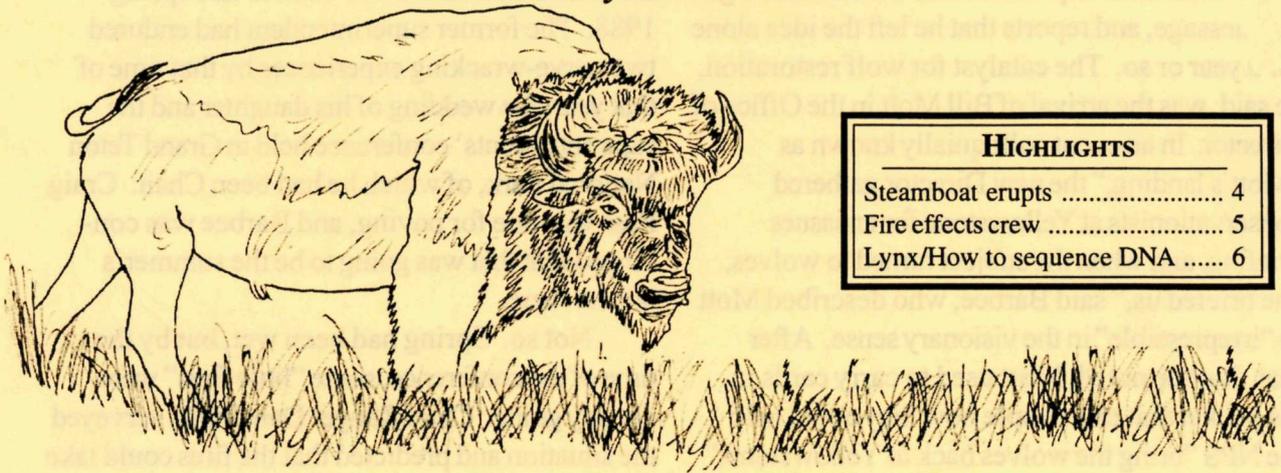

The Buffalo Chip

Resource Management Newsletter
Yellowstone National Park
Early summer 2002



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YELLOWSTONE REDUX: BOB BARBEE ON WOLVES, FIRE, AND STANDING AT THE HELM

By Alice K. Wondrak

Former Yellowstone superintendent Bob Barbee was in Yellowstone earlier this month, at the invitation of Charissa Reid and the Oral History Program. Before he sat down with Charissa and a few other Yellowstone staff for a full-length interview on the afternoon of May 6, Barbee visited with many more staff members for a lunchtime discussion and reminiscence. Admittedly uncomfortable with playing the role of old sage, Barbee preferred to let the audience steer the course of the conversation rather than set the agenda himself. Not surprisingly, most of the talk centered on wolf restoration and the fires of 1988.

First, though, Barbee was asked to set the stage and talk a bit about what sorts of things were happening in Yellowstone when he arrived as superintendent in January 1983. He named three memorable controversies: concern over the status of the grizzly, the concessioner buyout, and the Fishing Bridge campsite replacement proposal.

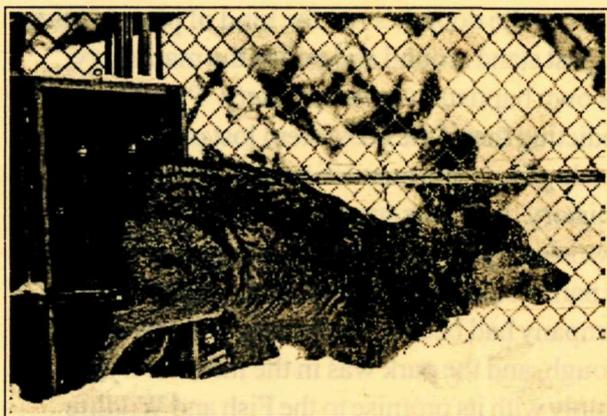
As Barbee explained, "Yellowstone's the kind of place where the day you walk in the door you're in a state of siege. And it's the same when you walk out the door. It's not the kind of place where you just stand around and polish the machinery." His own baptism was no less fiery. People were predicting that if the ecosystem lost one more female grizzly, the population would be relegated to history. Previous superintendent John Townsley's push for the NPS to purchase all of the park's buildings from the Yellowstone Park Company had been controversial and just come through, and the park was in the midst of trying to comply with its promise to the Fish and Wildlife Service that the Fishing Bridge campground be removed in exchange for the development of the new Grant Village complex.

