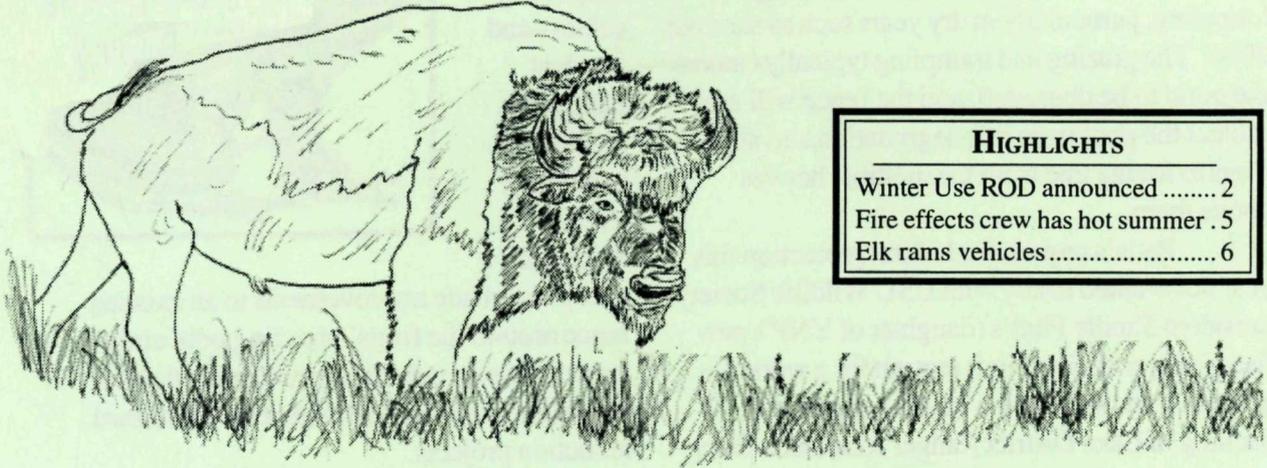

The Buffalo Chip

*Resource Management Newsletter
Yellowstone National Park
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WHILE FROGS SLEEP, VOLUNTEERS AND STAFF WORK TO PROTECT HABITAT

By Debra Patla and Dan Reinhart

As winter closes in, amphibians are seldom seen but not forgotten in Yellowstone. Thanks to an enclosure constructed in the horse pasture at Lake on October 27, the spotted frogs of upper Lodge Creek will emerge from hibernation next spring to find that one of their favorite habitat areas is protected. The new post-and-cable barrier surrounding a forest pool is the result of a collaborative effort between the Utah State University (USU) Wildlife Society, Yellowstone NP resource manager Dan Reinhart, and amphibian biologist Debra Patla. At the pool enclosed by the new fence, frogs congregate to forage and seek shelter prior to their late-summer migration back to hibernation sites in the Lodge Creek springs.

Twenty-five members of the USU Wildlife Society traveled from Logan to Yellowstone on the last weekend in October for a field trip com-

bining wildlife-watching with a volunteer work project. On Friday afternoon, still glowing from a morning of observing wolves, the students turned their exuberant energy to fence-building. In less than four hours, the group dug holes and stretched three 260-foot strands of cable to create the sturdy enclosure. Their high spirits made the task seem easy. Never doubt what can be accomplished by cooperation, good will, strong backs, and simple hand tools!

The spotted frog population of upper Lodge Creek is of special interest because of the insights it has provided about the natural history and habitat needs of this species. In the 1950s, herpetologist Fred Turner conducted an intensive study documenting population size, habitat use, and migration patterns. In the 1990s, the population was reinvestigated by Patla, who found that frog numbers have declined drastically (70–80%

reduction) largely due to human-caused habitat loss and fragmentation in the area.

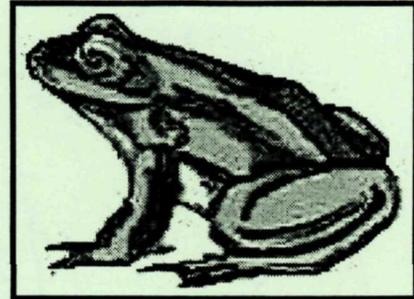
Frogs use the existing pools and springs of the area in much the same way as they did 50 years ago, although carrying capacity and frog numbers have shrunk. Their habitat in the pasture is vulnerable to damage from horse grazing and trampling, particularly in dry years such as summer 2000. The grazing and trampling typically causes the pond to be degraded, and the fence will now protect the pool from this degradation and allow frogs to forage free from the multiple hooves above them.

