

Yellowstone Today

Winter 1997-98



• Official newspaper of Yellowstone National Park
• Information • Regulations • Safety • Activities



Caution, winter visitors

Yellowstone has many hidden and unmarked hazards. Freezing, thawing, and extreme temperatures can create dangerous conditions. Take proper precautions; use common sense and extreme caution near canyons, waterfalls, thermal areas, viewpoints, and wildlife. Watch your children. Your hand and your voice may be too far away once your child leaves your side.

As well, road conditions on the stretch of road open to automobiles—from Gardiner, Montana, to Cooke City, Montana—can be icy, snowpacked, and hazardous. Snowtires or chains are always recommended and may be required to drive this road in the winter.

Please drive, walk, snowmobile, and ski safely to protect your park and yourself.

Emergency—dial 911

Call a ranger—(307) 344-7381

(long distance from some park locations)
Internet enthusiasts can find our home page at the National Park Service's address:
<http://www.nps.gov/yell>

Yellowstone Entrance Fees

New entrance fees have been implemented in Yellowstone and Grand Teton National Parks beginning December 20, 1996, as follows:

Private, noncommercial automobile	\$20 (7 days, both Yellowstone and Grand Teton)
Individual snowmobile, motorcycle	\$15 (7 days, both parks)
Single entry (foot, bike, ski, etc.)	\$10 (7 days, both parks)
Annual Permit, both parks	\$40 (one year from date of purchase)

NOTE: Remember to keep your admission receipt in order to re-enter the park.

The Golden Age and Golden Access Passports remain the same (the Golden Age Passport has a one-time \$10 fee; the Golden Access Passport is still offered free of charge).

Yellowstone and Grand Teton are two of 47 National Park Service units selected to participate in the Congressionally-authorized Recreation Fee Demonstration Program. In the 1996 Appropriation Bill (Section 315), Congress mandated the Secretary of the Interior to implement a pilot fee program to demonstrate the feasibility of spreading some of the costs of managing public lands among those who use them.

Under the new fee program, the parks will be allowed to keep 80 percent of all new fees collected above the previous fiscal year (FY); the remaining 20 percent will be deposited in a special account for use in other park units. (Yellowstone collected close to \$3.8 million in recreation fees between October 1, 1995 and September 30, 1996 (FY 1995), while Grand Teton collected \$2.5 million). The parks are still

responsible to deposit FY 1995 levels in the U.S. Treasury's General Fund. Yellowstone anticipates an estimated \$6-7 million in additional revenue during the course of the three-year project; Grand Teton anticipates an estimated \$4 million. Funds collected during the project will remain available to the park for a six-year period.

The additional funds generated by the fee increases will be used to accomplish projects the parks have been unable to fund through yearly Congressional allocations. Funded projects will increase the quality of the visitor experience and enhance the protection of park resources.

Some of the projects expected to be funded include the protection of the parks' road investment through overlays, patching, chipseal, drainage and erosion control; enhancement of accessibility for the physically challenged to park resources and buildings; increased monitoring and mitigation activities for park resources; upgrading of park campgrounds and amphitheaters; rehabilitation of park

structures; and repair of failing elements in utility systems parkwide.

"We are very pleased that Yellowstone and Grand Teton have been selected as two of the parks to participate in the recreation fee demonstration program," Yellowstone Superintendent Mike Finley stated. "Yellowstone has been faced with the insurmountable task of trying to fund an enormous backlog in infrastructure and maintenance needs. We have had to cut visitor services and visitor protection and delay resource management and other projects. Funds generated from this program will be used to address those needs; both the park resources and the visitors will benefit."

UserFee

When you see this logo, your user fee money is at work in Yellowstone.

Spring plowing starts March 2

Throughout the park, groomed roads will close to oversnow vehicle (snowmobile and snowcoach) traffic for spring plowing as follows:

March 2	Mammoth to Norris
March 4	Madison to Norris to Canyon
March 9	All other park roads close to oversnow traffic.

Roads close at 8:00am on the days listed.



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Yellowstone Today, which is distributed

to visitors at park entrances, is published by the staff of Yellowstone National Park. As a member of the Yellowstone Association (YA), you have contributed to the production costs of this publication, a major source of information for millions of park visitors each year. YA operates book sales facilities in visitor centers and museums; YA staff provide information and assistance to park visitors. Ultimately, much of YA's revenue is returned to the park's educational, interpretive and research programs. As a YA member, you are a part of the team striving to preserve Yellowstone "For the Benefit and Enjoyment of Future Generations."

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WARNING!

Some things all visitors must know...
hazards in Yellowstone National Park

Emergency—dial 911

Park information—(307) 344-7381

Temperatures

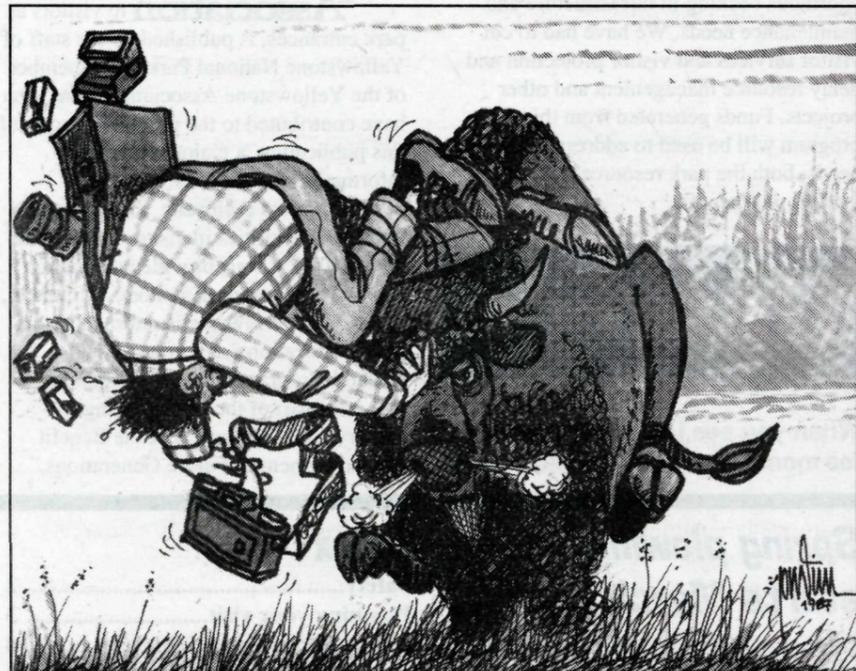
Daytime temperatures are usually in the 10° to 30°F range (-12° to -1°C) while nighttime temperatures often dip to between -12° and -40°F (-29° to -40°C). How cold can it get here? **The lowest temperature ever recorded in Yellowstone was -66°F in 1933.**

Yellowstone's weather often seems to defy predictability; conditions at any given time may vary drastically from those forecast or from long term averages. Wind chill compounds severe temperatures. Be prepared for storms that can quickly drop temperatures. Before starting a snowmobile trip or ski tour, check on local conditions and get a weather forecast.

Drivers

The only roads plowed for the entire winter season—and not open to over-snow vehicles—are the 56 mile (90 km) stretch between the North Entrance and Cooke City, Montana, via Mammoth Hot Springs and Tower Junction, and a 1-1/2 (2.4 km) mile stretch from Mammoth Hot Springs to the parking area at the Upper Terraces. These roads are maintained only during daylight hours and may close during severe storms. **Expect snow packed roads, icy spots, and frost heaves. High winds cause blowing and drifting snow. Snow tires or tire chains may be required and are always recommended.**

Park roads are designed for slower-than-interstate speeds—**45 mph (73 kph) maximum**, lower where posted. **Do not stop on the road and block traffic when viewing wildlife or scenery. PLEASE USE PULLOUTS.**



Watch your children

Your hand and your voice may be too far away once your child leaves your side... Please—protect your park and yourself.

Snowmobilers

Prepare for extremely cold conditions. Sudden changes in weather are typical, and conditions can differ drastically from one location to another.

Cold plus wind can be a deadly combination. For example, if you are travelling 40 miles per hour on a snowmobile and the thermometer reads 10°F, the wind chill factor is **37° below zero**, cold enough to freeze exposed flesh within one minute!

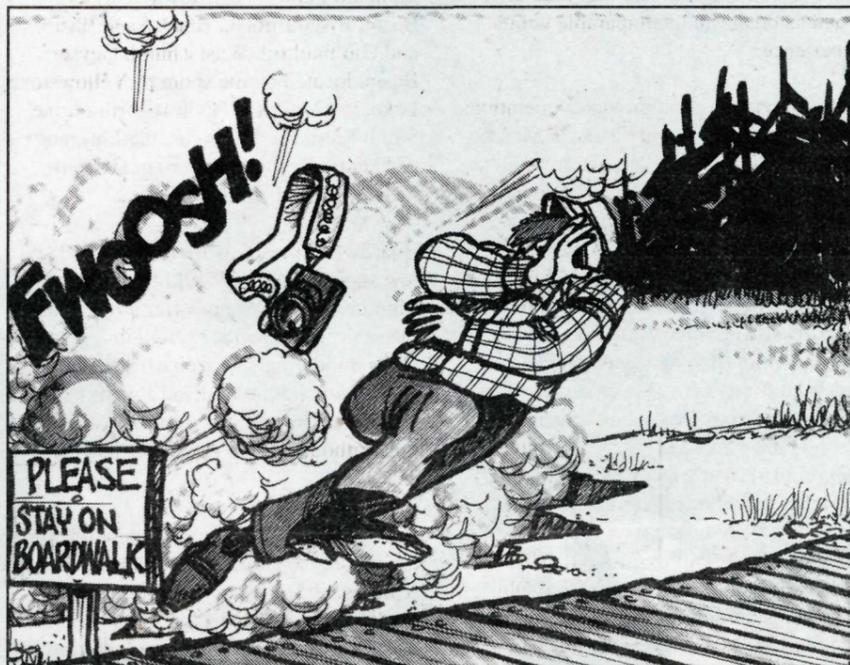
Dress warmly and stop often at warming huts to reheat. For regulations and information on planning a safe trip, see page 5.

Skiers & Walkers

Trails may be icy, making footing dangerous. Heed trail closures; even open trails may be hazardous. Proceed with caution at all times. Please watch your children very closely on all trails and overlooks.

You face harsh conditions plus the effects of vigorous physical exertion. **Be prepared for equipment problems, injury, rapidly changing weather, and other unplanned events that may occur whether your outing lasts several days or only a few hours!** For more information on gear selection and ski trip safety, see page 6.

The large fires in Yellowstone during the summer of 1988 burned near or across many trails. These fires burned the tree trunks and root systems, creating hazardous standing snags which can fall with little warning. Be alert for this possibility. There is no guarantee of your safety. **While in burned areas, stay on established trails.**



Scalding water can ruin your trip

Stay on boardwalks and designated trails. Scalding water underlies most of the thin, breakable crusts; pools are near or above boiling temperatures.

Yellowstone's thermal features, rare among the earth's wonders, are extremely fragile. Boardwalks and trails protect you and preserve delicate formations.

Pets are prohibited in thermal areas.

Swimming or bathing in thermal pools or streams whose waters flow entirely from a thermal spring or pool is prohibited. Thermal waters may contain organisms known to cause infections and/or amoebic meningitis which can be quickly fatal. Swim at your own risk; for more information, ask at any ranger station or visitor center.

Avoid these situations

Law enforcement rangers strictly enforce park regulations to protect you and the park. We do not want to have a negative contact with you. Please give special attention to park regulations and avoid these common problems:

- speeding (radar enforced)
- driving or snowmobiling while intoxicated
- sidehilling or off-road snowmobiling

- chasing or molesting wildlife
- feeding wildlife
- camping in undesignated locations
- pets off leash or on trails
- littering
- swimming in thermal pools
- removal of natural or cultural features
- approaching wildlife too closely

Unpredictable wildlife; keep your distance

Do not approach any wildlife. View from the safety of your vehicle. If an animal reacts to your presence, you are too close.