The wolves

Barbee came to Yellowstone from Redwood National Park at the request of then-NPS Direc-

tor Russ Dickerson. While in Washington for his official job interview with Interior Secretary James Watt, Barbee also met with an Assistant Secretary who explained one aspect of Barbee's potential agenda for him in no uncertain terms: making noises about returning wolves to Yellowstone would earn Barbee professional exile. Barbee got the message, and reports that he left the idea alone for a year or so. The catalyst for wolf restoration, he said, was the arrival of Bill Mott in the Office of Director. In an event colloquially known as "Mott's landing," the new Director gathered conservationists at Yellowstone for an issues briefing, and when the subject turned to wolves, "he briefed us," said Barbee, who described Mott as "irrepressible" in the visionary sense. After that, Barbee noted, Mott used to carry cards in his pocket that told people how they could help the NPS "bring the wolves back to Yellowstone," and would pass them out to people whom he engaged on the topic.

Getting started was one thing. Making restoration happen was another. Asked when he began to feel like the idea might actually become reality, Barbee pointed to Wyoming Senator Alan Simpson's insistence that an EIS be done before reintroduction took place. Barbee was confident



NPS photo.

that far from precluding the plan's progress, as others might have anticipated, an EIS would actually work in favor of those who desired the wolves' return. In retrospect, Barbee saw a certain element of luck at work in the process, as

well. "The stars lined up," he mused, especially when Interior Secretary Bruce Babbitt was willing to "stand up and concur" that wolf restoration would be good for Yellowstone.

The fires

Moving on to no less controversial subjects, the audience took Barbee back to late spring 1988. The former superintendent had endured two nerve-wracking experiences by that time of that year: the wedding of his daughter and the superintendents' conference held in Grand Teton National Park, of which he had been Chair. Craig Pass was due for paving, and Barbee was convinced that that was going to be the summer's hottest issue.

Not so. Spring had been wet, but by the time of the conference, some "little fires" were already going. Chief Ranger Dan Sholly surveyed the situation and predicted that the fires could take some acreage.

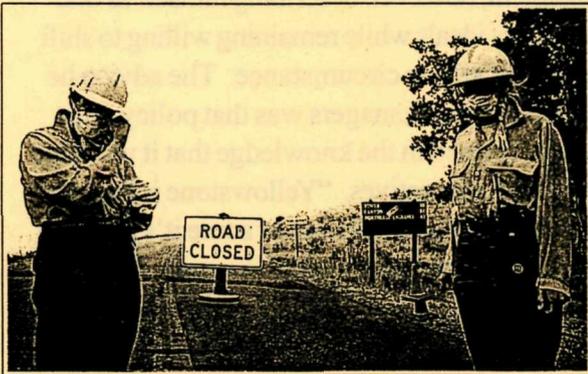
"It began." On July 15, the decision was made to suppress all new fires, regardless of cause. On July 21, it was decided to suppress all fires; all existing fires were converted to wildfire status.

"Then it really began." Over the objections of some park staff, the order was given to "snuff" the Lava Creek fire. Then the North Fork fire joined it.

As we all know now, the fires were not to be snuffed. As Barbee observed, "all the models went out the window" that summer. The wind acted as choreographer for the combination of an extraordinary set of variables, including explosively dry fuels and single-digit humidity. Controversy started to rage along with the flames as first the National Park Service, and then Barbee himself were popularly cast as the agent provocateur of the fires—some of which, Barbee pointed out, were not even "ours." The massive North Fork fire, for instance, had started outside the park. Regardless, the marquee outside a West Yellowstone motel notoriously welcomed visitors to "the Yellowstone Barbee-que." When Secretary Hodel came to visit, though, he took up the

park's case, explaining to the media that fire was an important part of the area's natural dynamics. "He never abandoned us," said Barbee.

Despite the fires' burning across roads and forcing local evacuations, many visitors were loath to leave the park. They sat and watched Old Faithful erupt as fires swept nearby hillsides, and were famously photographed roasting hot dogs over burning logs. But some people began to wonder if Barbee oughtn't simply close the park.



NPS photo.

Anita Varley, working in the VSO that summer, wasn't one of them. She remembers the bulletin board that she and her staff maintained that summer, equipped with several sets of double-sided signs reading OPEN on one side and CLOSED on the other. Every 20 minutes or so, the furious flipping would begin as VSO employees scrambled to keep up with the very latest reports of which roads were passable and which were not. Through all the freneticism, however, Varley says it never occurred to her how easy it would have been to just close the park. In retrospect, she believes it a tremendous accomplishment that it was kept open despite what was essentially a war being waged within it.

The Lake Hotel, Barbee remembers, was filled with people, even after it was darkened by the loss of electricity caused by the fires. He recalls Senator Dale Bumpers sitting in the hotel's lobby, struggling to read the *Washington Post* by the light of a headlamp. Bumpers espied Barbee and told him that under the circumstances, he would support a decision to close the park.

Soon, Congress passed a special bill allowing the park to purchase infrared equipment that helped staff to locate fires whose smoke was so thick that nobody could see enough to even know where they were anymore.

Through it all, Director Mott was still spreading the gospel of "fire is good." By the time Mott finally visited Yellowstone, Barbee knew that the Director had to stop talking about the ecosystem and start talking about the bravery of the firefighters that were putting their lives on the line for the park day after day. The historians of the future could place events within their ecological context; the exigency and heroicism of today were what needed to be discussed.