Patla's request for habitat protection this year dove-tailed neatly with USU Wildlife Society president Tanille Flint's (daughter of YNP's new fiscal officer Blaine Flint) request for a work project. Dan Reinhart, with the support and backing of Lake District Ranger John Lounsbury,

provided the coordination and logistical planning to make the project happen. Reinhart and Patla joined in the students' labor, and Dave Hill of the Lake maintenance shop helped out with the difficult task

of unspooling cable—and also lent hand tools. In addition to building the new fence, the

group also made improvements to an existing fence around the frogs' breeding pool and restored some woody debris within portions of the migration zone affected by recent fuel hazard reduction projects.



WINTER USE DECISION FOR YELLOWSTONE AND GRAND TETON NATIONAL PARKS IS ANNOUNCED

From an NPS press release

Protecting visitor safety and enjoyment, air quality, wildlife, and the natural quiet of Yellowstone and Grand Teton national parks were the determining factors in a decision to phase out most snowmobile use in the two parks over three years in favor of multi-passenger snowcoaches, according to an announcement made on November 22 by Karen Wade, Intermountain Regional Director for the National Park Service.

Wade issued her statement in a formal "Record of Decision" which followed many years of study to determine what kind of winter activities were appropriate for Yellowstone and Grand Teton national parks and the John D. Rockefeller, Jr., Memorial Parkway. The process of creating a Winter Use Plan started as far back as 1993.

The Record of Decision concludes that

snowmobile use in these parks so adversely affects air quality, wildlife, natural soundscapes, and the enjoyment of other visitors that the resources and values of these parks are impaired, creating a situation which conflicts with the mandate of the National Park Service Organic Act that parks be left "unimpaired for the enjoyment of future generations." Executive Orders issued by Presidents Nixon and Carter and the NPS's own regulation on snowmobiling all prohibit snowmobile use in national parks where it disturbs wildlife, damages park resources, or is inconsistent with the park's natural, cultural, scenic, and aesthetic values; safety considerations; or management objectives.

The Record of Decision announces the selection of a modified version of the Preferred

Alternative (G) from the group of alternatives proposed in the *Final Environmental Impact Statement on Winter Use for Yellowstone and Grand Teton national parks and the John D. Rockefeller, Jr., Memorial Parkway*. Effective the winter of 2003–2004 and thereafter, it would allow oversnow motorized recreation access via NPS-managed snowcoach only, with limited exceptions for continued snowmobile access to other public and private lands adjacent to or within Grand Teton National Park. Until then, interim actions would progressively reduce the impacts from snowmobile use in the parks.

During the winter of 2000–2001, snowmobile use would continue under current rules. Through a separate rulemaking process the National Park Service would propose changes to its regulations to establish interim limits in the winters of 2001–2002 and 2002–2003, and end most snowmobile use effective the winter of 2003–2004. Those changes would be proposed for public comment, and would not be finalized until public comments are received and considered.

For the winter of 2001–2002, the proposed new regulations would generally allow snowmobile use to continue at current levels, with daily use limits that would keep snowmobile numbers on the busiest peak days from exceeding historic peak-day levels. These limits would not reduce overall snowmobile use, but would keep the level of use on the busiest days from increasing. For the winter of 2002–2003, the proposed new regulations would establish daily use limits that are expected to lead to an approximately 50 percent reduction in snowmobiles entering Yellowstone's South and West entrances. Current snowmobile use levels would remain the same at the East and North entrances. Specifics of the phased plan are as follows:

□ During the winter of 2000–2001:

- There would be no cap on snowmobile use.
- Oversnow motorized travel would be prohibited from 11 P.M. to 6 A.M. except by authorization beginning December 18, 2000.

□ During the winter of 2001–2002:

- Existing commercial snowcoach operators would be allowed to increase their fleet size and encourage snowmobile rental businesses and other new operators to purchase or lease snowcoaches and reduce snowmobile numbers.
- Daily snowmobile use numbers would be set for all three park units at levels not to exceed the seven-year average for peak days. (See chart, page four).
- For snowplane use on Jackson Lake, permits would be reissued to permit holders of record. No new permits would be issued.
- Oversnow motorized travel would be prohibited from 9 P.M. to 8 A.M. except by authorization.

