



Park field trips spark student interest in wildfire

by Traci Weaver
Fire Communication and Education
Specialist, Grand Teton National Park

When children describe a wildfire, they often reflect what they have seen and heard from the news media: Fire is scary and it destroys everything. Many, like their parents, believe the 1988 Yellowstone National Park fires did just what news accounts back then described — devastated, destroyed and ravaged one of America’s most beloved national parks.



Twenty years after Yellowstone’s “summer of fire,” Montana schoolkids gather data about trees that grew back at the site of the North Fork Fire of 1988

Twenty years later, 100 Montana fourth and sixth graders got to explore a 20-year-old burned area while learning about fire’s role in the Yellowstone ecosystem. They discovered that while the fires’ scars are still there, so is an amazing display of nature’s regeneration. A standing carpet of 8- to 12-foot-tall lodgepole pines, Douglas fir and spruce now covers much of the burned acreage.

The students were in Yellowstone through a partnership between the National Park Service and Teton Science Schools (TSS), a program for college graduate students in science and environmental education that has operated in Grand Teton National Park since 1967. After initial training about Park Service fire management, Teton Science grad students conducted a three-day fire ecology management session for Chief Joseph Middle School sixth graders in Bozeman. Because those children have “Fire Fridays” with education specialists

from the Gallatin National Forest in Montana, they already had a basic understanding of wildfire fuels, fire behavior, prevention and the “wildland-urban interface” zone where people’s homes and the wilderness meet.

The graduate students spent the first classroom day teaching the students about fire’s role in the Greater Yellowstone Ecosystem

and explaining how research works. On the second day, TSS took advantage of the 1 ½-hour bus ride to Yellowstone park to teach more about fire ecology en route.

“It was great to have the instructors on the bus, working with the kids,” said Chief Joseph sixth-grade teacher **Wendy Pierce**. “Usually the bus ride is just to be endured, but this time kids were learning and using that time educationally – as well as having fun! The instructors knew how to combine research with games and teaching moments that keyed into the children’s natural curiosity.”

Once in the park, the students broke into six groups and collected data near Undine Falls, where the more than 500,000-acre North Fork Fire, the largest of Yellowstone’s 1988 blazes, burned. Because the fire left areas that were severely burned, less burned and not burned at all, the students could make comparisons. They learned how

to identify lodgepole pine, Douglas fir and spruce, and to count the number of each species in 10-square-meter study areas.

“For many students this was either their first time to the park, or at least their first time off the road and boardwalks,” Pierce said. “I have always been unsure how to collect data with a large group of kids, so it was really interesting to watch the grad students’ teaching techniques.”

The lessons concluded back in the classroom with role-playing as fire managers who use different strategies and alternatives to full suppression of a wildfire. They played roles of different groups involved in a wildfire, from biologists, ranchers and town council members to tourists and fire managers. Each group had to decide whether to recommend full suppression of a fire, partial suppression or only monitoring a fire, all based on what they had learned in the three-day workshop.

“The role-playing exercise has kids making tough decisions land managers must make when they face a wildfire,” said **Marianne Baumberger**, fire prevention and education technician for the Gallatin National Forest. “They definitely understood that fire plays an important role in the Greater Yellowstone Ecosystem, but it is a delicate balance when you consider safety, esthetics, habitat, impacts to people and cost.”

The fourth-graders, from Gardiner Elementary School near Yellowstone’s north entrance, had similar lessons, but with more classroom time. The TSS grad students used several lessons from the park’s portable “FireWorks” trunk of fire education teaching tools, including the “matchstick forest,” a miniature exercise that shows how a tight, thick canopy of trees and sloping terrain can affect fire behavior. A Yellowstone park fire engine and members of the Yellowstone Helitack

(continued on page 5)



Park field trips

(continued from page 4)

crew, with their specially equipped fire vehicle, met the students at the same Undine Falls research site to show them out how to use firefighting tools. The fourth-graders also did fire-management role-playing, and concluded their lessons by taking pictures and producing a podcast that captured what they had learned. Their podcast can be viewed at:

<http://www.tetonscience.org/blogs/GS/index.php/archives/387>

Because of the program's success in 2008, the Greater Yellowstone Area Fire Management Advisory Group

is looking to expand its partnership with Teton Science Schools – possibly including graduate students from other area schools – to teach the three-day fire ecology and management lessons in more schools across the Yellowstone region.

“Usually when we have schools come into the park, it is a huge time commitment for us, which limits the amount of school programs we can do,” said **Roy Renkin**, vegetation management specialist at the park. “All we did was provide the TSS grad students with some familiarity with the local conditions and help them find a teaching spot. They used their knowledge, skill and enthusiasm to make it a success.”



Students examine a tree that survived one of the Yellowstone fires of 1988

Teton school turns park meadows into a classroom

by Traci Weaver

Fire Communication and Education Specialist, Grand Teton National Park

Teton Science Schools (TSS) have long been advocates of “place-based teaching” – getting children outside to learn about natural science, hands-on. Since 1971, all fifth-grade students in Teton County, WY, have visited the Teton Science Schools campus in Grand Teton National Park for a three-day fall program that includes a field research day. This autumn, TSS partnered with the park to include fire-effects research in their lesson plans.

Two hundred students learned basic fire ecology and then went into the field to conduct research – monitoring vegetation in burned and unburned plots of sagebrush in the park. The research



Wyoming schoolkids study regrowth in a Grand Teton meadow burned by a prescribed fire

plots were set up in a 2001 prescribed burn site, conducted by interagency crews to reduced potential fire fuels around the TSS campus. The fifth-graders helped collect data for the park's fire effects program.

“The students' research was authentic and useful for Grand Teton National Park,” said **Josh Kleyman**, a lead graduate faculty member at TSS. “Students were truly inspired to know that their data collection and academic work had real-world implications. Moreover, the teachers were excited about this new opportunity.”

All the children, divided into groups, measured sagebrush and bitterbrush in burned and unburned areas. But each group had its own research twist. One compared soil moisture and temperature in each site. Another counted the scat of different wildlife species. A third collected insects. Each group drew comparison graphs and presented its findings to the rest of the students.

“Teton Science students are contributing field data that is valuable to the park's fire management program,” said **Diane Abendroth**, Grand Teton's fire ecologist. “This partnership gives us an opportunity to explore new and important questions about local fire ecology.”

Teton Science Schools will return to the fifth-graders' classrooms in the spring for follow-up with the students, who will create more graphs and analyze the information they gathered in the fall. That work will incorporate math and science standards emphasized by the Teton County School District.

Because of the fall programs' success at both Grand Teton and nearby Yellowstone National Park, TSS and the parks are exploring new opportunities for fire ecology and fire management education.

“With an outreach group of instructors visiting gateway communities to explore fire ecology, and the follow-up work in the Teton County fifth-grade classrooms, the nature of the collaboration has truly been profound,” Kleyman said. “We look forward to these types of authentic opportunities for collaboration into the future.”