September 7 dawned. Fire closed in around the Old Faithful Inn. If the Inn was lost, Barbee knew, he and his colleagues were "dead meat." Teams of firefighters essentially washed the building for three days, and when the fire finally descended and swept through the development, in what has become the dramatic climax of many retellings of the story of that summer, three people remained on its roof with hoses in a Herculean effort to prevent its immolation.



NPS photo.

It stood.

It snowed.

What Anita Varley remembers most about that summer was the sense of teamwork and togetherness that living through the experience fostered among her fellow park employees. "I was never a part of anything [else] where so many people performed at such a high level of efficiency and competence for so long," she remarked. Others commented on the strong sense of personal and professional support that they felt coming from the Superintendent's Office. Barbee had an uncanny ability, according to Eleanor Clark, to focus on the huge scope of things and also on minute details, especially when it came to the needs of his employees. Phil Perkins concurred, and Barbee agreed that he was very worried, that summer, about the toll that the fires and their media coverage were taking on his people.

Barbee never shied away from his role as the man whose job it was to take the heat, no matter how personally-directed and ill-deserved it may have been. When he arrived at his post as Regional Director for Alaska several years later, he was introduced to one group as "the gentleman who burned down Yellowstone and brought the predacious wolves back." "What are you going to do for Alaska," his host wanted to know. Barbee doesn't advocate the kamikaze approach to management, however, describing himself as one to stick to his ideals while remaining willing to shift in the face of strong circumstance. The advice he offered to current managers was that policy must always be formed in the knowledge that it will face oppositional alternatives. "Yellowstone is the kind of place that if a bird falls out of a tree it's going to be covered by three networks," he said. "Do your homework."



STEAMBOAT GEYSER ERUPTS—AGAIN!

By Hank Heasler

The world's tallest geyser, Steamboat, erupted on April 26, 2002. Steamboat Geyser erupts only sporadically, generally in intervals of many years, but last erupted just two years ago. At least four park visitors witnessed this April's eruption, unaware that they were viewing a very special event.

Joy Currier of Cincinnati, Ohio and her husband had stopped at Norris on their way back to West Yellowstone from Canyon. They were watching Bath tub Geyser when, hearing a loud roaring noise and vibration at their feet, they turned around to see Steamboat erupting! Water rising from the eruption started white, twisted like a rope braid, got very dark, turned white again, then dark. The Curriers were no closer to Steamboat than they were to Bath tub, and so returned to the Norris parking lot where they observed the eruption for 20 minutes. Another couple was in

the parking lot, video taping the eruption. Joy Currier did not know who the other two people were.

U.S. Geological Survey instrumentation on Tantalus Creek recorded an increase in its water flow at 9:00 p.m., MDT, on April 26, 2002. A similar water level rise at the gaging station was seen approximately one hour after the beginning of the May 2, 2000 eruption. Thus, the best estimate for the April 26 eruption of Steamboat is approximately 8:00 p.m.

Bob Smith of the University of Utah noted several earthquakes on the day of the eruption, including distant events that were recorded on the Yellowstone seismic network. The local earthquakes consisted of two small swarms, all of magnitudes less than 2.8, that occurred in two areas: on the west side of the park north of West Yellowstone, and in the northeast caldera, Mirror

Plateau. Both of these locations were more than 15 km from Steamboat Geyser. While these earthquakes were not directly correlated in location with the Steamboat Geyser eruption, their

temporal coincidence with it may indicate a possible causal relationship. Stresses causing the geyser eruption could be related to triggering of the earthquakes.



FIRE EFFECTS: THE ENDLESS PURSUIT OF FIRE GEEKERY

By Eric Miller and Becky Seifert

You might imagine the common wildland fire fighter emerging through the smoke in a yellow nomex shirt, brandishing a chainsaw. However, in Yellowstone you might see something different—a figure emerging through the smoke bearing a palm computer, geeky-looking antennas, tape measures, and digital cameras. You've encountered the Yellowstone Fire Effects Crew!

The 2001 season kept the crew very busy. Early on, Mitch Burgard left the program to become the Prescribed Fire Specialist at Glacier National Park and Eric Miller assumed the program lead. For 2002 Becky Seifert is returning and we have recently hired Vicki Pecha.