BISON may appear tame and slow but are unpredictable and dangerous. See page 5 for tips on passing bison or other wildlife on a snowmobile.

COYOTES can quickly learn bad habits like roadside begging. This may lead to aggressive behavior toward humans.

BEARS may be seen in early and late winter. Be alert for tracks and signs. Never approach animal carcasses. Report all bear sightings to a ranger.

Snowmobilers: Stop and allow wildlife to move off roads before continuing. If you must pass them, follow the guidelines on page 5.

Skiers: Give all animals plenty of room. Do not ski through herds.

Seeing animals in the wild inspires the photographer in all of us. However, wild animals, especially females with young, are unpredictable. Keep a safe distance from all wildlife. Each year, a number of park visitors are injured by wildlife when approaching too closely. **Approaching on foot within 100 yards (91 m) of bears or within 25 yards (23 m) of bison, elk, bighorn mountain sheep, deer, moose or coyotes is prohibited.**

If your camera is not equipped with telephoto lenses, do not attempt closeup photography.

You will see more of an animal's natural behavior and activity if you are sensitive to its need for space. That need is most critical in winter. Cold and deep snow make it difficult to find food, and every movement costs precious energy. **If you pursue an animal for a photograph, you may jeopardize its survival.**

Planning is crucial for winter visit

Winter in Yellowstone is a time of extremes: boiling versus frozen water, the suspended animation of hibernating animals versus the struggle of others to find food, days of blizzard whiteout versus days of pure sparkling colors. Transformed by cold, water assumes endlessly variable forms and shapes: waterfalls freeze into giant icicles, geyser spray falls as crystal beads or grows into fantastic ice sculptures, Yellowstone Lake freezes from shore to shore. Wildlife and people adapt to harsh conditions in ways both obvious and subtle. In the vast wildness of Yellowstone, snow and cold combined with natural wonders create an incomparable winter experience.

Yellowstone's season of winter operations runs from late December to early March. First, decide how you will get around the park. Heavy accumulations of snow limit driving; **the only road open for year-round automobile travel is the Gardiner-Cooke City road (North Entrance to seven miles east of the Northeast Entrance)**. All other park roads are closed to wheeled vehicles but groomed for snowmobile or snowcoach travel. Snowmobiles, rented or privately owned, and snowcoaches are permitted on groomed roadways; **sidehilling and off-road travel are illegal**.

Snowcoaches—winter busses on skis and caterpillar tread—depart from Old Faithful, Mammoth Hot Springs, West Yellowstone (at the West Entrance) and Flagg Ranch (near the South Entrance). Reservations are strongly recommended; call Amfac Parks & Resorts at (307) 344-7311 for information and reservations.

Snowmobiles may be rented from a variety of outfitters in nearby communities or from concessioner AmFac Parks & Resorts. Privately owned and operated snowmobiles must be registered according to the laws of the operator's state of residence and have a muffler in good working order (see page 5). Operators must have a valid motor vehicle driver's license. Before beginning your trip, get an up-to-date road and weather report. The key to enjoying your winter visit is **preparation**. Now you are ready to discover Yellowstone's winter wonders.

THERMAL BASINS

Geysers, hot springs, mud pots and fumaroles are fascinating any time of year. In winter, the clash of extreme heat and

cold creates extraordinary beauty—ghost trees, ice cones, eruptions seemingly amplified in the frigid air to several times summer height. Warm ground, steam and hot water runoff create microclimates; in places, plants grow in summer-like lushness. Animals are drawn to thermal areas because food is easier to find.

Most of the park's major thermal basins lie along the 50 mile (80.5 km) road between Mammoth Hot Springs and Old Faithful. These areas include the Mammoth Hot Spring Terraces, Norris Geyser Basin, Fountain Paint Pots, Midway Geyser Basin, Biscuit Basin, Black Sand Basin, and Old Faithful. West Thumb Geyser Basin, located on the shore of Yellowstone Lake, is 22 miles (35.4 km) north of the South Entrance. Six miles (9.7 km) north of Fishing Bridge junction, in Hayden Valley, is Mud Volcano.

Boardwalk trails may be snowpacked and icy, so walk carefully. Old Faithful and Mammoth Hot Springs offer a full range of services and facilities: lodging, meals, snowmobile fuel, snowcoach service. A warming hut at Madison Junction offers snacks and hot drinks. Another warming hut, without snacks, is located at West Thumb.

You may be surprised to see puffs of steam at random locations. Countless tiny thermal features elude detection by summer visitors, but winter reveals and highlights their presence. Other clues to thermal influence include patches of bare ground, ice-free streams or ponds, and frozen spray where no waterfall exists, evidence of geyser activity. Yellowstone's volcanic past (and future?), expressed in thermal activity, is more obvious now than at other times of year.

GRAND CANYON OF THE YELLOWSTONE

The Yellowstone River has carved a great canyon through rocks altered by thermal activity. Snow clings to canyon walls in patterns determined by pinnacles, ridges, gullies and slopes. Deep in the canyon, steam plumes mark locations of hot springs, geysers and fumaroles.

By mid-winter the roar of the Upper and Lower Falls is muffled behind massive sheets of ice. Water seems frozen in motion, as though instantly transformed from towering falls to icicle. At the base of the Lower Falls, spray freezes and grows

into an ice cone that sometimes reaches half the height of the falls. Overlooks along the North and South Rims offer views of different portions of the canyon and of the Lower Falls. Facilities at Canyon Junction include a warming hut, snacks, hot drinks, and snowmobile fuel.

YELLOWSTONE LAKE

At an elevation of 7,733 feet (2,345 m), Yellowstone Lake is North America's largest body of water at a relatively high elevation. During winter, its 136 square miles (354 sq km) of surface freeze solid from shore to shore (except for isolated spots of thermal activity). Freeze-up is a gradual process in such a large body of water, starting as early as August. Water temperature gradually drops, cold water sinks as warm water rises, and the process continues until the water is uniformly cold enough to freeze.

Although shallow lagoons or bays may freeze earlier, widespread freeze-up takes place after an intensely cold subzero night. On average, the lake is ice-locked by December 25. In the few days between freeze-up and the accumulation of insulating snow, solar radiation causes heating and expansion of the vast sheet. Ice noisily shifts—creaking, popping, and groaning in the stillness; "the lake sings" in the local parlance.

Yellowstone Lake is snowbound roughly half the year. Break-up occurs quickly, usually in late May or June. This vast body of water is a complex system influencing climate, plants and animals over a far greater area than its shoreline boundaries. Set amidst the Absaroka Mountains, it defines the essence of winter—an untouched wilderness snowscape, harshly beautiful. Warming huts are located near Fishing Bridge and at West Thumb.

WILDLIFE

Winter is the season of greatest stress to all living things. For many animals, it is the time of dying. The very old, very young, and those weakened by injury or illness are at a disadvantage when it is extremely difficult to find food. Even

animals in good condition cannot endure repeated stress without depleting energy reserves; soon, survival is at stake. Now more than ever, you must avoid unnecessarily disturbing wildlife. Never approach animals closely—you may cause an animal to move, and exertion through deep snow consumes great quantities of energy. Animals have adapted to cold and snow in a variety of ways. Ground squirrels, marmots and bears disappear underground or into dens, entering that mysterious state of suspended animation known as hibernation. Others, including many birds, leave for more moderate climates.

For those who remain, adaptations include thicker winter coats, a change to protective coloration, or migration to lower elevations or to thermal basins where winter is slightly less severe and food easier to find. Of the large mammals inhabiting Yellowstone, only the moose can survive in the forest. Its long legs are well suited to striding through deep snow to reach fir needles.

Elk and bison are most commonly seen, partly because their winter ranges overlap areas of human occupation, and partly due to numbers. Look for them in the Lamar, Pelican and Hayden Valleys, and along the Firehole River.

Winter in northern Yellowstone, along the 56 miles (90 km) of road between Gardiner and Cooke City, Montana, is significantly different from the rest of the Yellowstone plateau. Three river valleys—the Yellowstone, Lamar and Gardner—combine with the lowest elevations in the park to create ideal winter habitat for a variety of wildlife. Typically, less snow falls here and temperatures are a few degrees warmer than elsewhere in the park. Few other places in North America feature the diversity of wildlife found here.

Often, a visit is most remembered and enjoyed for the discoveries made on your own. Though winter logistics encourage haste, patience and alertness may bring you moments of extraordinary beauty or reveal the story of a jumble of tracks in the snow. May your visit be safe, rewarding and special.

Yellowstone Today is published by the Division of Interpretation, P.O. Box 168, Yellowstone National Park, WY 82190, (307) 344-2258, in cooperation with the Yellowstone Association.

Self-guiding trails

Take time to stretch your legs and linger in the beauty of the snowscape. Adapt your pace to winter conditions; trails may be icy and snowpacked so walk with caution. For safety and courtesy to skiers, please do not walk in ski tracks.

MAMMOTH HOT SPRINGS TERRACES

Paths wind over a hillside of active and inactive hot springs. These springs are noted for their rapid mineral deposition; up to two tons of limestone is added to the hillside daily. Formations are fragile and unstable. For their protection and your own, stay on designated boardwalks and trails. Trail guide leaflets are available for 25¢ at the visitor center or parking lot trailheads.

NORRIS GEYSER BASIN

Explore the hottest, most active thermal basin in the park. Trails begin at the museum. Thermal features are fragile and easily damaged by objects tossed into them or by off trail travel. Thin crusts give away to boiling water. Stay on designated trails and boardwalks to preserve features and protect yourself.

FOUNTAIN PAINT POT

Located 8 miles (12.9 km) south of Madison Junction (and 8 miles (12.9 km) north of Old Faithful). Mud pots boil and churn, changing shape with each burst; minerals are the "paint" of the pots. Active geysers and varicolored pools are also found along this short trail. Preserve delicate features and protect yourself from serious burns by staying on boardwalks and trails. Avoid disturbing wintering wildlife.

UPPER GEYSER BASIN

The world's largest array of geysers is found here, including Old Faithful Geyser. Several miles of trail begin at the Old Faithful Visitor Center. Ski trail guide leaflets are available at the visitor center and at the Old Faithful Snow Lodge. Check on trail conditions and weather forecasts before starting out; hazards may cause restrictions or closures. Help preserve fragile formations and protect yourself from severe burns by staying on designated trails. Avoid disturbing wintering wildlife.

WEST THUMB GEYSER BASIN

Thermal features boil and steam on the shore of ice-locked Yellowstone Lake. Otters are occasionally spotted fishing in ice holes. Avoid damaging or destroying delicate features and protect yourself by staying on trails. Lake ice is thin and hazardous; do not venture out on it.

MUD VOLCANO

Located approximately 6 miles (9.7 km) north of Fishing Bridge Junction (10 miles (16.1 km) south of Canyon Junction). The names of thermal features—Dragon's Mouth, Mud Volcano, Black Dragon's Caldron—hint at the unusual colors and activity found here. Thin crust overlies boiling water; stay on trails to protect yourself and fragile formations. Avoid disturbing wintering wildlife.

GRAND CANYON OF THE YELLOWSTONE

The Canyon and Lower Falls of the Yellowstone River are seen from overlooks along the North and South Rim roads. Stop at the Canyon Warming Hut for a map of the area. Trails and overlooks are snowpacked—use caution. Note: the road is closed to snowmobiling 4 miles (6.4 km) north of Canyon Junction.

Information and activities Opening and closing dates are weather-dependent.

Visitor Centers

Mammoth Hot Springs, Albright Visitor Center

Open year round. Winter hours 9:00 am–5:00pm daily.

Information, bookstore, and exhibits of the early history, exploration and establishment of Yellowstone National Park. A one-hour video on winter in Yellowstone is shown at 9:00am and 3:30pm daily; a 25-minute film on the National Park idea is shown on request during the remainder of the day. Check at the visitor center for more information or call (307) 344-2263.

