thick, heavy fur of a 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 almost constant regardless of

continued, see *SURVIVING* on page 7



## PARK PARTNERS

# Grand Teton National Park Foundation

More than four million visitors come to Grand Teton National Park each year to gaze at the mountains, marvel at the wildlife, and enjoy experiences that enrich their lives. They go home secure in the knowledge that Grand Teton National Park will be waiting for their next visit, or the visit of their children or grandchildren many years in the future. That is the promise of the National Park System and its caretakers, the National Park Service.

However, the increasing popularity of national parks, and decreasing federal dollars to support them, make it harder each year for Grand Teton National Park to fulfill that promise. Congress has now directed the National Park Service to find private partners that can help the parks achieve long-term goals.

The Grand Teton National Park Foundation is the only non-profit organization dedicated exclusively to raising money for projects that protect, preserve, and enhance Grand Teton National Park. The Foundation receives no government support, relying solely on the generous contributions of private individuals, foundations, and corporations to help Grand Teton National Park.

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 35,000-acre land donation that led to today's Grand Teton National Park. The Grand Teton National Park Foundation promotes the Rockefeller spirit of philanthropy. Grand Teton National Park needs your support now more than ever

before. Please help the park keep its promise to the future by joining the Grand Teton National Park Foundation today.

**Grand Teton National Park Foundation**  
P.O. Box 249  
Moose, Wyoming 83012  
(307) 732-0629  
[www.gtnpf.org](http://www.gtnpf.org)

### Help Support Our Foundation Partners

Look for Jackson, the Teton Bear Cub in gift shops throughout the park and at retail stores in the Jackson Hole area. Jackson, a toy grizzly bear cub, was developed by Manhattan Toy, a partner of the Grand Teton National Park Foundation, to raise money for the Foundation and support Grand Teton National Park.

Look for Outlaw Fudge at motels and resorts in Jackson Hole. Outlaw Fudge Company donates \$1.00 from the sale of every box of fudge to the Foundation.

Drink Grand Teton Water, bottled by the Grand Teton Water Company in Jackson. 100% of the profits from water sales are donated to the GTNP Foundation. The bottled water is available throughout the park and in Jackson.



# Grand Teton Natural History Association

Grand Teton Natural History Association operates interpretive and educational bookstores in five visitor centers in Grand Teton National Park, John D. Rockefeller, Jr. Memorial Parkway, and several outlets in 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 visitor programs. Your purchase also supports the publication of this newspaper and many free educational handouts available at visitor centers and entrance stations.

If you are thinking about ordering books, maps and pamphlets about Grand

Teton and the Greater Yellowstone Ecosystem contact:

**Grand Teton Natural History Association**  
P.O. Drawer 170  
Moose, Wyoming 83012  
(307) 739-3403  
[www.grandtetonpark.org](http://www.grandtetonpark.org)

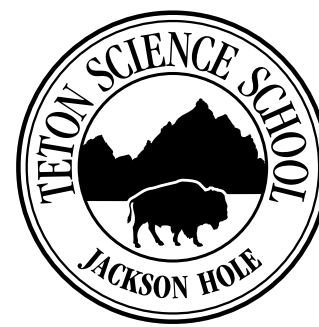


# Teton Science School

Since 1967, Teton Science School has collaborated with Grand Teton National Park to provide natural science education for students from third grade to adults. Summer programs include two- to five-week residential field ecology and field natural history courses for high school and junior high school students and week-long nonresidential programs for third through eighth grades. A one-year, masters-level graduate program in environmental education and natural science is also offered. This summer 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.

For registration, tuition information, and a free catalog, contact:

**Teton Science School**  
Box 68T  
Kelly, WY 83011  
307-733-4765  
[www.tetonscience.org](http://www.tetonscience.org)



## Entrance Fees 2003

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 Recreation Fee Demonstration Program, which allows 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 2003 money generated as a result of increased entrance fees will be used for:

- Rehabilitation and stabilization of historic structures parkwide
  - Upgrade of all phone lines between Signal Mountain Lodge and the Moose area by adding fiber optics
  - Rehabilitation of over 20 miles of trail including the Jenny Lake and Inspiration Point area as well as the Surprise, Taggart, and Bradley Lake Trails
  - Replacement or rehabilitation of comfort stations parkwide
  - Replacement of the emergency back-up systems in Colter Bay
  - Upgrade of all utilities and general rehabilitation of the Murie Ranch
- The National Park Service appreciates your support of ongoing efforts to improve protection of natural and cultural features while facilitating safe and memorable visitor experiences.

### Fee Schedule for Grand Teton National Park

**Entrance fees** allows entrance to Grand Teton and Yellowstone National Parks.  
1 day winter pass: \$5 per vehicle (good for Grand Teton National Park ONLY)  
7 day pass: \$20 per vehicle  
\$10 per person (single hiker or bicyclist)  
\$15 per motorcycle or snowmobile

**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.

# YELLOWSTONE NATIONAL PARK

## Contact Information

Emergency ..... 911  
 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 mid-December to mid-March at the Old Faithful Visitor Center (307) 545-2750.