There were 38 ignitions in 2001 that burned 2,980 hectares (7,300 acres) of the park, fifth in total area burned in the last 30 years. Because extreme fire seasons do not occur every year, we focused on taking advantage of the many fires in the different forest types to improve our knowledge of fire behavior and the effects of natural ignitions on the park's ecosystems. A basic understanding

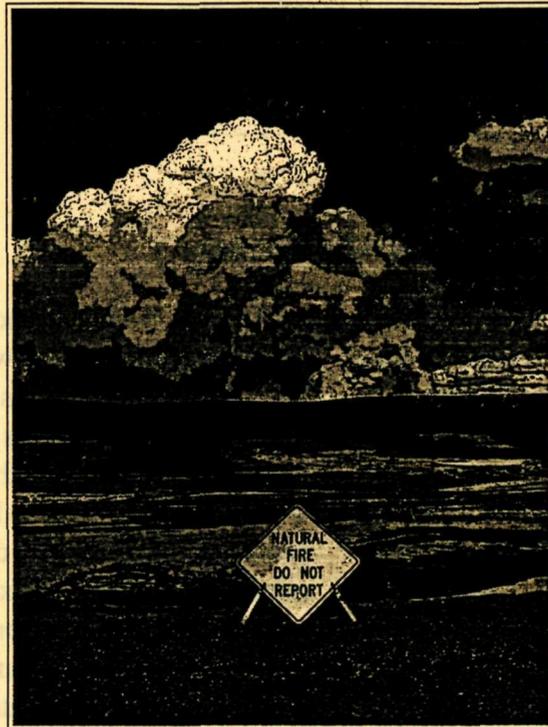
of how vegetation and fuels respond to fire allows Fire Management to make informed decisions.

We installed four vegetation plots ahead of the Stone, Sulphur, Little, and Falcon Fires. Of these plots, three burned and one didn't. (One fire took its sweet time—five weeks to burn from the lightning strike to the plot location!). These plots, as well as three other plots installed ahead of wildfires during the 2000 season, will be

resampled this summer. Depending on the number and extent of ignitions in the upcoming season we will continue to install vegetation plots ahead of naturally occurring wildfires.

We also resampled a series of experimental transects established in 1996 to test the effects of fireline explosives (FLE) as a method for creating control lines. Experimental firelines were created using FLE and standard handlines versus a control. We will analyze the effects of the different treatments on vegetation recovery.

For the upcoming season we will host students from the University of Iowa who will help us develop a photoseries to



The Sulphur fire blows up, 2001. From an NPS photo.

represent fuels in Yellowstone's extensive young, post-fire lodgepole pine forests. Current fuel models are poor predictors of fire behavior in this forest type. This photoseries will involve an intensive sampling of fuels which will be used as inputs into fire behavior software to better predict fire intensity and growth.

We also plan to put the finishing touches on a GIS database of all recorded fires in the park. Bob Flather has researched old fire descriptions and perimeters in the archives. The fire effects crew, Ken Marchand, Ann Rodman, and volunteers are cooperating to have the fire locations entered into the database. This record will be accurate to about 1928 with sporadic cases dating back to 1881. Having a complete dataset available in a spatial format will be useful not only to Fire Management but also to other resource management programs because fire has such a profound effect on vegetation (for example, a stand of mature spruce-fir one year may be a stand of early successional lodgepole pine the next).

This year we will sample year 2000 and 2001 large fires to ground-truth satellite images depicting fire severity. This technology is being developed by Carl Key (USGS/GLAC) and Nate Benson (Everglades NP). In short, a comparison of pre- and post-fire satellite images yields a 30 m pixel-scale map of vegetation changes induced by fire. Our responsibility is to assess the burns on the ground for fire severity. The information we collect will be used to calibrate the satellite image. Mapping fires using satellite imagery yields a record of wildfire perimeters and severity in much greater detail (and more cheaply) than mapping fires by hand on the ground or from aircraft.

In short, the fire effects crew is just your typical gang of geeks in nomex—don't be surprised to see the pulaski replaced by the pocket computer as the tool of choice for the modern Yellowstone fire fighter. For more information about the Fire Effects Program please see our website at www.nps.gov/yell/technical/fire/effects.htm.



FOUND: THE MISSING LYNX!

By Tiffany Potter, Kerry Murphy, Mark Biel & Alice Wondrak

At the end of April, the lynx project heard exciting news. Mitochondrial DNA samples from our hair-snaring survey last summer (see process description below) tested positive for Canada lynx (*lynx canadensis*)! Upon further investigation, tests confirmed that it was a female, meaning that it was not the one we reported on in the January-February 2002 issue of the *Buffalo Chip*. These tests, combined with a reliable observation in summer 2000, two probable lynx tracks discovered on track surveys from winter 2001 and winter 2002, and a Wyoming Game and Fish lynx study, show that we have had at least two lynx in Yellowstone.

To some, it may sound strange that we are thrilled to learn of the presence of just a few

individuals, but to date, no other lynx were verified to be in the greater Yellowstone ecosystem in 2001. The lynx project is a three-year, three-part study (begun two winters ago) to document lynx and, opportunistically, other rare carnivores like wolverine. Now that we have determined a presence, efforts will be directed toward determining if a residential lynx population exists in Yellowstone. The lynx project has reached the midpoint of a 3½ year survey. At the end of the 3½ years, we will evaluate our results with respect to management implications.