Old Faithful Visitor Center

Open daily 9:00 am–5:00pm from December 17 through March 8.

Information, bookstore, and geyser eruption predictions are available. A short movie on geysers is shown throughout the day. Check at the visitor center for more information or call (307) 545-2750.

Ranger-naturalist activities

Old Faithful

Evening programs are offered Wednesday, Thursday, Friday, and Saturday nights (December 17–March 7) at 7:00pm in the Old Faithful Visitor Center Auditorium. Allow one hour. For program topics, check at the visitor center or call (307) 545-2750.

Mammoth Hot Springs

Evening programs are offered Thursday, Friday and Saturday nights (December 25–February 28) at 8:30pm in the Mammoth Hotel Map Room. A ranger-naturalist accompanies the Wildlife Bus Tour on Wednesdays (see right). For more information, check or call the visitor center at (307) 344-2263.

Roving ranger-naturalists

Look for ranger-naturalists at Yellowstone warming huts or near major park features. They are intermittently available to assist you, to answer your questions, and to tell you more about the winter wonderland of Yellowstone.

Concessioner activities

Park concessioners operate lodging and provide other services, including **evening programs, snowcoach tours, guided ski and snowshoe tours, guided snowmobile tours, and wildlife bus tours.** Detailed information is available at the Visitor Centers, Warming Huts, or ask for a copy of Discover Yellowstone. For more information call local Chambers of Commerce for activities starting outside the park or AmFac Parks & Resorts at (307) 344-7311 for activities starting both inside and outside the park.



Yellowstone Park Foundation

It took 100 years for the first 50 million people to visit Yellowstone National Park, yet only 20 years for the second 50 million to visit. This rapid increase in the number of park visitors, along with many other mounting pressures on Yellowstone's spectacular resources, has made it increasingly difficult for the park to fulfill its mission.

The Yellowstone Park Foundation is a non-profit organization dedicated to raising money for projects that protect, preserve, and enhance Yellowstone National Park. The Foundation was established by concerned citizens, working closely with the National Park Service, who recognized that shrinking government appropriations meant that many important park projects were not being funded.

The Foundation funds habitat restoration, wildlife management, historical and cultural interpretation, and research projects. Some of the projects that the Foundation has supported include:

- * A beaver population survey to determine the range and impact of beavers on the biological diversity of Yellowstone's aquatic and terrestrial ecosystems.

- * The Fort Yellowstone Self-Guiding Trail that interprets the role of the U.S. Army in protecting Yellowstone during its early years.

- * A landmark project to restore the park's native Westslope Cutthroat Trout population.

The Yellowstone Park Foundation receives no government support. It relies solely on the generous contributions of private individuals, foundations, and corporations to help protect and preserve Yellowstone for our enjoyment and that of future generations. Yellowstone needs your support now more than ever. Please help to preserve the beauty and wonder of Yellowstone by becoming a Friend of Yellowstone. With a donation of \$100 or more, you will receive Yellowstone's limited edition 125th anniversary pin while supplies last. If you make a donation of \$1,000 or more, your name will be displayed on the park's "honor wall" at Old Faithful where you will receive special recognition as a Yellowstone National Park Steward.

Yes, I want to become a Friend of Yellowstone National Park and help to preserve, protect and enhance the park's natural wonders.

Contributor Supporter Guardian Steward Other
\$25 \$50 \$100 \$1,000

Enclosed is a tax-deductible gift of \$ _____

Name _____
Address _____
City _____
State _____ Zip _____
Phone _____
The Yellowstone Park Foundation
109 East Main Street, Suite 2
Bozeman, MT 59715
(406) 586-6303

Warming Huts

Old Faithful Warming Hut. Open Dec. 17–March 8, daytime only.

Vending machine snacks are available.

Madison Junction Warming Hut. Open Dec. 17–March 8, 24 hours daily.

AmFac Parks & Resorts sells light snacks and hot drinks during the day; vending machine snacks available any time.

Indian Creek Warming Hut. Open Dec. 17–March 8, 24 hours daily.

Fishing Bridge Warming Hut. Open Dec. 17–March 8, 24 hours daily.

Vending machine snacks and cold drinks available.

Canyon Warming Hut. Open Dec. 17–March 8, 24 hours daily.

AmFac Parks & Resorts sells light meals and hot drinks during the day, and vending machine snacks available anytime.

West Thumb Warming Hut. Open Dec. 17–March 8, 24 hours daily.

Yellowstone Institute courses

As seasons change and winter moves in, Yellowstone country is transformed into a beautiful snowscape, offering visitors to the park rewarding experiences available to relatively few people. Yellowstone Institute winter courses provide an opportunity to learn about this special place in a stimulating, fun, and safe environment, full of the camaraderie that comes so easily at this time of year. Field courses offered this winter are:

An Introduction to the Lamar Valley on Skis—January 2–4, 1998

Winter Wildlife and Nature Photography—January 9–12, 1998

Wilderness First Responder—January 13–23, 1998

How Mammals Survive Winter—January 24–25, 1998

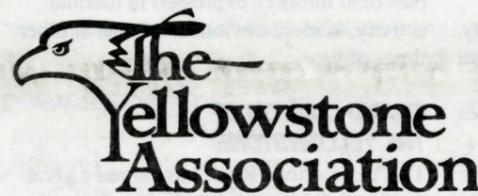
The Tradition of Winter Storytelling—January 30–February 1, 1998

Exploring the Yellowstone Landscape on Skis—February 5–8, 1998

Yellowstone's Winter World—February 13–16, 1998

Exploring Yellowstone's Northern Range: Winter Ecology and Survival—February 20–22, 1998

The Yellowstone Institute offers more than 80 diverse courses each year on such topics as geysers, grizzlies, birds, wildflowers, and park history. For more details about these learning experiences, call (307) 344-2294 or write P.O. Box 117, Yellowstone National Park, WY 82190.



Public appreciation and dedication have ensured Yellowstone's protection and preservation for the first 125 years of its history. The non-profit Yellowstone Association has dedicated itself to fostering this critical public support through education since its

founding in 1933 and, with the help of visitors like you, has provided funding of over \$5,000,000 to Yellowstone National Park in support of educational, historical, and scientific projects.

How Can You Help?

First, visit a Yellowstone Association educational bookstore, located in all park visitor centers. **One hundred percent** of the profit from your purchase is returned directly to Yellowstone to fund critical educational programs, scientific research, ranger-naturalist training and program supplies.

Second, become a member of the Yellowstone Association and provide substantial support to Yellowstone while receiving a year's subscription to *Wilderness Profile*, the Association's Yellowstone **newsletter** and to *Yellowstone Today*, the official park **newspaper**, both published quarterly. You will also receive a **15% discount** on your purchases in Association park bookstores and a discount on Yellowstone Institute **classes** (see page 13). Members who join in the park will also receive a large, beautiful and reusable fabric **book bag** commemorating the wolf's return to Yellowstone in soft-toned natural shades of gray, olive and cream in appreciation for their contribution.

For more information on Association membership or activities, ask one of our helpful staff members at any park visitor center, or write PO Box 117, Yellowstone National Park, WY, 82190; or call (307) 344-2296. We look forward to welcoming you as a member of Yellowstone National Park.

YES! I want to help preserve Yellowstone through education.

To receive all the benefits of membership, visit any park visitor center or complete and mail this form with your dues to: The Yellowstone Association, PO Box 117, Yellowstone National Park, WY, 82190.

Name _____
Address _____
City _____ State _____ Zip _____

Annual dues: Associate \$25 Patron \$250
 Contributing \$50 Sponsor \$500
 Sustaining \$100 Benefactor \$1,000

Make checks payable to The Yellowstone Association.

Charge to: _____ VISA _____ Mastercard _____ Discover
Card # _____ Expiration Date _____
Signature _____ PNP

Snowmobiling and other information

ACCIDENTS

Report all accidents or injuries to park rangers at visitor centers or ranger stations.

WINTER CAMPING

Wheeled vehicles: winter camping is available only at Mammoth Campground (accessible via the North Entrance). Heated restrooms and water are available. Overnight camping or stopping outside of this designated campground are not permitted.

BACKCOUNTRY PERMITS

Permits are required for **overnight backcountry use** and may be obtained in person up to 48 hours in advance from any ranger station. Rangers will provide information on weather, trails and snow conditions, and alert you to any special winter hazards. **Wood fires are only allowed in Mammoth Campground** so skiers must carry stoves and fuel for cooking or melting snow.

PACK IT IN—PACK IT OUT All refuse must be carried out of the backcountry.

SANITATION Latrine areas must be a minimum of 100 feet (30 m) from all water sources and out of sight from trails and camp areas. Burn toilet paper on top of the snow.

DEFACING PARK FEATURES

Collecting natural or archeological objects, or removing, defacing or destroying any plant, animal, or mineral is prohibited. Travel into fragile thermal areas may result in serious injury or damage to the area.

FIREARMS Firearms are not allowed in Yellowstone. However, unloaded firearms may be transported in a vehicle when the weapon is cased, broken down or rendered inoperable, and kept out of sight. Ammunition must be placed in a separate compartment of the vehicle.

LOST AND FOUND Report lost and found items at any visitor center or ranger station. A report will be filed and the article returned when possible. For more assistance write: Yellowstone National Park, Visitor Services Office, P.O. Box 168, Yellowstone National Park, WY 82190.

PETS Pets must be leashed. They are prohibited on ski trails, in the backcountry, and in thermal basins. Leaving a pet unattended and/or tied to an object is prohibited.

SHOULD YOU DRINK THE WATER?

Intestinal infections from drinking untreated water are increasingly common. Water may be polluted by animal and/or human wastes. When possible, carry a supply of water from a domestic source. If you drink water from lakes and streams, boil it a minimum of two minutes to reduce the chance of infection.

BEWARE OF HYPOTHERMIA AND FROSTBITE

Yellowstone's weather is unpredictable; a calm, clear day may turn fiercely stormy. Without adequate clothing and gear an easy ski tour or snowmobile trip can turn into a battle for survival. Exposure to wind and cold can result in **hypothermia**. This rapid loss of body heat can cause death if not treated. Early warning signs include shivering, slurred speech, memory lapses, drowsiness, and exhaustion.

Exposure to cold and wind can also result in **frostbite**. Frostbite can permanently damage tissue and affect functional use of fingers, toes, nose, ears or other body extremities. Protect yourself with warm, layered clothing and frequent stops to warm up.

Snowmobile regulations

Snowmobiling is one way to discover Yellowstone's winter wonders. Snowmobile regulations are designed to protect park resources and you, and are strictly enforced.

- **Snowmobile operators must possess a valid state motor vehicle driver's license (see article below).**
- Maximum speed limit is 45 mph (73kph) or less when posted.
- Snowmobiles may be driven on designated roads only. Sidehilling is prohibited and carries a fine of up to \$5,000. Stay on roads to avoid injuring yourself, damaging your machine or harming the environment.

- Operating a snowmobile while intoxicated is illegal. Possession of open containers of alcoholic beverages, including bota bags, is illegal while operating a snowmobile or riding as a passenger.
- Wildlife have the right of way! Chasing, molesting, approaching or feeding any animal is prohibited (see article below).
- Snowmobiles must be registered according to the laws of the operator's state of residence, Wyoming or Montana, and have a muffler in good working order.
- Snowmobile exhaust and muffler systems must be in good working order. The maximum noise allowed is 78 decibels

when measured during full acceleration at a distance of 50 feet. Most stock exhaust systems meet this standard. "After-market" ("piped") exhaust systems often do not. Snowmobiles exceeding the decibel standard will be denied entry into the park.

ATTENTION ANGLERS: Yellowstone National Park's fishing season closed on the first Sunday in November and will not reopen until Saturday of Memorial Day weekend.