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 & Resorts at (307) 344-7311.

Mammoth Hotel & other services 12/21/2002 to 03/02/2003  
 Old Faithful Snow Lodge & other services 12/18/2002 to 03/09/2003

Warming huts at Old Faithful, Madison Junction, Fishing Bridge, Canyon, and West Thumb are open mid-December to early March. 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

Hamilton Stores (groceries, souvenirs, light meals) and Yellowstone Park Service Stations generally open the same time or earlier as lodging in each area.

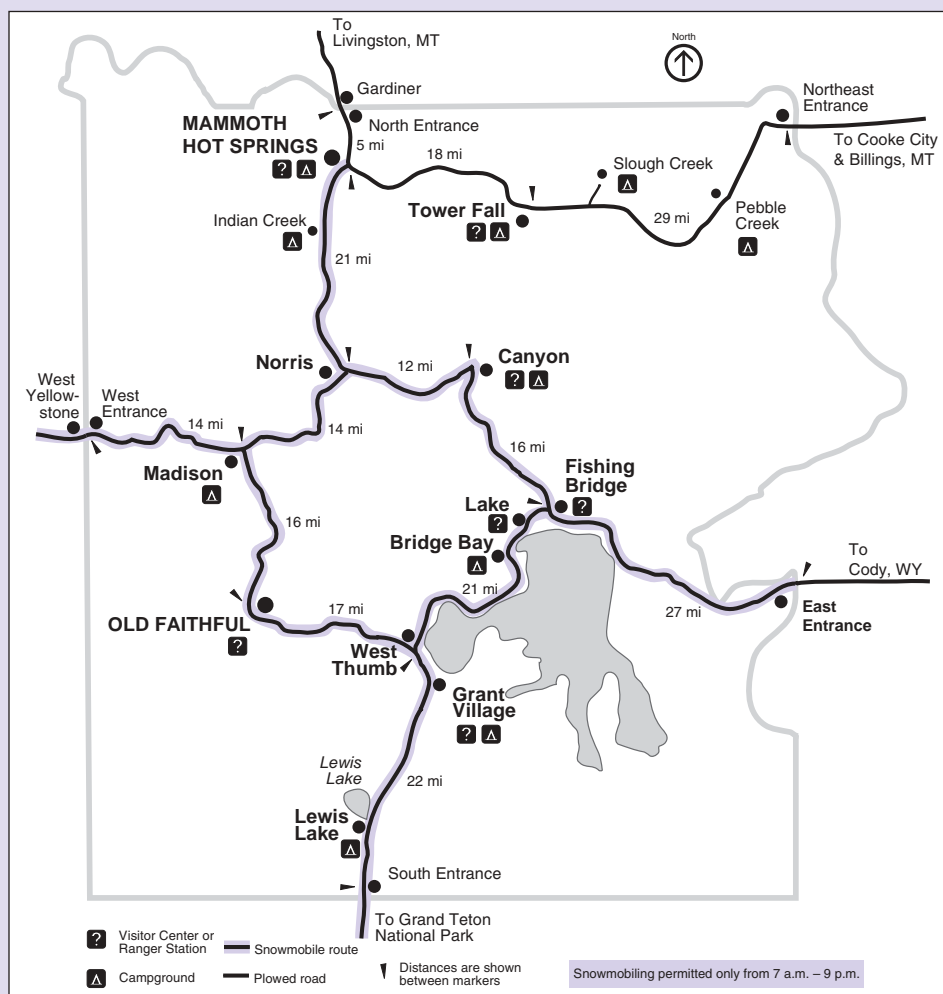
## 2003 Opening Dates (All dates are tentative, no dates are confirmed as of printing)

### 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
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

### Lodging

Old Faithful Inn	May 9
Old Faithful Snow Lodge	May 2
Old Faithful Lodge	May 16
Grant Village	May 23
Lake Yellowstone Hotel	May 16
Lake Lodge	June 10
Canyon Lodge	May 30
Roosevelt Lodge	June 6
Mammoth Hot Springs	May 3



## 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.

### Tentative Spring 2003 Opening Schedule

Spring weather is unpredictable; roads may be closed temporarily by snow or other weather conditions. Snow tires or chains may be required. Weather and snow conditions permitting, tentative road opening dates for automobiles are:

- April 18 Mammoth to Norris Junction to Madison Junction to Old Faithful
- April 18 Madison Junction to West Entrance
- April 25 Norris Junction to Canyon
- May 2 Canyon to Lake, Lake to East Entrance, Tower to Tower Fall
- May 9 Lake to South Entrance, West Thumb to Old Faithful
- May 23 Beartooth Pass

Note: North Entrance to Cooke City is open year-round. Canyon to Dunraven Pass is closed for construction.