It is important to remember that the hair snare data and tracks collected so far indicate that a lynx was present at one time and one place, and do not provide enough evidence for us to say that

Yellowstone has resident year-round lynx. Rather, the detections have given us better insight on where to look for resident lynx. Repeated positive identifications over a series of years would suggest the presence of a resident lynx. But detecting the simple presence or absence of lynx

at all was the study's first objective, and has been fulfilled—we thought it might take 3½ years just to find a lynx, but that happened in first hair snare year! Canada lynx were listed as a threatened species in March 2000, which was the impetus for this work.



Try this at home!
The Buffalo Chip's easy guide
to sequencing mitochondrial DNA

1. Extract a tiny DNA sample from the root of a hair.
2. Amplify (replicate) the DNA through a polymerase chain reaction (PCR). Replicating the DNA ensures a higher probability of getting the desired information described below, as a single cycle of PCR doubles the number of target DNA molecules. The PCR process was made possible through private research conducted on Yellowstone's own *thermus aquaticus* microorganism, which is uniquely tolerant of the extreme heat that the process requires. The PCR process is now used worldwide, and makes possible such activities as the human DNA fingerprinting used in forensic science; molecular paleontology; diagnosis of prenatal disorders; and identification of pathogens. The NPS is currently preparing a benefits-sharing EIS that explores the possibility and potential effects of returning a portion of profits from such research directly to the park in the future.
3. Chop up the resulting DNA. Use genetic markers (polypeptides) to target the desired points in the DNA chain (gene sequences).
4. Further amplify (replicate) these markers (microsatellite regions) with another PCR.
5. Introduce primers (single-stranded oligonucleotides specially designed to attach themselves to tar-



geted portions of the DNA) with dyes attached to them.

6. Load the resulting DNA into a special gel.

7. Electrophorese the gel (submit it to an electrical field, in which molecules migrate certain distances depending on their weight).

8. Stick the samples into a prism DNA sequencer, which will read the dye patterns digitally. The sequencer produces a number print-out (spreadsheet) representing the different markers, or "alleles" (each gene has two).

Find matching numbers corresponding to different individuals on the spreadsheet and you can determine the species of the individual whose hair you pulled. Perform the same process on nuclear DNA and you can determine parentage and whether your hair snare has collected multiple hits of the same individual.

--AKW



GEYSER UPDATE

By Carolyn Loren

On this June 10th, through blowing snow, Old Faithful is erupting faithfully. Over the winter and through this spring, it has had so many faithfully long eruptions (followed by intervals of about 1 ½ hours) that some area guides count on that pattern and think ahead several predictions to plan their day. It usually works; until this morning we hadn't had a short eruption (one lasting less than 2½ minutes) in about a week (a "long eruption" lasts more than 2½ minutes). For predictions, we are now using 92 minutes following a long eruption, 65 minutes following a short one.

To the many each year who would claim that Old Faithful just isn't as faithful anymore, and that

it erupted far higher in the past, we offer this excerpt from a 1938 issue of the Yellowstone Nature Notes, by Naturalist Frank Oberhansley: "[Some] who are re-visiting this wonderland are often heard to remark that the geysers are changing. Old Faithful does not play so regularly nor is the water thrown to such great heights as formerly, according to these observers... It may be entirely true that "Mr. Jones" was fortunate enough to witness Old Faithful playing "on the hour" a couple of times 40 years ago, but had he lingered and carefully recorded correct observations of several successive eruptions this comparison with those of today would be interesting... Old Faithful

Geyser has continued its performances through the years since discovery to the present time without noticeable change. Observers have pointed out that the extreme interval between eruptions may vary from 38 minutes to more than 80 minutes, although the usual range is much smaller, hovering between 62 and 68 minutes.” Obviously, our responses to these daily questions are a longstanding Yellowstone tradition!

Once the weather clears, it will be a great time to come see the geysers. Grand is having short intervals of about 7½ hours. Fan & Mortar are putting on their incredible half-hour show once or twice a week, and Beehive is most often erupting during the day. Castle is not having as many minor eruptions as in some years (although it is unpredictable—there was one today!).

If you have a walkie-talkie, you can tune to channel 4.5 and listen to geyser gazers report what they’re seeing. Just listening is best; if you start planning lunch with someone down basin, you’ll be quickly reminded that that frequency is for geyser information only. Maybe you’ll become so addicted to the geysers that your loved ones

will write to Ann Landers for advice on how to have a non-Yellowstone vacation sometime during the rest of your life (that actually happened). Ann should know, however, that geysers can be much worse than the fabled “other woman.” They rule lots of lives in the Upper Geyser Basin.

If no major geysers are expected to erupt soon after your arrival, go see Plume on Geyser Hill. At 35-40 minute intervals, and 25 to 30-foot heights just 10 feet from the boardwalk, it’s a sure pleaser for those visiting relatives. Or you can impress Mom by noting the first Lion eruption in its series, and taking her back 1¼ hours later for a nearly-sure second eruption, about 75 feet up and maybe 20 feet away from your boardwalk seat.