THINK BEFORE YOU DRINK

Tips for passing bison and other wildlife on park roads

If bison or other wildlife are slowly walking toward you on the road: Pull your machine over to the side of the road opposite the animal(s), as far as possible, and stand to the side of it, leaving the machine between you and the animal(s). Wait until they are completely past you before driving on. Do not make any quick or loud movements. Wildlife are generally not aggressive unless they have been provoked or surprised.

If animals are standing in the road:

Stop at least 25 yards (23 m) before reaching them. Give them the opportunity to move off the road. If they don't move, and you want to pass them, assess their behavior.

If the animals do not appear to be agitated and if they remain standing calmly, inch toward them and stop. Watch how they respond to your advance. They may decide to get out of your way by walking off the road or by moving to avoid you. If so, pass safely on the opposite side of the road at a moderate and consistent speed. Use groomed pullouts whenever possible to give the animals maximum space when you are passing.

If the animals remain calm, but do not move as you inch toward them, stop, pause, and then try again. Give them the right of way. If they feel pressured or pushed, they may begin to stampede.

If an animal raises its tail, paws the ground, or throws its head and body around, **do not attempt to pass**. Wait for the animal to leave the road on its own. Any advance may be perceived as a threat and the animal(s) could charge.

If animals are running toward you:

It is likely that oncoming snowmobile traffic is pushing them your way. If you have enough time and space, turn your machine around and move down the road until the animals have moved off the road or until you find a safe place, such as a pullout. Remember that it is difficult to turn a snowmobile around quickly. If your machine does not have reverse, remember

that you will need the space of both lanes to turn your vehicle around.

If you do not have time to turn around, pull your machine as far as possible to the side of the road opposite the animal(s), and stand to the side of it, leaving the machine between you and the animal(s).

Be aware of the urgency of this situation. Anticipate it as you come around a curve and be prepared to act quickly. Also, make an effort to avoid running wildlife down the road, pushing them toward oncoming snowmobilers. **And remember, there is no guarantee of your safety.**

License is needed to snowmobile

All snowmobile operators in Yellowstone National Park are required to possess a valid motor vehicle operator's license. In addition, persons possessing a learner's permit may operate a snowmobile in the park when supervised one to one within line of sight (but not further than 100 yards) by a licensed person 21 years of age or older. The policy change was implemented because of the park's concern about the number of snowmobile accidents involving young operators.

Snowmobile use has increased dramatically in the park over the past decade, and it is now common to have over 1,600 snowmachines a day, including track-conversion vehicles and snow coaches, operating on the park road system. Modern snowmobiles weigh 400-500 pounds and are capable of quick acceleration to over 70 mph. Between 1987 and 1992, youthful operators accounted for an average of 16 percent of the snowmobile accidents in the park, while composing an estimated 5 percent or less of the total number of snowmobile operators.

Park officials believe that winter traffic conditions are more similar to a highway driving situation than to the snowmobile and off-road vehicle trails found elsewhere. Under the high speed highway conditions found in the park, most young snowmobilers are at a distinct disadvantage in terms of their judgment, experience, and physical capabilities compared to a licensed driver. This rationale is reflected by the fact that the vast majority of states require persons operating motor vehicles on state roads to be licensed and at least 16 years old.

The driver's license requirement being implemented for snowmobiling in Yellowstone is not unprecedented. A number of states require the possession of a valid driver's license to operate a snowmobile on public lands or on public roads. Options for young people visiting the park during the winter include doubling up on a snowmobile operated by a licensed driver or using any of the authorized commercial snowcoach services that provide transportation in the park.

Keep your trip safe

• **Travel in groups;** emergencies are more easily handled.

• **Dress for extreme cold.** Items essential for snowmobilers include: helmet, face mask, heavily insulated gloves or mittens, felt lined boots, and a heavily insulated snowmobile suit. Avoid tight-fitting garments; they restrict circulation and increase the possibility of frostbite.

• Carry extra food for 12 hours beyond your planned trip, extra fuel, drive belt, spark plugs and appropriate tools, plus extra parts which frequently break down or wear out on your machine. Always include matches and a First Aid kit. **Repair services are not available in the park** except for minor repairs and parts at Old Faithful.

• **Know the locations of warming huts, visitor centers and public phones** (see the back page of this newspaper.)

• Before starting your trip, **check on road and weather conditions.** Blowing and drifting snow can be especially hazardous in Hayden Valley (between Canyon and Fishing Bridge Junctions) and on Swan Lake Flats (approximately 4 mi (6.4 km) south of Mammoth Hot Springs).

• **Avalanches** may occur on steep hills or canyons. When travelling through such areas, do not bunch up—spread out. Avalanches are more likely to occur during or after heavy fresh snowfall, high winds, or extreme temperature changes.

• Hazardous conditions may temporarily close Sylvan Pass (between the East Entrance and Fishing Bridge Junction). The road from Tower Junction to the Washburn Hot Springs Overlook, four miles (6.4 km) north of Canyon Junction is closed to snowmobiling due to avalanche danger.

• See article above for some tips to assist you in passing bison and other wildlife.

Cross country skiing information



Ski Yellowstone guidelines

Yellowstone National Park, encompassing 2.2 million acres, is one of the world's premier wilderness areas. Most of the park is backcountry and managed as wilderness; many miles of trails are available for skiing.

However, there are dangers inherent in wilderness: unpredictable wildlife, changing weather conditions, remote thermal areas, deep snow, open streams, and rugged mountains with extreme avalanche danger. You have chosen to explore and experience the land on its own terms, but there is no guarantee of your safety. Be prepared for any situation! Carefully read all backcountry guidelines/regulations, and know the limits of your ability.

All unplowed roads and trails are open to cross country skiing and snowshoeing; on unplowed roadways used by snowmachines, keep to the right to avoid accidents.

Most trails are marked with orange metal markers attached to trees. Few streams have bridges. Parties venturing into the backcountry should carry a USGS topographic map

and a compass, and know how to use them. Even on a well-marked trail, it is easy to get lost in a "whiteout" or blizzard. Only skiers thoroughly familiar with the area should attempt off-trail travel. When planning your trip, get specific information on conditions from rangers at a ranger station or visitor center.

Park elevations with adequate skiable snow range from 7,000 to 10,000 feet. Skiers and snowshoers who live at lower elevations should take a short day or overnight trip to test your capabilities before attempting longer outings.

To preserve Yellowstone's backcountry and enhance your wilderness experience, the National Park Service has established regulations and guidelines (see pages 2, 5). **A non-fee permit is required for all overnight trips in the Yellowstone back-country.** Contact a park ranger at a visitor center or ranger station before you begin a ski trip—whether for a few hours or several days.

Ski gear guide

Choose skis and boots made for touring or mountaineering. Narrow racing skis won't give you enough surface area to break trail. Low shoes won't give you enough ankle support, and track is set only on a few Yellowstone trails. Before you rent or borrow equipment, check for fit and suitability for wilderness use. Equipment that fits both you and park conditions can make or break your trip.

Winter temperatures are severe in Yellowstone but you can be comfortable and confident if you are properly dressed. Prepare for changing conditions by wearing clothes in several adjustable layers. It is as important to prevent overheating as it is to prevent chilling.

Be sure your clothing includes a windproof hooded outer layer with wool or other insulated garments underneath. Wool or synthetic trousers and long underwear will help keep your legs warm and dry in deep snow. Wind or rain pants are lightweight and provide extra warmth on windy days. Avoid cotton jeans and sweatshirts. Thick wool socks and gaiters or overboots help keep your feet warm and dry. Wear gloves or wool mittens with shells that breathe to allow moisture to escape from sweaty hands.

Since you lose more heat from your head than from any other part of your body, wear a facemask-style stocking cap or parka hood when you need maximum protection. Dark sunglasses are a must for sunny days. High altitude sunlight reflected from snow is much more intense than at lower elevations; snowblindness may occur if sunglasses are

not worn. Apply sunscreen lotion to exposed skin to avoid painful sunburn.

Each ski trip will teach you what works best for you. Discuss your plans with rangers at visitor centers and ranger stations. Staff at the Old Faithful and Mammoth Ski Shops can help you choose gear to match your ability and the conditions.

Trip planning should include allowances for limited daylight, snow conditions, temperature extremes, and the number of people in the group and their experience and physical condition. Overnight ski and snowshoe trips during December and January are difficult due to short days (8:30am-5:00pm), temperature extremes and soft snow.

On day trips consider taking some or all of these items to increase your safety:

extra clothing	compass
matches or lighter	snack food
water	ski repair kit
map	

Skiers who are planning extensive backcountry trips involving overnight camping should carry all of the above and the items below:

Backpack	Stove and pots
Sleeping bag (7 in. thick min.)	Easily prepared food
First Aid kit	Shovel
Avalanche cord	Maps
transceiver	Repair parts and
Compass	tools for skis,
Small tarp	stove and pack
Tent or bivouac bag	Knife
Closed cell sleeping pad	

Skiing safety

1. Evaluate your party's capabilities. Plan your outing so that the weakest group will enjoy and survive it.

2. Learn about your equipment's capabilities and weaknesses and be prepared to repair it.

3. Never closely approach geysers, hot springs or mud pots. You may fall through overhanging snow ledges or thin crust. Do not leave designated trails in geothermal areas.

Beware of icy conditions on downhill grades leading into thermal areas. Side-step or walk down the hill rather than risk skiing out of control into a boiling pool.

4. Avalanches are possible on hillsides or in canyons with slopes of 25-85%. Slides occur most frequently after heavy snowstorms or during warm periods.

Avalanche hazard can be high on roads between the East Entrance and Fishing Bridge Junction, on Dunraven Pass, on trails in the Cooke City vicinity, and in many areas of the backcountry. Learn about avalanche mechanics, safe travel methods, and rescue procedures.

5. When crossing frozen lakes, use extreme caution and check ice thickness by prodding with a ski pole. Ice, snow covered or not, may be thin, especially near inlets, outlets, and waters warmed by thermal activity. Crossing rivers may be dangerous; some have bridges and some do not. Ask a ranger about local crossings.

6. Do not approach wildlife. All wild animals are unpredictable; if they charge, you can't outrun them in deep snow. If they run, you are forcing them to use energy they need to survive.

7. Fires during the summer of 1988 burned near or across many ski trails and destroyed the trunks and root systems of many trees, creating **hazardous standing snags which could fall with little warning.** Skiers—be alert for this possibility, and, while in burned areas, stay on established trails.

8. Exertion in dry mountain air can dehydrate you. Carry and drink two quarts of water a day. Carry gear to melt water from snow or dip it out of a stream from a safe distance with a ski pole. Boil water from lakes or streams to reduce the chance of infection.

9. Learn as much as you can about winter survival. Talk with park rangers before you leave on any trip. Many good books are also available on this topic.

10. Basic ski etiquette: yield to those going downhill when skiing uphill on trails.

11. Hikers: please do not walk in ski tracks.



Bison in the Yellowstone ecosystem

Wild, free-ranging bison have been a part of the Yellowstone landscape since prehistoric times. Primarily because of poaching and market hunting, the bison population declined until just after the turn of the century when less than 50 bison were known to exist in Yellowstone National Park.

In this century, bison populations have made a remarkable recovery, now numbering over 150,000 animals in private and public herds nationwide. Bison are *not* listed as federally endangered or threatened species. For the 1997/98 winter, the Yellowstone bison population numbers about 2,200. The current population is significantly lower than last year (3,000–3,500 animals), when it was the largest wild, free-ranging (unfenced) population in the world.

Maintaining a wild, inherently nomadic bison herd can present problems. Bison do not recognize boundaries and sometimes move to adjacent public and private land, especially during the winter. Increased numbers of bison, weather conditions, and human activities all affect distribution of animals; attempts to manipulate bison movements by hazing or herding have met with very limited success.

Unfortunately, early in this century, bison were exposed to brucellosis, probably from domestic livestock. It was first detected in Yellowstone bison in 1917. Representatives of the livestock industry have concerns about the possibility of brucello-

sis transmission from bison to cattle. While no documented case exists of wild, free-ranging bison from Yellowstone transmitting brucellosis to domestic cattle, the small risk of transmission is of concern.