□ During the winter of 2002–2003:

- Existing commercial snowcoach operators would be allowed to continue to increase their fleet size and encourage snowmobile rental businesses and other new operators to purchase or lease snowcoaches and reduce snowmobile numbers.
- Daily snowmobile use numbers would be set for all three parks at levels that are expected to lead to an approximately 50 percent reduction in snowmobiles entering Yellowstone's South and West entrances.
- Current snowmobile use levels would be allowed to continue at the East and North entrances, on the parkway's Grassy Lake Road, and on the Continental Divide Snowmobile Trail in Grand Teton NP and the parkway.
- Snowmobiles in Yellowstone must be accompanied by an NPS-permitted guide and travel in groups of no more than 11 (including the guide).
- In Grand Teton NP and the John D. Rockefeller, Jr., Memorial Parkway, the superintendent would be authorized to require groups and guides.
- Oversnow motorized travel would be prohibited from 9 P.M. to 8 A.M. except by authorization.
- Snowmobile use would be eliminated within Grand Teton National Park except on the Continental Divide Snowmobile Trail and on access routes leading to private lands and adjacent national forest lands.
- Snowplane use, as well as snowmobile use, would be discontinued on the frozen surface of Jackson Lake in Grand Teton NP.

- In 2003–2004 and thereafter, most oversnow motorized visitor travel in the three park units would be by NPS-managed snowcoach only. (NOTE: The term "NPS-managed" refers to commercial permit management. In this case, the mass transportation snowcoach system would be provided by private businesses who operate under

a concessions permit from the NPS. These permits are generally offered for competitive bidding in limited numbers and are granted for a specific number of years.) In Grand Teton NP, snowmobile use would continue to be allowed on access routes leading to private lands and adjacent national forest lands.

The Record of Decision is available online at www.nps.gov/planning.

| INTERIM CAPS ON SNOWMOBILES IN YELLOWSTONE (YNP), ROCKEFELLER PARKWAY (JDRMP) AND GRAND TETON (GTNP) | | | |
|---|------------------|-----------------|--------------|
| ROAD SEGMENTS | HISTORIC AVERAGE | 2001-2002 | 2002-2003 |
| | DAILY USE | PEAK DAY LIMITS | DAILY LIMITS |
| YNP North Entrance | 41 | 60 | 60 |
| YNP West Entrance | 555 | 1,030 | 278 |
| YNP East Entrance | 37 | 100 | 65 |
| YNP South Entrance to JDRMP Flagg Ranch | 176 | 330 | 90 |
| JDRMP Grassy Lake Road | 25 | 40 | 25 |
| JDRMP Flagg Ranch to GTNP Moran Jct to east boundary | 25 | 70 | 25 |
| GTNP Jackson Lake | 30 | 30 | 0 |
| GTNP Teton Park Road | 11 | 20 | 0 |
| GTNP Moose-Wilson Road | 6 | 10 | 0 |

Implementation of this limit is to ensure that use does not exceed the historic averages for use on the busiest peak days and the level of impact associated with it. Use fluctuates daily, increasing especially during certain holiday periods. Use caps should act to allow such fluctuations, since this is the nature of business and visitation. This is why the peak use day represents a cap, to allow the business pattern to continue. **It is not the intent of this cap to allow peak use numbers to occur every day.** If this were to occur then levels would be exceeded overall, and additional impacts would be incurred. **It is the intent of this cap to replicate the pattern and amount of use that has been established over an average of seven years.**



THANKSGIVING RUMBLINGS

Information from Paul Doss and the University of Utah Seismograph Stations

As most of us were napping off our Thanksgiving dinners, Yellowstone's geologic forces were hard at work—an earthquake of 4.2 magnitude occurred in the park at 9:20 P.M. MST on Thursday, November 23. The epicenter of the shock was located about one mile north of Norris Junction, an area that is noted for earthquake swarms. The earthquake was initially reported to

be felt at Madison Junction and at Mammoth Hot Springs, where no damage was reported. In 1975, this area experienced an M5.9 event that did cause damage.