It is true that Giant Geyser has not erupted since April 14, and will probably erupt seldom over the summer, as is its pattern. Giantess’s April 24 eruption was eclipsed by the eruption of Steamboat on April 26. Nonetheless, there’s always something good to do in the Upper Geyser Basin. We have a new geyser interval handout; come on over and try it out!



“WHAT’S UP WITH THOSE RED PINE TREES?”

By Roy Renkin

You’ve probably noticed red-needled postfire lodgepole pine seedlings, particularly along the West Entrance road corridor. I visited that area on Tuesday, June 11 with pathologists Gregg DeNitto and Marcus Jackson of the USDA Forest Service Forest Health Protection group in Missoula. After inspecting some 40 trees at three different locations along the road corridor. We determined that environmental, rather than insect or disease agents were responsible for their discoloration. Although no consistent pattern of affected tissue was evident, generally the top 1/3 was discolored, usually on the outer portion of the tree crowns. Occasionally, some of the most affected trees were dead.

Trees were examined for root, stem, branch, and foliar pathogens, and none were observed that could be primarily responsible for the trees’ condition. Several secondary agents like bark beetles and a black fungal stain were observed beneath the bark on most of the specimens sampled, but were symptoms rather than causes. Because of the generally widespread discoloration in large pockets across the local landscape, we ruled out the possibility of exhaust from snowmobiles and/or automobiles as a potential agent. It is most likely that winter dessication (sometime called winter burn) was responsible for the stressed tree condition. Winter dessication commonly occurs when the ground is frozen and

roots cannot absorb sufficient water to prevent tissue death. Three years of cumulative drought stress and a very low overwinter snow pack undoubtedly contributed to this winter burn.

This red hue will likely give way to more green as new growth commences and the red needles drop. A few of the more stressed and

affected seedlings may die back. On the other hand, a progressively worsening condition in which more and larger areas are affected or accelerated mortality of those already affected, would suggest that other as-yet-unidentified agents are responsible. We will be watching as the situation develops.



BEAR ACTIVITY IN YELLOWSTONE NATIONAL PARK

From an NPS press release

With park roads opening and more visitors arriving in the park, Yellowstone National Park Superintendent Suzanne Lewis asks park visitors to be alert for signs of bear activity and to be cautious when hiking and viewing bears and other wildlife.

In the spring, bears search for winter-killed wildlife and winter-weakened elk and bison, the primary sources of much needed food for both grizzlies and black bears. Visitors are asked to be especially cautious of wildlife carcasses that may attract bears, and to take the necessary

precautions to avoid an encounter. Bears will aggressively defend a food source, especially when surprised, and so an encounter with a bear feeding on a carcass increases the risk of personal injury.

All of Yellowstone is bear country. People have been seriously injured, maimed, and killed by bears. Do not approach a bear under any circumstances. Observe them at a safe distance; it is illegal to approach on foot within 100 yards of bears. Bears may appear tolerant of people but

are known to attack without warning. View them from the safety of your vehicle. To reduce your risk of surprising a bear, remain alert and watch for signs of bears or bear activity, such as tracks or droppings. Stay on designated trails, make

noise, and don't hike or jog alone or at night. Always carry bear pepper spray and have it easily accessible.

If you encounter a bear, do not run. Bears can run 30 mph (48 kph), which is faster than Olympic sprinters. Running may elicit an attack from an otherwise



Grizzly bear. From an NPS photo.

non-aggressive bear. If the bear is unaware of you, keep out of sight and detour behind and downwind of the bear. If the bear is aware of you and is nearby but has not acted aggressively, slowly back away.

If a bear approaches or charges you, do not run and do not drop your day- or back-pack. Some bears will bluff their way out of a threatening situation by charging, then veering off or stopping abruptly at the last second. Bear experts generally recommend standing still until the bear

stops and then slowly backing away. If you are attacked, lie on the ground completely flat. Spread your legs and clasp your hands over the back of your neck.

If precautionary measures fail and a bear charges, behavioral reactions such as those described above can be used to defuse the situation in most cases. Bear pepper spray is a good last line of defense that has been effective in most of the reported cases where it has been used. Bear spray is effective only at short distances (10-30 feet), and is adversely affected by wind, cold temperatures, and the age of the product. Take time to become familiar with your bear spray, the safety trigger, and holster. Carefully read the instructions and be aware of its limitations. If you decide to carry pepper spray, it must be immediately available, not in your pack. Remember that carrying pepper spray is not a substitute for vigilance and good safety precautions.

Some news stories have suggested that bear pepper spray is a bear attractant. These stories have arisen from the misuse of the product — applying it to people, tents, packs, or other equipment. Bear pepper spray is not designed to be applied as a repellent, but is designed to spray at a charging or attacking bear. Bear spray has been a highly effective deterrent when used in this manner.