An Interim Bison Management Plan was completed and approved in August 1996. As provided for in the Interim Bison Management Plan, the NPS and State of Montana used a variety of methods along the north and west boundaries of the park to limit the distribution of bison and to maintain separation of bison and cattle on public and private lands. The primary management action was capture of bison, near the boundary or outside of Yellowstone National Park, and shipment to slaughterhouses. The State of Montana allowed some sero-negative bison on certain public lands, outside of Yellowstone National Park in the West Yellowstone area. Additional bison were allowed outside the park on public lands northeast of Gardiner, Montana where cattle are not grazed. Last year's severe winter weather conditions and deep crusted snow made high elevation winter range forage unavailable to bison inside Yellowstone National Park. Consequently, substantial numbers of bison moved to lower elevation wintering areas on primarily public and private lands outside the park in Montana. As part of the interim plan, over 1,100 were removed from the ecosystem, most being sent to slaughter or shot in the field and a small number being used for approved research projects.

As a result of last year's management actions, the National Park Service and U.S.D.A Animal and Plant Health Service have proposed adjustments to the interim plan to reduce the number of bison potentially killed as part of the interim management actions this winter. These adjustments include capturing, holding during the winter, and releasing in spring those bison not exposed to brucellosis at the Stephens Creek facility near Gardiner Montana, instead of shipping them to slaughter. Another proposed adjustment includes allowing low risk untested bison (calves, yearlings, and males) to occupy public lands in the West Yellowstone area during winter instead of being shot in the field. The Interim Plan is designed to maintain a wild, free-ranging bison population and to assist the State of Montana in maintaining its brucellosis class-free status. The Interim Plan will be implemented until a long-term bison management plan and environmental impact statement (EIS) is completed. A draft is scheduled for January 1998, with a final EIS anticipated in fall 1998.

Copies of the Interim Bison Management Plan and related documents are available from the Yellowstone Center for Resources, P.O. Box 168, Yellowstone National Park, WY 82190, (307) 344-2213. To become informed and involved in the development of the EIS, write to the above address, c/o Bison EIS, or call the above number and request to be placed on the Bison EIS mailing list.

More about bison...

Bison are one of the most commonly seen animals in the park. In May and June, newborn bison calves can be viewed in the Firehole, Lamar, and Pelican Valleys. The small, gangly, reddish-colored calves stay close to their mothers and other young cows for protection from predators, such as wolves.

In summer bison feed on grasses and sedges in Yellowstone's lush, high-elevation meadows. Bison also create wallows by lying on the ground and kicking up dust, perhaps to deter insects. These patches of bare ground then provide resting places for the bison themselves.

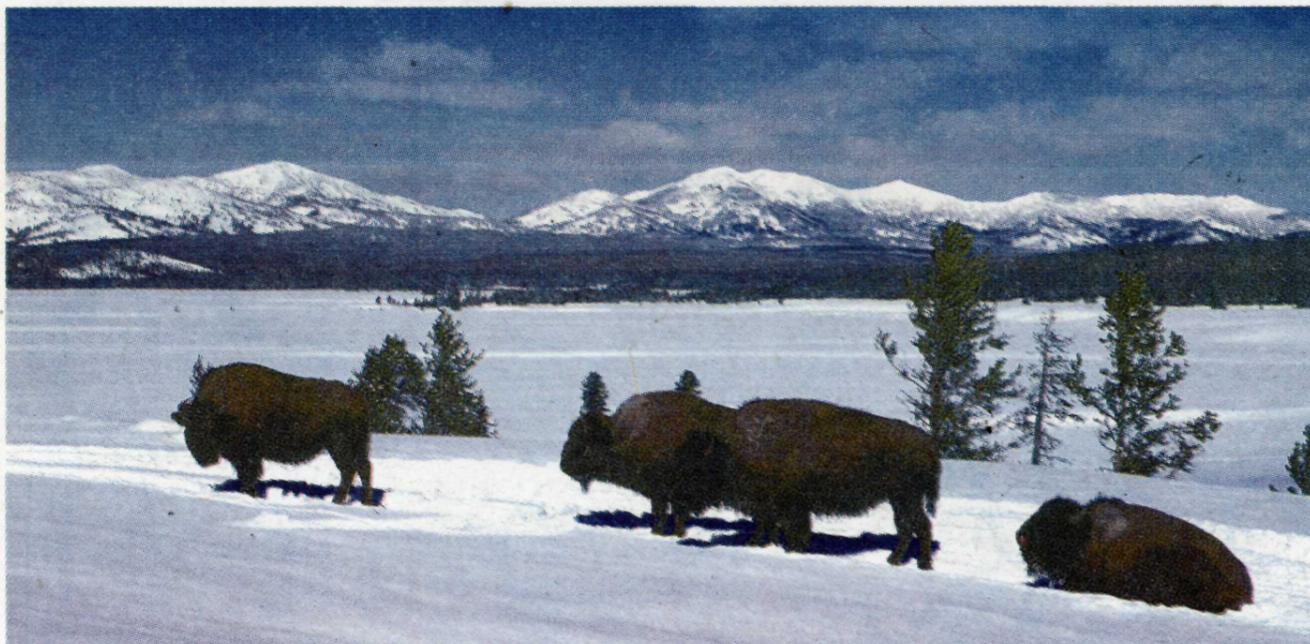
During July and August, the bison mating season—or rut—occurs. At other times of the year, adult male bison often stay separate from the females and calves. But during the rut, vast herds of bison can be seen and heard snorting and socializing in the upper Lamar and Hayden valleys. Male bison competing for females often fight and gore each other, sometimes causing injury or death. Grizzly bears and other scavengers feed on and defend these carcasses from competitors.

In winter, bison migrate to geothermal areas and winter range at lower elevations. Winterkill death of the old, young, and sick may occur from the combined effects of climatic stress, food availability, and the condition of individual animals.

When walking or skiing, give bison a wide berth. Along roadways, watch the bison safely from your snowmobile or car!

Your opinion counts

Yellowstone is no stranger to complex, important, and often controversial issues. If you have comments on issues which affect the park and/or the Greater Yellowstone Ecosystem, please send them to Superintendent Mike Finley, P.O. Box 168, Yellowstone National Park, WY 82190.



Habituation spells disaster

Yellowstone offers unique opportunities to view wildlife in their natural environment. Some birds and mammals live near park roads and developed areas, where they are particularly observable. However, this increases the likelihood that some individuals will become habituated—that is, used to people. Habituated wildlife are misleading—they may appear to be highly tolerant of humans, but they are still wild and unpredictable.

Approaching wildlife at close range can cause the animals stress. Be observant—many animals will show signs of increased alertness or fear. The animal(s) may move away; heads may perk up, or eyes widen and focus on nearby humans; the animal may flatten its ears, flare its nostrils, change body direction, stop eating, or rise from a resting stance.

Habituated wildlife can quickly become conditioned to human foods. Swans, coyotes, bighorn sheep, ground squirrels, bears, ravens and other species have all demonstrated "begging" behavior in Yellowstone. This apparently harmless activity is dangerous for both you and the animal(s). When they come to the roadside to obtain food, animals often are hit by vehicles, or become exhausted chasing traffic.

Human foods in an animal's diet may result in tooth decay, ulcers, digestive problems, or failure to accumulate adequate fat reserves for the winter when food is scarce. Beggar birds and wildlife may become aggressive, and have occasionally injured park visitors. Please enjoy the opportunity to view and photograph park wildlife in their wild, natural state. The park is not a zoo; animals live and die based on their

species' adaptations and their individual ability to survive in this environment. Respect park wildlife—never approach too closely, and be alert for changes in wildlife

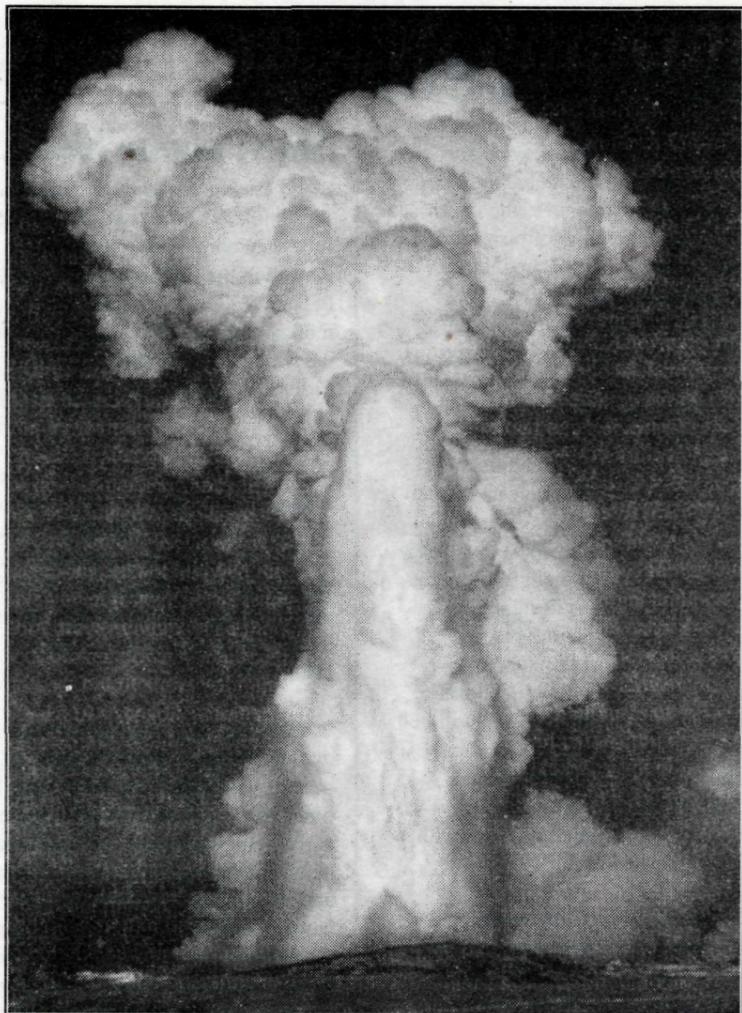
behavior that could lead to a problem, for you or for them. **All park animals are wild and potentially dangerous. Never feed or approach any park animals.**

Coyotes and habituation

The coyote—perhaps Yellowstone's most common predator—is often seen traveling through the park's wide open valleys. Coyotes may live in packs, or may range alone in search of prey or carrion to scavenge. They eat a variety of small mammals, but they can also hunt and kill larger prey; packs have been observed bringing down adult elk in Yellowstone.

Coyotes normally avoid people but are wild and unpredictable. During recent winters, instances of coyote aggression toward humans, including one which involved an actual attack, were reported. Habituation most likely played a role in this unusual behavior.

We are experimenting with scaring unwary coyotes away from visitor use areas. Those animals that continue to pose a threat to themselves or to humans may be translocated to other areas of the park, or even removed from the park ecosystem. **If you see a coyote or other animal which appears to be unwary of people, please report it to a park ranger.**



NPS file photo

Winter magic

Winter is both beautiful and terrible, a time of crystalline perfection but also the season when death takes the largest portion of its due. The first permanent snows of winter usually fall in early November. They eventually accumulate to an average depth of four feet. Low places fill in and fallen trees are covered over. The contours of the land become more gentle and rounded and the landscape is transformed into a snowscape.

—from *Yellowstone in Three Seasons* by Steven Fuller and Jeremy Schmidt.

Snow and cold transform Yellowstone's 2.2 million acres in ways both obvious and subtle. At first, the effect is one of simplification: the ground appears to be covered by a monotonous white blanket.