### SEASONS from page 1

Spring wildlife watching focuses on the migration of thousands of elk north throughout the valley and the start of calving season. Bison also slowly head north in spring. Be alert for bison and elk along park roads, especially at night. Moose concentrate in the marshes along the Buffalo Fork, south of Moran Junction, and browse on

bitterbrush growing in the sagebrush flats south of Moose. The Snake River opens April 1 for trout fishing. During April, male sage grouse perform their courtship displays on traditional dance grounds at the southern end of the park; celebrate spring's arrival by joining a ranger for a pre-dawn trip to witness this annual ritual.

### SURVIVING from page 5

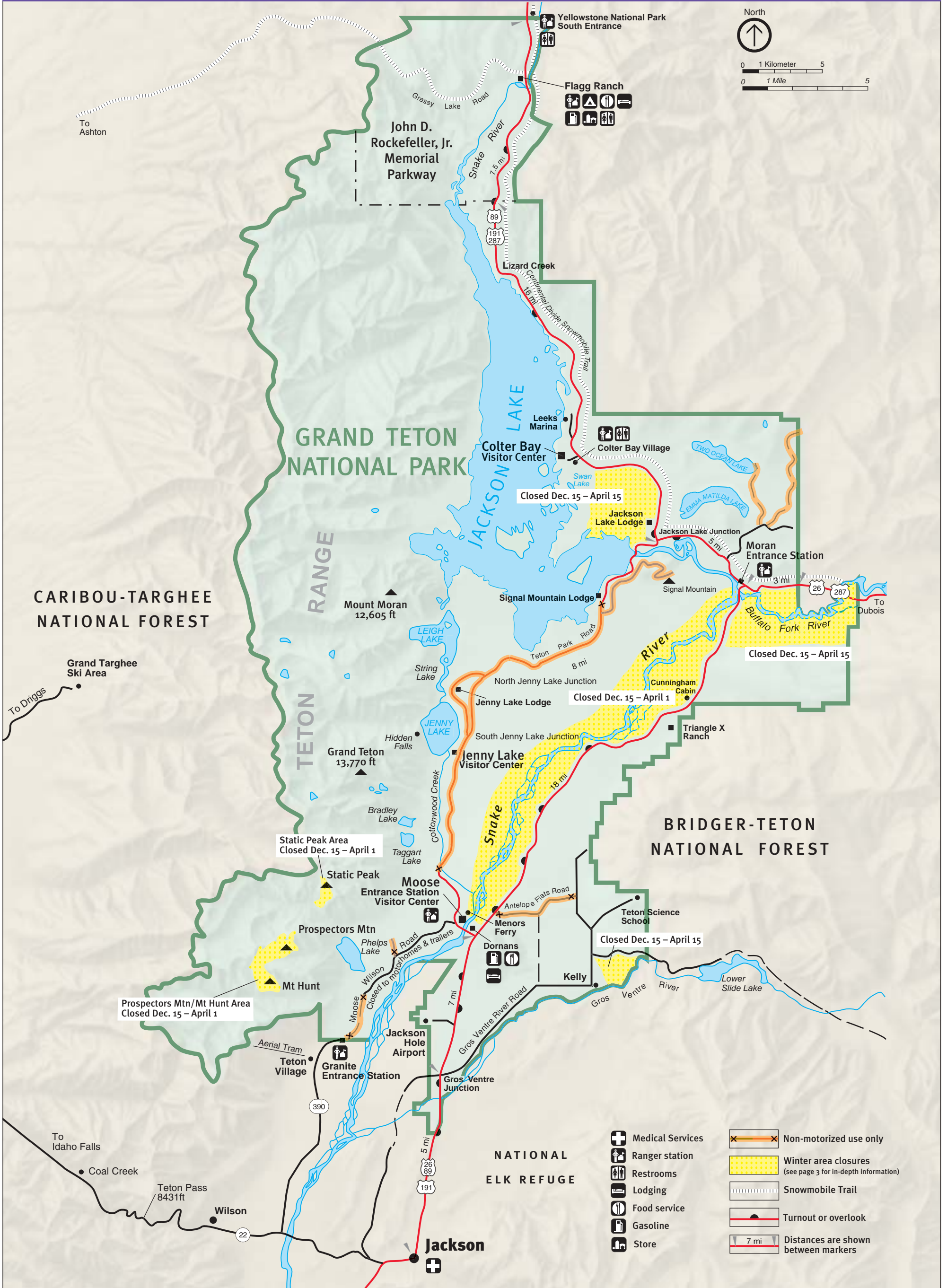
how cold it gets above. Voles remain active all winter by living under the snow where their food is still available and they can build warm nests of grass. Unfortunately for voles, weasels will successfully hunt them in their own tunnels, even using the nests as sleeping quarters and lining the nest 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.



# GRAND TETON NATIONAL PARK



## Information Services

The MOOSE VISITOR CENTER is open daily (except Christmas Day) from 8:00 a.m. to 5:00 p.m. Services include information, cross-country ski trail maps, publication sales, audiovisual programs, natural history exhibits and permits for off-season backpacking, boating

and mountaineering. Ranger-led snowshoe hikes (snowshoes provided, reservations required) are offered from late December to mid-March. Phone (307) 739-3399. 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. – 5:00 p.m. Services include information, cross-country ski trail maps and publication sales.