The purpose of the Yellowstone National Park bear management policy is to ensure a natural and free-ranging population of black and grizzly bears. One important aspect of the management program is the separation of bears from unnatural food sources. Human foods are one of the chief culprits in the creation of problem bears. Bears' conditioning to groceries, garbage or intentional feeding, and habituation to people may lead to their causing human injury and property damage and occasionally require their destruction. Visitors are reminded to keep food, garbage, barbecue grills, and other attractants stored inside or otherwise unavailable to bears.

Superintendent Lewis states that park staff, along with other local, state, and federal agencies in the Greater Yellowstone Area constantly strive to protect the bear population through public education, enforcement of regulations for proper food and garbage handling, the relocation of problem bears, and seasonal human use closures.

Visitors are asked to report any sightings or signs of bears to the nearest visitor center or ranger station as soon as possible. Permits for backcountry camping and information on day hikes are available at visitor centers and ranger stations.

For further information on spring conditions in Yellowstone National Park, call park headquarters at (307) 344-7381.



...NEWS BRIEFS...

Bear Incident in Yellowstone National Park

Yellowstone National Park officials note that a woman, jogging alone, received minor injuries when she encountered a bear in the Lake area on Saturday, May 26, at approximately 7:00 a.m.

Abigail Thomas, a 32-year-old U.S. Post Office employee at Lake, was jogging around the Lake Lodge cabin loop when she encountered a

male sub-adult grizzly bear approximately 15 yards to her right. Ms. Thomas immediately stopped and stood perfectly still; she did not make eye contact with the bear, and continuously reassured the bear that she was not a threat by talking to it. The bear stood up on its back legs and sniffed the air, then dropped to the ground and slowly approached Ms. Thomas on her right

side. When it reached her, it began sniffing her from the waist down, then opened its mouth and, very gently, closed its mouth around Ms. Thomas's right upper thigh. The bear applied a small amount of pressure, then released her leg.

Ms. Thomas received no injuries other than some very minor contusions; her skin was not broken from the bite. After Ms. Thomas felt the bear release her leg, she reached for her water bottle and squirted the bear between the eyes. The bear immediately ran from the area. Park officials praised Ms. Thomas for how well she handled the potentially life-threatening bear encounter, remaining calm and focused throughout the ordeal.

New Courthouse Proposed

Yellowstone superintendent Suzanne Lewis announced on May 7 that the park is soliciting public comments on the proposal for a courthouse to be built in the Mammoth Hot Springs area of Yellowstone National Park. Proposed building functions would include a courtroom, judge's chambers, interview rooms, ante room, temporary holding facility, law enforcement offices, and evidence and records storage areas. The building would be two stories high with a basement for a total of approximately 9000 square feet. The proposed building footprint would be approximately 3000 square feet. Several sites in the Mammoth area will be considered in the planning process, in conjunction with the requirements of the U.S. Courts and U.S. Marshal Service. The building would be funded through the NPS Line Item Construction program, U.S. Courts, and the U.S. Marshal Service.

The existing courthouse, located in the "Pagoda," has been determined to be grossly inadequate in terms of space and security for the facility, judge, defendants, and all involved in courtroom proceedings. The NPS believes the building is no longer suitable for its purpose as a courtroom, but the building would continue to be used for offices by the North District ranger operation.

The EA should be available for public review in the winter of 2002-2003. Construction of the facility is planned to begin in the winter of 2004-2005.

Yellowstone Announces New Wide-Screen Film for Old Faithful Visitor Center

Yellowstone National Park and the Yellowstone Association have released a new film explaining the park's geysers, hot springs, mud pots, and other hydrothermal features. The high-definition, wide-screen, surround-sound film has been two years in the making and was produced by Northern Light Productions of Boston. It is the first new film developed for a Yellowstone visitor center in more than 25 years and marks the beginning of the development of several new educational projects and programs focusing on Yellowstone's rare hot water features. Funding for the film was provided by the Yellowstone Association.

Yellowstone: A Symphony of Fire and Water will be shown throughout each day at the Old Faithful Visitor Center beginning this summer. The fourteen-minute film includes interviews with renowned geologists, spectacular cinematography of the park's various hydrothermal features, and animation showing how these features are fueled by a "hot spot" of molten rock that lies not far beneath the earth's surface in the Yellowstone area.

A 24-minute version of *Yellowstone: A Symphony of Fire and Water* is available for sale at visitor center bookstores, or by mail from the Yellowstone Association. The cost is \$14.95. To order this item from the Yellowstone Association, call 1-877-967-0090 or visit their web site at www.YellowstoneAssociation.org.

The Old Faithful Visitor Center is open daily during the summer months. Hours are 8:00 a.m. to 7:00 p.m. through Labor Day. National Park Service interpretive rangers are available at the visitor center to provide park information, guided activities, and geyser eruption predictions.