Spend more time and that illusion is shattered. Cold, wind, and light shape and color snow in infinite textures and tones. Another force is at work here, too: heat, rising from deep within the earth. Yellowstone's heat source is uninfluenced by the change of the seasons, and thermal activity—geysers, hot springs, mud pots, and fumaroles—continues nonstop. However, when heat meets cold, the clash creates incomparable beauty. Through time, Yellowstone has been shaped by fire

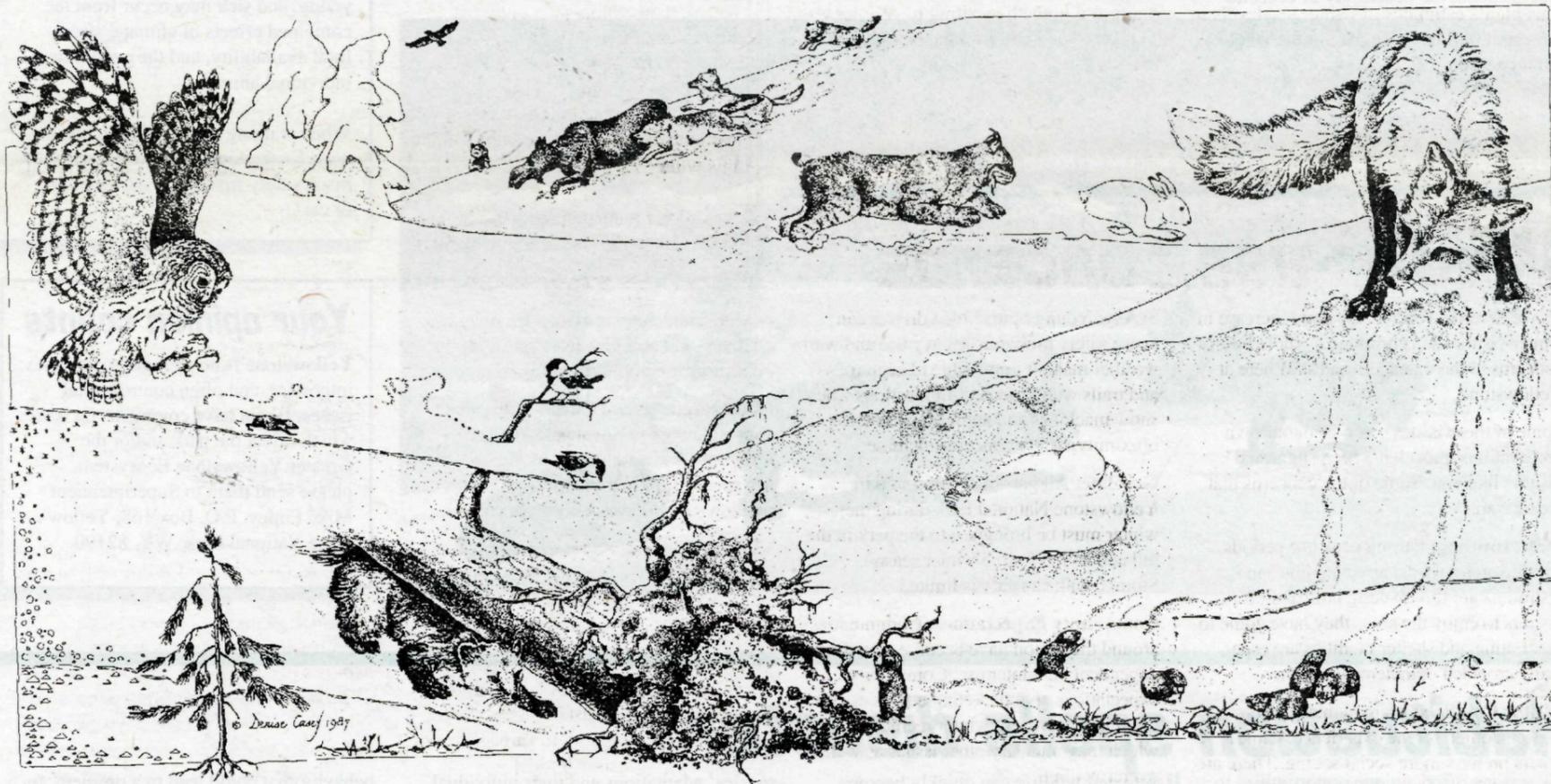
and ice. During winter, these ancient and ongoing forces seem compressed into a snapshot of geologic time.

Snow and cold transform more than the landscape. All living things change somehow to adapt to harsh conditions. For some, this means simply leaving the area for the duration of winter. Others enter states of dormancy or considerably reduced activity. Still others move to different habitat, grow thicker coats, change colors, and alter feeding habits to survive.

Winter takes life and gives life. Animals perish but death gives sustenance to other animals. Plants and animals depend on the reservoir of water locked in the snowbanks and freed over the months of spring, summer, and fall. Over the long term, winter is a major regulator of natural systems, an essential part of the cycle of building and destruction. Winter helps maintain a balance between living and nonliving things.

In the wildness of Yellowstone it is possible to see not only the beauty of the season but to begin to comprehend the sublime necessity of its harshness.

Life in the snow—some fascinating stories



Look closely, and you will see that the snowscape tells some fascinating stories. The following description relates to the illustration above, roughly left to right.

1. Many different types of snow pile up like a layer cake to make the snowpack. Here the bottom layer is composed of large, angular, bell-shaped crystals of temperature-gradient snow, weakly bonded to each other and therefore easy to dig through. An ice crust (melted and refrozen earlier in the winter when this was the surface of the snowpack) marks the upper limit of depth hoar, or snow with little cohesion which has metamorphosed under graded temperatures at depth. The middle layers of the snowpack are all rounded, strongly-bonded grains of equitemperature snow, while the top few inches are light, new snow, unchanged by metamorphism and still showing its original crystal structure.

2. Shrews occasionally forage on the snow surface for wind-blown insects. Whether this shrew becomes a meal for a great grey owl may depend on the texture of the uppermost snow layer. Owls rely on both sight and sound in locating their prey. If the snow is "noisy" (with an icy crust, for example), this owl will be more likely to catch the shrew than if the surface is soft, sound-muffling powder.

3. Deep, soft snow and icy crust both favor smaller animals, which stay on the surface, and make movement difficult for large heavy animals, which sink in or break through. Under such conditions wolves are more likely to bring down an exhausted cow moose, but a snowshoe hare is more likely to escape a pursuing lynx. If the snowpack is firm, the situation is reversed, and the larger animals have the advantage.

4. Unlike many other small rodents, voles do not hibernate, but remain active all winter in extensive tunnel systems beneath the snow. Voles usually stay near the ground surface since that is where the warmest temperatures and most plentiful food supplies are found (here a vole is raiding a squirrel midden under a fallen tree).

However, if the snowpack loses its oxygen permeability due to a heavy wet snow or ice crusts, voles are forced to dig ventilator shafts up to the snow surface. An alert red fox, listening and smelling at the shaft openings, will hunt more successfully during periods of impermeable snow. A pine marten, using its nose as it burrows beneath the snow, will catch more voles if the snow is loose and permeable to smell.

5. Ptarmigan (and grouse) seek shelter within the snowpack at night, flying straight in at full speed if the snow is soft. In harder snow, they "walk" in, digging with their specially adapted claws.

—Illustration by Denise Casey.
—Adapted from text and concept by Kim Fadiman, a "freelance explainer," who has taught natural science courses at the Teton Science School and elsewhere.

This article and artwork have been reprinted with the permission of *Biologue: A Journal of the Interpretation and Discovery in the Life Sciences*, vol. 2, no. 2, Winter 1988, "Looking at Winter." Back issues of *Biologue* are available from the Teton Science School, P.O. Box 68, Kelly, WY 83011, (307) 733-4765.

The winter use dilemma

Many of the staff who live in Yellowstone during the winter consider this their favorite season. Wildlife is more visible, the scenery is spectacular covered with snow, and thousands of thermal features are at their most dramatic, wreathed in delicate ice formations and billowing steam.

We hope your visit is safe and memorable, and that Yellowstone lives up to your expectations. But while you are here, we would like you to think over a vexing dilemma we all face. The focus of our concerns revolves around the extraordinary wonders we all enjoy and their need for special consideration in the winter.

For all its beauty, winter is a time of extreme hardship for many of Yellowstone's wild residents. Winter controls the size of many animal populations, and those populations have evolved to survive in an extreme environment.

But human use of the park has skyrocketed in the past 20 years, and though we humans try very hard to use the land lightly, we have many effects that we only now are beginning to understand. As well, we have effects on each other; the more people there are, the less each person can be assured of the quality experience for which Yellowstone is so famous.

In 1990, after extensive public involvement, we issued a Winter Use Plan, aimed at ensuring the protection of park resources and the quality of the visitors' experience. This plan's estimates of winter use levels in the year 2000 were reached in the 1992-93 winter season.

Today, scientific studies are beginning to reveal the extent of our impacts upon resources such as air quality. Budgetary realities are that we no longer have staff or resources adequate to care for the growing winter crowds. Individuals and organizations are expressing concerns that the experience is slipping in quality. We in Yellowstone are actively seeking ways to address these problems.

In conjunction with Grand Teton National Park and the six national forests surrounding the parks (Gallatin, Targhee, Bridger-Teton, Beaverhead, Custer, and Shoshone), Yellowstone has launched an initiative to determine how best to manage winter use in the long run.

Among other things, we have contacted some of you with winter use surveys to learn more about your experiences here. We are continuing our research on recreational impacts on the park, and we are communicating extensively with our neighbors, our concessioners, and a variety of user groups.

We all want the chance to enjoy Yellowstone at its best, and we all want Yellowstone to last in good shape, not only for our next visit but also for future visitors. We hope you will be able to assist us in achieving those goals.

If you would like to comment about your winter experience in the national parks or forests, please do so at any of the warming huts or visitor centers in the parks or when you return home by writing to: Winter Use, P.O. Box 168, Yellowstone National Park, WY 82190.

Snowmobile studies underway

Snowmobiles are powered by two-stroke engines, which have extremely high power-to-weight ratios and operate well in sub-zero weather but are inherently polluting. Two-stroke engine technology mixes oil and gasoline in the combustion process. This results in significant amounts of burned and unburned fuel and oil emissions. Snowmobiles produce much more carbon monoxide and particulates than modern automobiles and may contain significant quantities of air toxics.

The National Park Service (NPS) is concerned with how snowmobile emissions affect the health of visitors, park service employees, and natural resources. The NPS initiated air quality monitoring in the winter of 1994-95. Monitoring efforts continued the following two winter seasons. This monitoring indicates that on peak-use days that coincide with cold, calm weather, high levels of carbon monoxide were noted. To further understand these results and corresponding impacts, the NPS is continuing to conduct research on snowmobile emissions.

Some oil companies have recognized these concerns. For example, Conoco Oil developed a biodegradable 2-cycle motor oil that reduces the oil component of the emissions and breaks down more easily in the environment. Yellowstone has used this oil in its administrative snowmobile fleet for the past two winters. The Conoco oil, other low-particulate oils, and oxygenated fuels were tested by the Southwest Research Institute last winter. Tests will continue this winter.

In addition to the alternative fuels and lubricant studies, three other studies will

address winter air quality issues during the 1997-98 winter season. The University of California at Davis will conduct a study to determine the effects of human exposure to ambient snowmobile emissions. A social science study conducted by the University of Montana and the University of Vermont will expand on last winter's work to develop appropriate indicators of carrying capacity such as air quality. This winter, a more detailed survey will include visitor reactions to emissions and willingness to change use patterns to protect the park. Pilot-level studies by the NPS and the U.S. Geological Survey revealed elevated levels of ammonia, sulfates, and total organic carbon in areas near groomed roads. The work will be expanded to better understand if pollutants in the snow are entering streams and lakes in measurable quantities.

These studies will help define how transportation emissions react in the fragile environment and impact natural resources. This information would allow the NPS to determine appropriate, measurable indicators for monitoring air quality, establish appropriate standards to ensure that air quality does not become unacceptable, develop management actions to ensure that the standards are not exceeded, and implement those management actions.