Park Geologist Paul Doss visited the Norris and Old Faithful areas on Friday to see if there were any relevant observations to be made, but by Friday afternoon had not seen any obvious

changes in thermal activity.

Grant Gifford (Norris maintenance) reported that he had felt the quake at Canyon, where there was obvious shaking and rattling. Upon checking on his residence at Norris, he found cabinetry open with supplies and dishes fallen to the floor, some broken. Grant had not encountered this before in his experience with felt quakes at Norris.

Yellowstone National Park and other GYE residents can help develop a new online Yellowstone earthquake database by answering a simple online questionnaire if they feel ground motion accompanying earthquakes in and around Yellowstone National Park. The questionnaire is online at http://pasadena.wr.usgs.gov/shake/imw/STORE/Xjjai/ciim_display.html.



THE FIRE EFFECTS CREW: ONE STEP AHEAD OF THE FLAMES!

By Eric Miller, Mitch Burgard, and Todd Carlson

The Yellowstone fire effects crew had a busy 2000 season installing and reading monitoring plots ahead of the numerous wildfires that burned in the park this year. Installing monitoring plots and allowing them to burn yields a valuable record of pre- and post-fire vegetation and fuel levels. The plots are laid out in the forest and permanently marked with ribar so that they can be relocated and read again. They are then sampled for ground-layer vegetation, fuel load, and forest characteristics such as tree density and composition. Resampling these plots every few years into the future will allow us to understand the effects of wildfire on fuel accumulation, plant community dynamics, and other aspects of the park's ecosystems.

The warm and dry weather conditions in Yellowstone produced 29 natural ignitions in 2000, four of which exceeded 100 hectares in size. The number and sizes of the fires allowed us to install five monitoring plots ahead of three naturally ignited fires: Two-Smokes, Boundary, and Plateau. The first plot (Two-Smokes) was installed in a smoldering tree island in the meadows on the Pitchstone Plateau in the southwestern corner of the park. This fire was ignited by lightning on July 18. The plot was installed on

July 23. In the late afternoon the next day the fire reached a jackpot of branches and downed logs and burned about half of the tree island and most of the plot. In the following weeks the fire burned the rest of the tree island and spotted across the intervening meadow into two other tree islands. The plot was resampled on September 13.

We installed two more plots on the Boundary Fire at the south boundary of the park. This fire was ignited by lightning on August 15 in a forest of 12-year-old lodgepole pines regenerating an area that was overrun by crown fire in 1988. The resulting fuel load was high. When the wind was favorable the fire made major advances, carrying through the low canopy of young lodgepole pine.

One plot burned on August 22, a day after installation. The other burned about five days later. These two plots are interesting because the cover type (LP0) was not expected to carry fire as well as it did. Fire carried through the sedges from log to log. Old, rotten logs were completely consumed while the more sound logs resulting from trees killed in 1988 were only scorched and partially burned. We found that the fire would not consume logs with a bulk density (a measure of "rotteness") greater than 1.3 grams/

cm³. This figure, as well as the vegetation data from this year's sampling and future resampling, may be applied to the vast areas of the park that are regenerating from the fires of 1988 and will aid our predictions of future wildfire behavior and ecosystem recovery.

The last two plots were installed on the Plateau Fire near Buffalo Lake Cabin. Unfortunately, the weather turned cool and wet during installation and neither of them burned.

As we monitor these burns as they recover from fire we will be able to track the potential influx of exotic plant species, abundances of native species, and monitor the rate of fuel accumulation. The data collected from these plots will be added to an existing, long-term (23-year) dataset begun by Don Despain. Despain's dataset is comprised of 12 plots installed between 1977 and 1989 and periodically resampled every few

years thereafter. We presented some of these results at the Second USGS Wildland Fire Workshop in Los Alamos in early November, and are currently working toward publishing this information in a paper.

This summer we also began to develop a GIS database of old fires in the park using archived maps and records. Bob Flather and the fire effects crew are working with the Yellowstone Spatial Analysis Center to develop a database of fires stretching back to the 1920s. This database will allow Yellowstone's wildland fire managers to quickly access a landscape-level spatial history of fires in the park. The information can be used to predict how wildfires will behave at the perimeter of old burns.

For more information about the Fire Effects Program please contact us or see our website at www.nps.gov/yell/technical/fire.