Fuel Cell Installed at West Entrance

Yellowstone National Park took a significant step in its ongoing "Greening of Yellowstone" initiative with the installation on May 6, 2002, of an H Power 4.5 kilowatt fuel cell at the park's West Entrance in West Yellowstone, Montana. The fuel cell, which will provide heat and power to ticket kiosks and an office on a test and demonstration basis, is the first to be installed in the park. Electricity from the fuel cell will power lights, communications equipment and computers in the entrance facilities, while the heat will be used for space heating.

The fuel cell produces electricity and heat through an electrochemical process rather than by combustion. The H Power fuel cell at Yellowstone uses propane to operate. A reformer extracts hydrogen from the propane, and the hydrogen produces electricity when mixed with oxygen in the fuel cell stack at the core of the system. The only by-products of the reaction within the stack are heat and pure water.

Yellowstone officials hope that the year-long demonstration of the fuel cell will lead to expanded use of the ultra-clean and quiet technology to generate power to various areas of the park. Of particular interest are remote ranger stations and other facilities where generators are now being used.

Mammoth Hot Springs Historic District Listed on National Register of Historic Places

Yellowstone National Park Superintendent Suzanne Lewis has announced that the Mammoth Hot Springs Historic District was recently listed on the National Register of Historic Places. The Mammoth Historic District was approved for designation by Secretary of the Interior Gale Norton on March 20, 2002.

The Mammoth Hot Springs Historic District is significant for its historical association with the development of Yellowstone National Park. Located near the Mammoth Hot Springs Terraces, it is the site of the first administrative

headquarters and first concessions in the park. Yellowstone's first hotels, as well as its first retail store, photograph shop, and filling station were all located at Mammoth Hot Springs—the successors of which still operate within the district. The historic district encompasses 190 resources, including 187 buildings, a parade ground and campground.

Mammoth Hot Springs is also significant for its architecture. Fort Yellowstone lies within the Mammoth Hot Springs Historic District and was once headquarters for the military administration of the park. Fort Yellowstone includes 40 structures dating from the 1890s and early 1900s that continue to be used for park administration, residences and visitor services. Fort Yellowstone is currently being considered for National Historic Landmark status. Other Yellowstone National Historic Landmarks include Obsidian Cliff, the Old Faithful Inn, the Northeast Entrance Station, and the Norris, Madison, and Fishing Bridge museums.

Ranger Adventure Hikes Program Expanded

Yellowstone National Park is pleased to announce the expansion of the Ranger Adventure Hikes program for 2002. Interpretive park rangers will offer ten, half-day hikes per week from June 17 through August 31. Hikes will be conducted at Old Faithful, Mammoth Hot Springs, and the Tower/Roosevelt areas, providing visitors with a more in-depth experience about Yellowstone National Park.

The Ranger Adventure Hikes will be offered as a fee activity. The price of this program is \$15 for adults, \$5 for kids aged 7 to 15, and free for kids six and under. These high-quality programs are limited to 15 participants per hike. Hikes are rated from easy to difficult. Some hikes are not recommended for people with heart, breathing, or serious medical conditions. Program locations change daily. Information and tickets are only available in-person at the following NPS Visitor Centers: Old Faithful, Albright (Mammoth), Grant, Canyon, and Fishing Bridge. Tickets must be

purchased prior to hike day.

The park has identified fee programs as those activities that go beyond the scope of the basic interpretive program, focus on programs that serve a small segment of park visitors, or tend to be relatively expensive to offer. These programs are beyond the park's ability to fund without recovering some of the costs. Fees charged go back into the program's budget and help offset staff and supply costs. Interpretive park rangers will continue to offer more than 4,000 free walks, talks, and evening programs for the public this summer.

YNP Announces July Teacher Workshop

Yellowstone National Park invites educators to participate in *Yellowstone Science for Teachers*, July 21 through July 26, 2002. The workshop offers credit hours, is free of charge, and provides lodging for participants. Priority will be given to high school science teachers in Wyoming, Montana, and Idaho.

Yellowstone Science for Teachers is designed to give educators a better understanding of Yellowstone's resources, current research, and

management issues through outdoor explorations, and discussions with park scientists. Topics include geocosystem and geothermal processes, wildlife ecology and issues, lake archaeology and geology, winter use issues, and National Park Service careers.

Park educators and workshop participants will also brainstorm ideas for a proposed high school field camp at the park. Any participant who submits a set of original high school lesson plans on a Yellowstone science topic by August 20, 2002, will receive a \$300 stipend. These lesson plans may be adapted for use in the park's future curriculum-based high school program.

The National Park Service's *Parks as Classrooms* program is funding this workshop. *Parks as Classrooms* is a nationwide program that invites students and educators to learn about our national parks through park visits, educational materials, and classroom activities.

For additional information or to register for the workshop, teachers should call the park's Education Program Manager, Janet Ambrose, at (307) 344-2253.

The *Buffalo Chip* is the resource management newsletter for Yellowstone National Park. It is published periodically by the Yellowstone Center for Resources.

We welcome submissions of articles or drawings relating to natural and cultural resource management and research in the park. They can be sent to:
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