Another concern to the NPS is how groomed roads affect wildlife movements. The Biological Research Division of the U.S.G.S., Montana State University, and the NPS will begin studies this winter of bison habitat use and movements within Yellowstone. This research will help the park better understand the effects of groomed roads on wildlife.

Winter use concerns

As we described above, the rapid increase in winter visitor use is bringing a whole host of concerns to the managers and staff here at Yellowstone.

Some of these issues come from our own observations; most have been suggested by visitors like you. Some of the concerns that we face are:

Overcrowding: During peak use periods, parking areas, roads, warming huts, and restrooms are full, making it difficult for visitors to enjoy the areas they have come to see. Eating and shelter facilities are especially crowded in inclement weather.

Visitor Conflicts: Many winter visitors expect a quiet, serene experience, while others prefer a more social setting. There are often conflicts where different and diverse uses exist (snowmobilers and cross-country skiers, for example).

Safety: Young or unskilled drivers can cause safety problems. Heavy use and warm weather make it impossible to keep roads and trails well groomed. In locations where snow machines and autos come in close proximity, safety concerns increase.

Gasoline: All gasoline that is sold in Yellowstone National Park during the winter must be brought into the park in the fall and stored for the winter season. Storage tank capacity is limited.

Community Expectations: Communities around the region have become increasingly dependent on winter use. Community expectations and marketing efforts assume unlimited growth in winter recreation use, which may intensify other issues as well as overcrowding.

Resource Damage: Rapidly increasing winter use may be adversely affecting

wildlife and other resources. Snowmobile exhaust and noise levels raise health concerns for employees and visitors.

Decreased Access: Outside the parks, snowplowing to private property has displaced skiers and snowmobilers on some roads and trails. Alternative trails and parking areas have not been provided.

Visitor Behavior: Some visitors are unaware of wilderness mandates, impacts to resources, safety issues (such as avalanche danger), and appropriate behavior.

Operational Concerns: At the major developed areas in Yellowstone, all solid waste and sewage must be stored for the winter. Storage capacity in garbage trucks and sewage lagoons is limited.

road closure would allow the NPS to better assess road grooming activities on bison and other wildlife movement, along with changes in visitor use patterns.

The agreement did not pre-determine a decision to close any road in Yellowstone National Park. The agreement did commit the park to prepare an environmental assessment and obtain public comment before a decision is reached. No matter what decision is reached on a possible road segment closure, the park will remain open for oversnow travel. All major features in the park will be accessible from park entrances.

Interagency Winter Use Analysis

In June 1997, the National Park Service and U.S. Forest Service released a report *Winter Visitor Use Management: A Multi-Agency Assessment* that provides information on winter use in the parks and forests in the Greater Yellowstone Area. The report makes no recommendations or decisions, but provides park superintendents and forest supervisors information that they may use in future planning.

The report was available for public review until September 30, 1997. Park and forest staff are reviewing the comments received on the draft report, and they will be incorporating those comments in the final report. A summary of the draft interagency report is available on the internet: www.nps.gov/yell/plan3.htm. Copies of the draft report may be reviewed at park and forest offices in the Greater Yellowstone Area.

Winter Use Lawsuit

Some of the winter use concerns explained in the accompanying articles prompted a number of organizations and individuals (led by the Fund for Animals) to file a lawsuit against the Federal government in May 1997 regarding winter use in Yellowstone and Grand Teton national parks.

On September 24, 1997, a settlement agreement was signed by the plaintiffs, Department of Justice, and the National Park Service. The settlement agreement was approved by the judge on October 27, 1997.

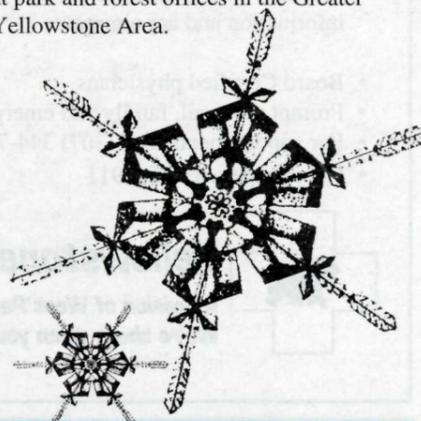
Several groups filed petitions with the

court to intervene on behalf of the government. The intervenors also petitioned the court to set aside the settlement agreement and transfer jurisdiction to the District Court in Montana. The judge denied the petitions.

There are two key provisions in the settlement agreement:

- The NPS committed to prepare a new Winter Use Plan and Environmental Impact Statement for the parks. Public scoping is slated for April 1998.

- The NPS committed to prepare an environmental assessment to evaluate a possible, temporary closure of one road segment in the park. A temporary winter



Yellowstone's weather—predictably unpredictable

Visitors to Yellowstone National Park may be surprised to encounter "winter" weather any time of year. If unprepared, the consequences range from uncomfortable and inconvenient to life-threatening. During the coldest months, wind and snow can kill if rules of nature are ignored and protective clothing is not worn. The information presented here describes the "normals" and extremes of Yellowstone's year round climate and may be used as a guide in planning a visit to the park. Obtain information on current weather conditions and forecasts at visitor centers or ranger stations when planning outdoor activities.

In summer, a general rule is that the higher the elevation, the cooler the temperatures and the greater the moisture and shower activity. In winter, precipitation is heavier at the higher elevations and in the southern portion of the park; the coldest temperatures occur in the mountain valleys.

The average maximum temperatures for the park during the summer months are in the 70s. Readings occasionally reach the 80s, and rarely the 90s, at the lower elevations but there is no record as high as 100° F at any place in the park.

Summer nights are invariably cool, and temperatures drop into the 30s and 40s on the average at most places before sunrise. The lowest recorded temperature during the summer is 9 degrees, on August 25, 1910 at Canyon.

Winters are cold with temperatures well below freezing most of the time. In January, which is usually the coldest month, temperatures on average range from near zero at night to the middle 20s in the early afternoon. Values frequently are well below zero and all areas of the park have

recorded at least -40 degrees at some time. The lowest recorded temperature is -66 at the West Yellowstone station on February 9, 1933. On the other hand, there are occasional mild periods during the winter when daytime temperatures reach into the 40s.

Annual precipitation varies from an average of just under 14 inches at the Lamar Ranger Station in the northeast portion of the park to around 38 inches at Bechler Ranger Station in the southwest corner. For most places at the lower elevations, June is the wettest month with averages ranging from two to three inches.

Weather observations were started at Yellowstone National Park Headquarters—Mammoth Hot Springs—by U.S. Army personnel in January 1887; a Weather Bureau station was established in 1903. The observation site is located in the extreme northern part of the park on the mountain slopes above the Gardner river. Mountains to the east, south, and west rise 2,000 to 3,000 feet higher than the valley. The station itself, being at 6,241 feet above sea level, is lower than most of the park, which varies from 7,000 to 8,500 feet, with several ridges and peaks going up to 11,000 feet or more.

Because of the lower elevation and mountain barriers which trap moisture-laden air at this headquarters site, temperature will average about five degrees warmer and precipitation less than at other locations in the park. The valley location is also favorable for lighter winds.

Snowfall is quite heavy over the mountains. For most of the park which lies between 7,000 and 8,500 feet, annual snowfall averages close to 150 inches. At higher elevations, amounts are normally well over 200 inches annually, and in some locations, over 400 inches. Of course, amounts vary from year to year. Occasionally during summer, cold air from western Canada will invade this area, causing snow. While not common, there are records of several inches in the summertime.

Yellowstone's weather is well known for its unpredictability and sudden changes. Be prepared for a range of conditions, especially if you will be out for several hours or overnight. See the park map on page 12 for locations of warming huts and phones. Careful, thorough pretrip planning is the key to an enjoyable winter visit to Yellowstone.

Wind chill chart

Wind Speed in MPH	Estimated Actual Thermometer Reading, °F											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
Wind speeds greater than 40 MPH have little additional effect.	Little Danger (for a properly clothed person)			Increasing Danger				Great Danger				
	Danger From Freezing Of Exposed Flesh											

Chambers provide gateway information

Facilities and services are also available in communities outside Yellowstone. For information, contact Chambers of Commerce in:

- | | |
|--|-----------------------------------|
| Gardiner, Montana (406) 848-7971 | Red Lodge, Montana (406) 446-1718 |
| Livingston, Montana (406) 222-0850 | Billings, Montana (406) 245-4111 |
| Bozeman, Montana (406) 586-5421 | Cody, Wyoming (307) 587-2297 |
| West Yellowstone, Montana (406) 646-7701 | Dubois, Wyoming (307) 455-2556 |
| Cooke City-Silver Gate, Montana (406) 838-2272 | Jackson, Wyoming (307) 733-3316 |
| | Idaho Falls, Idaho (208) 523-1010 |

Expedition: Yellowstone!

The National Park Service continues to offer a curriculum for upper elementary grades called *Expedition: Yellowstone!* Through this curriculum, students learn about the park either by studying it at their school or by combining classroom work with a trip (an "Expedition!") to Yellowstone. This residential program, taught by park ranger-naturalists, operates on a fee basis in the spring and fall.

Appropriate for 4th, 5th, and 6th grade levels, the curriculum materials consist of a teacher's workbook and a storybook entitled *Expedition Yellowstone, A Mountain Adventure*. Curriculum supplements on fire, wolves, and water are also available. For more information, please fill out the coupon below.

Name _____
 School _____
 Address _____
 City, State, Zip _____
 Phone: (____) _____

Leave this coupon at any park visitor center or mail to: *Expedition: Yellowstone!*, Box 168, Yellowstone National Park, WY 82190

CELLULARONE®

CellularOne of Cody is now serving Yellowstone with cellular service. Share your Yellowstone experience with a friend!

Comprehensive Medical Care in a Wilderness Setting...

Mammoth Clinic

- Open weekdays 8:30am-1:00pm and 2:00-5:00pm; closed Wednesday afternoons. Phone (307) 344-7965.

Old Faithful Clinic

- Staffed December 26, January 9, January 23, February 13, February 27, and March 6. These dates are subject to change. Call Mammoth Clinic for specific information and appointments.

- Board Certified physicians
- Prompt personal, family and emergency medical care
- For appointments, call (307) 344-7965
- For emergencies, dial 911



Yellowstone Park Medical Services

A division of West Park Hospital—Cody, Wyoming
 We're there when you need us!

Yellowstone Park Medical Services

West Park Hospital, Cody, Wyoming, through its Yellowstone Park Medical Services Division, has been offering medical care to Yellowstone's visitors, employees and residents since 1980.

A board certified family practitioner provides year-round health care to the Yellowstone Park community, including biweekly visits to Old Faithful during the snowmobile season. Experienced registered nurses and office staff complete the team offering courteous, professional family and emergency medical care.

In the summer, the operation grows to meet the needs of the park's increased number of visitors and the employees who serve them. Outpatient services are provided at Lake Hospital and Old Faithful Clinic, as well as at Mammoth Clinic.

Lake Hospital is also an acute care facility with ten inpatient beds, clinical laboratory, pharmacy, radiology and 24-hour ambulance and emergency services. The staff is assembled from highly qualified, experienced professionals from across the country.

For information on employment for the 1998 season (both professional and nonprofessional positions are available), send a resume to: Yellowstone Park Medical Services, 707 Sheridan Avenue, Cody, WY 82414 or call 1 (800) 654-9447, ext. 461.

Amfac Parks and Resorts— committed to hospitality excellence

Amfac Parks and Resorts has been Yellowstone's principal concessioner since 1979. Amfac Parks and Resorts operates the park's lodging, RV park, four campgrounds, restaurants, cafeterias, snack shops, cocktail lounges, gift shops, dinner cookouts, horse corrals, motorcoach sightseeing tours, self-guided auto tour rentals, and a full service marina. For details on the **Winter in Yellowstone!** operation, see the advertisement at right.

Amfac Parks and Resorts is committed to hospitality excellence, and will do the utmost to assure that your visit to this park is a memorable experience; your comments are welcome.