ELK'S HORMONAL RAMPAGE CAUSES DAMAGE, DEPORTATION, AND DATA COLLECTION

by Tiffany Potter, Mark Biel, Kerry Gunther, John Mack, and Tim Reid

On the morning of September 25, Bear Management Office (BMO) personnel were notified about a rutting bull elk that was acting aggressively, damaging property (at least seven vehicles), and posing a threat to human safety by chasing visitors and park employees.

Shannon Savage, GIS guru for the Yellowstone Center for Resources, was one victim of the elk's hostilities. "I was driving between the Administration building and the visitor center," Shannon said, "when I noticed a harem of elk with a large bull. The bull was intently staring at me. That's when I knew to press on the gas and get out of the way." Her efforts were to no avail, however, as the elk head-butted Shannon's

Toyota Tacoma with all the vigor of any NFL linebacker, causing hundreds of dollars in damage.

This account and several others initiated a committee of ranger and YCR staff to discuss management options for the aggressive elk. A decision was made to tranquilize and move the animal away from the Mammoth developed area. In collaboration with Mammoth rangers, fire cache and maintenance employees, BMO personnel darted the elk near Officer's Row. The elk was then ear-tagged and transported to the Frog Rock area on the Mammoth-to-Tower road, approximately 7.75 miles away from Mammoth (as the crow flies) around 4 P.M. that afternoon. Within 24 hours, however, the intrepid elk returned to the

Mammoth area. As a safety precaution, YCR personnel monitored the animal's behavior and the actions of visitors and employees watching the animal.

On the morning of September 28, the elk damaged at least two more vehicles and continued to pose a threat to visitor and employee safety. It was decided that the elk should be moved a greater distance from Mammoth.

Later that day, the bull was immobilized for a second time near the Little People's Learning Center, fitted with a radio collar designed to fall off in about a year, and moved to the Natural Bridge road area near Fishing Bridge (33 miles from the capture site as the crow flies). Contrary to rumors, the immobilization team did not saw the antlers off the bull. As the animal recovered from anesthesia, a noticeable limp in the right front leg was observed. The reason for the injury remains unknown.

During subsequent visits over the next week to monitor the elk's condition, the animal remained in the Natural Bridge area. With the help of Wolf Project staff, the elk was also monitored from the air. During the next week, the bull

began a progression northward. In a few days it was observed north of Mud Volcano. By October 15, the animal was radio-located in a deep ravine along Solfatar Creek near Norris Junction. Radio signals received on October 19 suggested that the bull had returned to the Mammoth area.

Due to the elk's newly elusive nature and a decision by biologists not to disturb the animal, a visual observation was not obtained until November 3, when the bull was seen on the Blacktail Plateau with a herd of about 200 elk. The animal showed no signs of limping and appeared to be in good health.

A certain level of aggression during the rut can be an advantage for bulls establishing dominance and keeping a harem. The level of aggression toward people and vehicles, however, is uncommon. From 1996 until this fall, no incidents regarding aggressive elk were reported. Decisions about how to deal with aggressive wildlife in developed areas are made on a case-by-case basis, and the information gained during this relocation effort will be useful for management actions for habituated elk in the future.



HANK LEWIS DISCUSSES FIRE HISTORY IN YELLOWSTONE

by Kevin Schneider

Did native Americans intentionally set fires on the landscape to modify the natural conditions to suit their needs? Or perhaps, a better question, why *wouldn't* Indians use fire? There is no doubt that selectively-set fires can substantially improve habitat for wildlife and edible plant species—resources upon which native peoples depended.

Dr. Henry Lewis has wrestled with these questions for nearly 40 years, beginning as a seasonal firefighter in Sequoia and Kings Canyon national parks. Finding an ancient Indian campsite

while digging fireline stimulated a curiosity in Hank that led him to make the study of aboriginal people's use of fire his life's work. During an October visit to Yellowstone, Hank explored these issues with park staff.

Evidence of Indian burning is clear in oral tradition and in landscape data, such as soils, charcoal remains, and the paleo-botanical record. For instance, tree rings in the Sierra Nevada mountains reveal periodic fire scars. However, at the period when Indians left the area, the fire scars

disappear. Indeed, burning was part of an overall land management strategy for Indians, which included cultivating, hunting, clearing trails, and renewing the land.

Indians burned for a nearly unlimited number of reasons, depending upon their location and the time of year. In addition, the intensity and the frequency of fires they set varied. Most anthropogenic, or human-caused, fires occurred at lower elevations where the majority of resources were located. Indians only burned in those places where they would derive some kind of resource benefit—they didn't burn just for the sake of burning. Many fires were set either at the onset of the growing season or at the end, but rarely during the mid-summer green season, when forage was most available for wildlife. Interestingly, men and women burned different areas, reflecting their distinct roles. Women tended to burn areas like camas and berry patches for gathering purposes. Men, who typically were hunters, burned areas that would attract wildlife.

In the boreal forests of northern Alberta, it was a common practice for native peoples to set small fires to attract moose. Many biologists today recognize that fire will improve habitat for ungulates by opening the forest canopy and stimulating grass and shrub growth. This process, however, can take months or even years—too long for Indians to wait for a meal. In actuality, moose, wanting to roll in the ash and browse on burned brush, would be drawn to burned areas only a few hours after the fire—a perfectly reasonable amount of time for people to catch dinner.

Still, native people burned for more reasons than simply improving food availability. A small fire in timber, for instance, would dry trees out instantly, making them almost perfect for firewood. A fire set near a camp would eliminate undergrowth and brush, making it more difficult for enemies to attack by surprise. Fires also may have improved the abundance of plants used for medicinal purposes.

Underlying the questions about why Indians burned is an incredible sophistication

about fire and a deep understanding of natural successional processes. Indians sought to create a mosaic of habitat that maximized their ability to use resources. Periodic human-caused fires also improved the stability and security of an area by preventing large-scale, catastrophic fires from occurring. Aboriginal people in Australia even used backfires to control their burns. For these people, lighting fires was like sweeping out their home to keep it clean. Even today, ranchers and farmers use many of the same fire practices that Indians used for years.

So how does all of this apply to Yellowstone? What was the role of Indians here? Archeological evidence makes it clear that people used this area and modified it to suit their needs. Whether or not fires were intentionally set is a little more unclear. The northern range is a prime candidate for human-caused fires. In fact, a study done by Doug Houston in 1973 of 40 fire-scarred trees estimated a fire frequency of 20–25 years. This suggests that past fires may have been the result of fire-related activities by Indians. But even fire scarred tree data can't tell the whole story. Small fires set by Indians may have burned open range but not scorched standing trees. At places like Obsidian Cliff, Indians may have burned the area for defensive purposes. Travel corridors like the Bannock Trail, a route to buffalo ranges of the Yellowstone Valley and the Wyoming Basin, could have been routinely burned to keep the thoroughfare open.

Many questions remain after Dr. Lewis's visit. Did Indians burn in lodgepole forests, an area with seemingly low resource values? What plant species exist in the park that indigenous women might have burned to enhance harvest? Do tree rings around known Indian campsites indicate more frequent fires? How would they have used fire to affect elk, or possibly beaver? Answers to these questions may not come easily. As Dr. Lewis readily pointed out, the biggest weakness of anthropology is that 99 per cent of anthropologists have never been hunter/gatherers. Because they haven't lived those experiences, and

view the world through totally different lenses, many anthropologists can have an overly simplistic view of aboriginal lifestyles. Simply knowing what questions to ask, and how to ask them, is half the battle for getting useful oral histories.

Although the objective may not be to re-create historic human-caused fires, knowing how Indians used fire contributes to our understanding of the integration of ecological and human history in Yellowstone.



NEWS FROM BEAR MANAGEMENT

By Kerry Gunther and Mark Biel

Grizzly Bear Activity for 2000

The first reported grizzly bear activity of 2000 was observed on March 1 in the Druid Peak area of Lamar Valley. As of this issue of the *Buffalo Chip*, the last grizzly bear activity reported was an observation near Mud Volcano on December 6.

Grizzly Bear Females with Cubs-of-the-Year

A total of 37 female grizzly bears with 72 cubs-of-the-year (COY) were observed in the Yellowstone ecosystem in 2000. Average litter size in the ecosystem was 1.95 cubs/litter. The 37 females with COY was the highest number ever recorded in the Yellowstone ecosystem. The previous high for females with COY was 35 in 1998. Fourteen (38%) of these 37 females were observed in Yellowstone National Park (YNP) at least once during the summer season. The 14 females observed in YNP were accompanied by 26 COY, an average litter size of 1.86 cubs/litter. Grizzly bear family groups observed in YNP included 3 one-cub litters, 10 two-cub litters, and 1 three-cub litter.