Reservations for lodging, activities, and dinner at five hotel dining rooms are strongly recommended. Please inquire at any lodging front desk or activities desk as soon as your plans are made. Park visitors

are advised to *carry along appropriate outdoor gear* when participating in any outdoor activity.

Amfac Parks and Resorts also operates visitor facilities at Zion, Bryce Canyon, North Rim-Grand Canyon, and Everglades National Parks; Mount Rushmore National Memorial; and Scotty's Castle at Death Valley National Monument. Amfac Parks and Resorts reinvests millions of dollars into improvements and new concession facilities at these locations as well as in Yellowstone.

Employees are one of Amfac's greatest assets. Amfac hires more than 3,700 seasonal employees in Yellowstone alone. If you would like to receive an application to join this team, please call (307) 344-5324.

EXPLORE YELLOWSTONE This Winter Season

A winter visit to Yellowstone will provide you with an unforgettable vacation where cross-country skiing and snowcoach touring are without equal. Enjoy all that Yellowstone has to offer during this season...wildlife in abundance, frozen lakes, icy waterfalls, the Old Faithful Geyser, thousands of other thermal features, and much, much more.

For more information, contact any hotel front desk or activity desk, or call (307) 344-7311.



Authorized Concessioner of the National Park Service
AA/EEO

USWEST COMMUNICATIONS

As provider of telephone service to Yellowstone, the world's first National Park, we wish you a safe and enjoyable visit.



Providing electricity to Yellowstone National Park since 1959. May your visit to Yellowstone be memorable.

The Montana Power Company

Snowmobilers: YPSS offers services, advice

Prior to the invention and proliferation of the snowmobile, the roads of Yellowstone Park were seldom travelled in the winter months. The resident winterkeepers, a few hardy souls on skis and snowshoes or in snowplanes, and an occasional ranger were about the only people out there among all of the winter wildlife and scenery. The tempo has changed over the past 15 to 20 years but the unique Yellowstone winter wilderness experience is still here.

Yellowstone Park Service Stations (YPSS) has offered basic services to snowmobilers in Yellowstone since 1972. You are encouraged to play it safe out there—Yellowstone can be very unforgiving in winter. Familiarize yourself with the location of warming huts, public telephones and other services in the park

and know where you are as you travel. Dress intelligently and carry a tow rope, a flashlight, matches, an extra drive belt and spare spark plugs. Fill your fuel tank when you have the opportunity to do so. Travel at least in pairs if you can and watch each other for signs of hypothermia. Let someone know what your travel plans are, especially if travelling at night, and check back in with them when you arrive at your destination. Be on the lookout for animals on the road. Do not approach wildlife closely. The energy an animal expends running from you may seriously affect the animal's prospects for survival.

It is a privilege to be able to live and work here in the winter. All of us who do hope you enjoy your winter visit.

YPSS YELLOWSTONE PARK SERVICE STATIONS



Yellowstone Park Service Stations has been serving Yellowstone visitors since 1947, and since 1972 has served winter travelers. We offer quality petroleum products at four winter locations.

Snowmobile fuel is available at Canyon and Old Faithful December 21–March 8, at Fishing Bridge December 21–approx. March 8 and at Mammoth Terraces December 21–March 1.

Drive Belts, spark plugs and accessories are available at Old Faithful, Canyon and Fishing Bridge (Snowmobile repair services are **not** available)

Conoco, Master Card, Visa, Discover and American Express credit cards are accepted



HAMILTON STORES INC.

EST. 1915
YELLOWSTONE NATIONAL PARK

Serving the traveling public since 1915, Hamilton Stores, Inc., offers a wide variety of merchandise including Yellowstone souvenirs, gifts, film and photo supplies, souvenir T-shirts and sweatshirts, winter accessories, and groceries and food, including hot and cold beverages, beer and liquor.

Mammoth General Store is open year round to serve the traveling public, and for your convenience, is an authorized UPS shipping agent.

We are also happy to invite you to visit our on-line catalogue at: <http://www.hamiltonstores.com>

Hamilton Stores—oldest park concessioner

The 1872 Act that set the Park aside "for the benefit and enjoyment of the people, and the protection of the natural and scenic treasures therein" also granted leases for the various concessioners who served the public. For the first decade of the park's official existence, no lease to sell general store merchandise was issued. Then, in 1882, Henry E. Klammer applied for, and received, permits to provide fresh meat to camps and hotels, pasture and slaughter beef cattle, operate a dairy herd, and open a general store in the Old Faithful area of the park.

In 1915, a year after the Klammer General Store was purchased by Charles Ashworth Hamilton, horse transportation in the Yellowstone reached its zenith. Three thousand hayburners pulled Yellowstone wagons, coaches, surreys, freight wagons, and—grandest of all—double decker twenty-six passenger Tallyhos or stage-coaches. However, autos were allowed into the park for the first time that year, and Charles Hamilton quickly spotted the tire

marks in the dirt. In the next five years he acquired store concessions at Lake and Fishing Bridge, and built filling stations at each location. This was the start of what was to become the oldest privately/family owned concession in the National Park System, serving the traveling public for over 75 years.

Hamilton Stores invites you to visit its locations during the summer season for a bit of that history—most especially, the original store at Old Faithful (the Lower Basin Store) and the General Store in the Lake area. The upper store at Old Faithful and the Fishing Bridge General Store also convey rustic charm. The newest store, Grant Village General Store, was built and decorated with the craft of many Montana artisans. The general store at Mammoth Hot Springs, open year round, can also be seen in historic photos from around the turn of the century featuring horse-drawn stagecoaches and people in period dress.

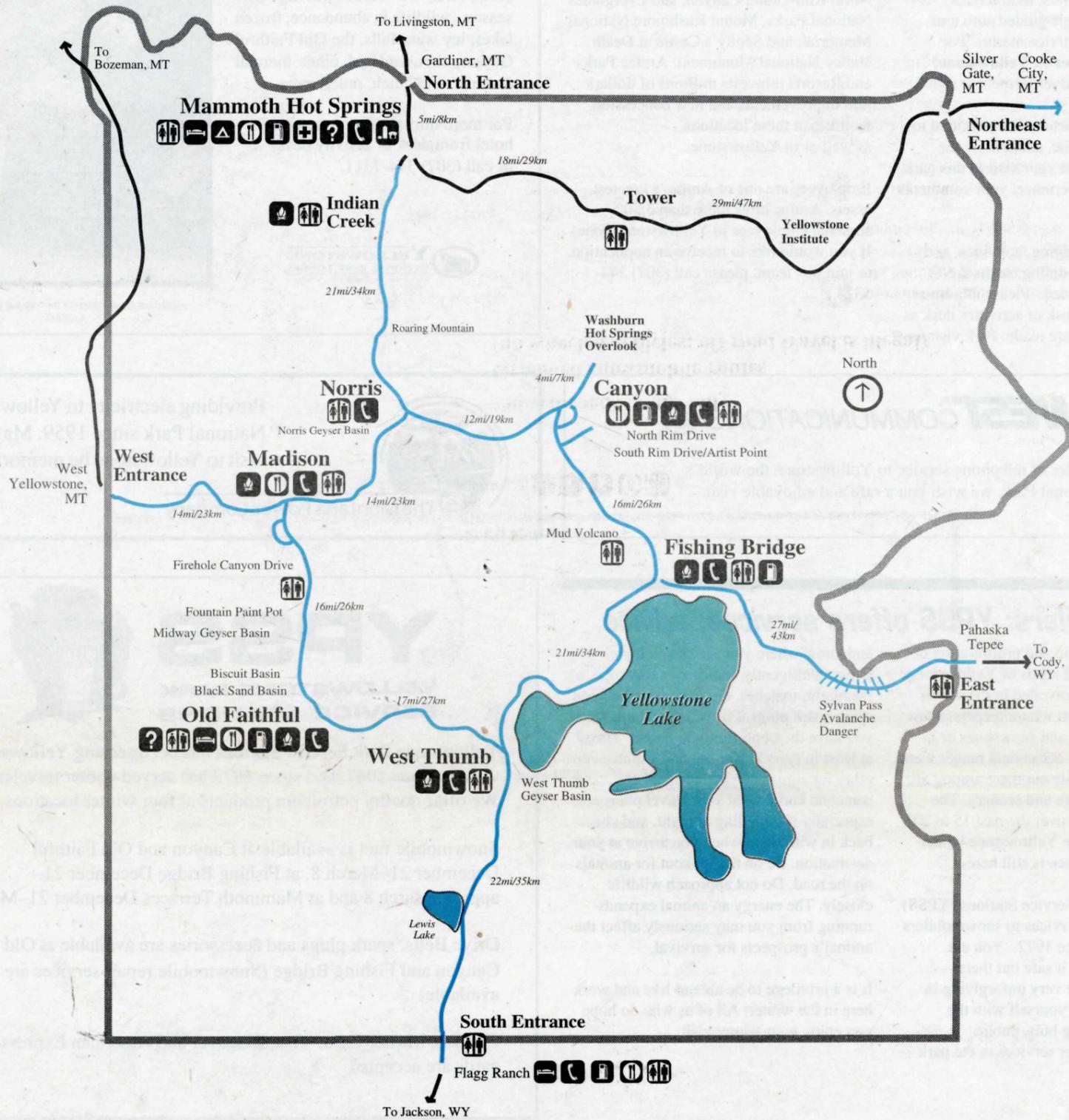
Mammoth General Store remains open year round for your convenience.

Yellowstone National Park winter facilities

Park information (307) 344-7381

TDD: (307) 344-2386

Emergency 911



Plowed roads—autos only
 Groomed snowmobile routes
 (no wheeled vehicles; off road travel is illegal)

- Visitor centers**
Mammoth Hot Springs: Open year round
Old Faithful: December 17–March 8
- Warming huts:** December 17–early March
Indian Creek, Madison Junction, Old Faithful, West Thumb, Fishing Bridge, Canyon
- Lodging**
Mammoth Hot Springs Hotel: Dec. 21–March 1
Old Faithful Snow Lodge: Dec. 17–March 8
- Telephones**
- Food service:**
Dining Rooms: Mammoth Hotel, Dec. 21–March 2
Old Faithful Snow Lodge, Dec. 17–March 8
Snack Shop: Old Faithful Four Seasons Snack Shop, Dec. 17–March 8
Light Lunches: Mammoth General Store, Open year round
Snack Bars: Madison and Canyon Warming Huts, Dec. 17–March 8
- General store**
Mammoth Hot Springs—Open year round
- Snowmobile fuel:**
Old Faithful, Canyon Junction: Dec. 21–Mar. 8;
Fishing Bridge: Dec. 21–approx. March 8;
Mammoth Hot Springs: Dec. 21–March 1
- Campground**
Mammoth Hot Springs—Open year round
- Mammoth Clinic**—Open weekdays 8:30am–1:00pm and 2:00–5:00pm; closed Wednesday afternoons; phone (307)344-7965.
Old Faithful Clinic—Staffed 12/26, 1/9, 1/23, 2/13, 2/27, and 3/6. These dates are subject to change. Call Mammoth Clinic for specific information.
- Restrooms**

Dates subject to change due to weather conditions and/or resource management concerns.

AmFac Parks & Resorts also offers full service ski shops, guided ski tours, skier shuttles, snowmobile rentals, and snowcoach tours at Old Faithful and Mammoth, and snowcoach tours/transportation out of West Yellowstone. Guided sightseeing tours, ice skate rentals, and hot tub rentals are also available at Mammoth. Dinner reservations are required; call (307) 344-7901. Reservations are strongly recommended for lodging and snowcoach tours. **For AmFac Parks & Resorts information and reservations, call (307) 344-7311.**



This map courtesy of Conoco—providing petroleum products since 1917...
 All service stations in Yellowstone offer environmentally sensitive fuels, specially formulated by Conoco to reduce hydrocarbon emissions and decrease other pollution-related problems.