Grizzly Bear-Human Conflicts and Management Actions

There were a total of nine grizzly bear-human conflicts reported thus far in 2000. These conflicts included seven property damages in which no human foods were obtained, one incident where a grizzly bear obtained garbage that had

been hung in a backcountry campsite, and one confirmed grizzly bear-inflicted human injury (a second reported grizzly bear-inflicted human injury was reported but has not yet been confirmed). Both the confirmed and unconfirmed human injuries were very minor and did not require overnight hospitalization or sutures. The low number of grizzly bear-human conflicts may be attributed to the abundant supply of over-wintered whitebark pine nuts left over from the fall of 1999. This attracted and held grizzly bears at high elevations away from people and developed areas throughout the summer and early fall. Due to the low number of conflicts, no grizzly bears were captured in management actions, and there were no human-caused grizzly bear mortalities in YNP in 2000.

Black Bear Activity for 2000

The first reported black bear activity of 2000 was a track observation on April 8 on the Rescue Creek Trail. The last reported black bear activity as of this issue was of a black bear observed on the porch at an employee's residence at Lake on November 29.

Black Bear-Human Conflicts and Management Actions

There were a total of five black bear-human conflicts reported thus far in 2000. These conflicts included two property damages in which no

human foods were obtained, two incidents where black bears obtained human foods, and one black bear-inflicted human injury. The human injury was very minor and did not require overnight hospitalization or sutures. Due to the low number of

conflicts, only one black bear was captured and translocated in a management action and there were no human-caused black bear mortalities in YNP in 2000.



WHAT'S UP WITH WOLVES?

By Debra Guernsey

As of December 2000, there are approximately 117 wolves in about 15 packs or groups in the Greater Yellowstone Ecosystem (GYE). Wolf Project staff will conduct the official yearly count of pups as well as the rest of the wolf population in Yellowstone in the coming weeks. Those results should be available sometime in January 2001.

The Wolf Project is in the midst of its early 30-day winter study. Field crews continue to see the "big three" packs inhabiting Yellowstone's northern range (Leopold, Rose Creek, and Druid Peak). With 27 strong, the Druid Peak pack continues to maintain their now-famous "kick-but" attitude as the dominant pack in the Lamar Valley. Field crews have recently observed them, at times, inside the edge of the Rose Creek pack territory in Slough Creek flats, asserting themselves with classic wolf behavior such as scent-marking and subjecting some younger members of the Rose Creek pack with their wrath. No wolf deaths from these interactions have been recorded to date.

The project is also gearing up for the yearly wolf collaring operation that will occur during January and possibly February of 2001. The operation will be conducted differently this year, as the National Park Service will be working in cooperation with the U.S. Fish and Wildlife Service (USFWS). Both agencies will assist each other with the collaring of wolves both inside and

outside Yellowstone park boundaries. Collaring goals will continue to be the same as in the past. Collaring alphas and marking others in the pack continue to be priorities in anticipation of dispersing animals.

The National Park Service in cooperation with the USFWS has discontinued the wolf information hotline due to telephone logistics. Wolf information may be obtained from the park's website at www.nps.gov/yell/nature/animals/wolf. The project's annual reports through 1999 may also be downloaded from Yellowstone's website at www.nps.gov/yell/publications/index.htm. For other information regarding wolves in Yellowstone National Park, call Deb Guernsey at 307-344-2243.



NPS photo

...NEWS BRIEFS...

New in the archives...

Harold Housley has finished adding to the collection a significant number of new history-of-wildlife records that the park has not heretofore had.

The records date from 1937 to around 1953. These Yellowstone records (original documents) are currently housed at the National Archives in Kansas City, and thanks to Mike Finley, the park now has copies of them available to you and all researchers. The materials are in boxes N-338 through N-345 here in the park archives.

The files seem especially heavy with bison and elk material, but there is much heretofore unavailable material on other animals as well: bears, pronghorn, coyotes, bighorn sheep, and even fish. To view the inventory of these materials (13 pages long), go to the Yellowstone intranet site and click on: 1) Yell NPS Internet site, 2) In Depth, 3) Technical, and 4) Archives List. Or, access the site at www.nps.gov/yell/technical/archives/index.htm. This is the first such group of NARA-Yellowstone records to become available. In the next year or so we will add many others from Kansas City.

Obsidian Pool: I Got a Name

Chick Fagan, of the NPS Office of Policy in Washington, reports that the U.S. Board on Geographic Names officially approved the name Obsidian Pool (for a backcountry feature in the Mud Volcano area) on November 9, 2000. That place-name is now official.

New publications

Now available online at www.nps.gov/yell/publications/index.htm are the *Yellowstone Bird Report* for 1999 and the *Yellowstone Wolf Project Annual Report* for 1999. Also new and available at the same web address is the beautiful *Wetlands Resources of Yellowstone National Park* by Charles Elliott and Mary Hektner. Contact Terry McEneaney, Deb Guernsey, or

Mary Hektner if you wish to obtain hard copies of these documents. Also expected this month is *Yellowstone in the Afterglow: Lessons from the Fires*.

Your Picture May Be Worth 1,000 Words— And a Trip to a National Park

Remember that great picture you took at a national park this summer? Everyone said it should win a prize—and now it can! The first National Parks Pass Experience Your America Photo Contest has been announced to select the image for the 2002 National Parks Pass. The contest is sponsored by the National Park Service and the National Park Foundation with Kodak, a Proud Partner of America's National Parks.

Any photo taken by an amateur photographer in a national park since January 1, 2000 is eligible. The winning image will be announced in May 2001, and will appear on the 2002 National Parks Pass. The photographer submitting the winning image will get a trip for four to any national park, a Kodak camera kit, and a personalized National Parks Pass.

Complete contest rules and an entry form are available at www.nationalparks.org, or by sending a self-addressed stamped envelope to: National Parks Pass Photo Contest Rules, Post Office Box 5220, Young America, MN 55558-5220.

National Park Service "Family" Reaches Out to Fire Victims

In August of 2000, as the worst wildland fire season ever was beginning to wind down, National Park Service employees began a project to help the victims of the Cerro Grande Fire in Los Alamos. The "From Our Family to Yours" Quilt Project was launched by NPS employee Jeri Mihalic, with a goal of NPS "families" making a quilt to give to each of the families who lost their home in the fire. After the project was announced, responses and commitments to make quilts came

from all over—from the Everglades to Denali. About 100 groups or individuals have signed up to make quilts, with some making more than one quilt. Quilts are being made by seasonal and permanent employees; retirees; the children and spouses of former employees; and friends and neighbors of parks. Several quilt guilds located near parks with an NPS employee in their guild are making quilts to donate. Yellowstone National Park is collecting quilt blocks from employees who are planning an old-fashioned quilting bee to quilt the top. The response from the NPS family has been overwhelming. The first two quilts were distributed in September and many more are yet to be made. One of the recipients was a woman who had lost a half-finished quilt in the fire. Public Affairs Contact: Charissa Stanton, (202) 208-6843.

New Research

THE PRESENCE AND DISTRIBUTION OF LYNX (*LYNX CANADENSIS*) IN YELLOWSTONE NATIONAL PARK

Principal Investigator: Kerry Murphy,
Yellowstone Center for Resources

Purpose of the Study: to document the occurrence, distribution, and relative abundance of lynx in prime habitats in YNP from 2000–2003. This study also hopes to inspire the design of a viable long-term lynx survey sampling methodology that will include efforts to estimate lynx numbers. The results of this study will provide important data that will aid in the future survival and management of lynx across the country.

BIOGEOCHEMICAL CYCLING OF ARSENIC IN GEOTHERMAL ENVIRONMENTS: AN IN-SITU STUDY

Principal Investigator: Jillian F. Banfield,
University of Wisconsin-Madison—master's student Tom Gihring. (Funded for one year by EPA.)

Purpose of study: to measure the impacts of thermophilic microorganisms on arsenic cycling in geothermal environments. The main goal is to understand some of the biological controls on arsenic transport in natural surface waters.

The *Buffalo Chip* is the resource management newsletter for Yellowstone National Park.
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We welcome submissions of articles or drawings relating to natural and cultural resource management and research in the park. They can be sent to:

Yellowstone Center for Resources,
P.O. Box 168, Yellowstone National Park, Wyoming 82190, (307) 344-2208.

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