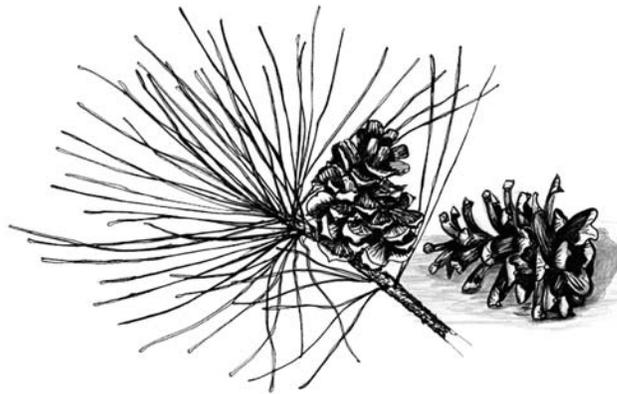

Investigating Fire Ecology in Ponderosa Pine Forests

2004/First Edition

A Field Guide for
Sixth Grade Teachers



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generous contributions of:



Publishing Information

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This guide may be obtained by participating in a teacher workshop or by visiting the Bandelier website at www.nps.gov/band.

Teachers are encouraged to offer their feedback by filling out the enclosed evaluation form or contacting the VIF or WES directly.

Printed on recycled paper using soy-based inks.

❁ PREFACE ❁

When the more than 18,000 residents of Los Alamos, New Mexico awoke on May 6, 2000, they were unaware that within the next ninety-six hours their sleepy, relaxed mountainside community would be forever changed. A small wildland fire approximately five miles southwest of town was rapidly growing. The fire was named for the peak of its origin, Cerro Grande. As residents uneasily watched the column of smoke rising from the thickly forested backdrop to town, over the next days firefighters battled the blaze with mixed success.

On the morning of Wednesday, May 10th, representatives of a wide range of government agencies, including New Mexico Governor Gary Johnson, visited Los Alamos to assess the fire. When the officials headed out of town around noon, the fire seemed under control. As I was escorting Governor Johnson to his helicopter, our ears were filled with the cries of cell phones and a sudden, exponential increase in radio traffic. Something had gone terribly wrong. Whipped into new life by penetrating winds from the southwest, the Cerro Grande Fire exploded in Los Alamos Canyon, just two miles south of town.

In a few minutes, fueled by tinder dry forests and wind gusts to 75 mph, plumes of smoke rose thousands of feet into the sky. The fire erupted into a two-mile-wide crown-fire that marched determinedly toward the town. Within the next four hours, the citizens of Los Alamos, except for police and fire personnel, were evacuated. Twelve hours later, residents of White Rock, eight miles to the southeast, were told to evacuate.

Crown fires are like tsunamis with two hundred foot waves. There is nothing you can do to stop them. ❁ Bill Armstrong, United States Forest Service (USFS)

Indeed, nothing could stop the wall of flame from sweeping through the northern parts of Los Alamos. By the next morning, the Cerro Grande Fire had grown from 4,300 acres to over 20,000 acres. In less than 24 hours it consumed over 230 structures, many the homes of 429 families. In some neighborhoods, the complete infrastructure melted and nothing remained except for smoldering piles of ash and rubble, lonely stone chimneys, and the skeletons of cars. By Saturday, May 14th, the flame front worked its way well past the town, but the fire had doubled in size to over 40,000 acres. In its wake were barren soils and hundreds of thousands charred, blackened telephone-pole sticks that were once the ponderosa pines of the Santa Fe National Forest.

That morning, some of the families from the highly-impacted neighborhoods were bused through the town to view what remained of their homes. Counselors were available to address the grief, despair and loss. The next day, White Rock residents were permitted to return to their community. Over the next seven days, the rest of the community was permitted to return to their homes. It was two weeks before the town held some resemblance of normalcy when the Los Alamos Public Schools re-opened.

Throughout the repopulation of the town, one question was asked repeatedly:

How can I help? More than a few people wanted to get involved in the rehabilitation effort on the mountain. Although untrained personnel are not permitted to enter an active fire perimeter, the overwhelming desire for citizens to volunteer in the burned area brought representatives from the various agencies around the community to form a Multi-Agency Volunteer Task Force (MAVTF).

As a Los Alamos Police Officer, I held various assignments during this time: airport security, dignitary protection, environmental damage and safety assessment and organizing the re-population. None of my duties prepared me for my next task: MAVTF asked me to become the Incident Commander for all volunteer efforts.

I got an inkling of what I was in for as the Incident Commander of MAVTF over the Memorial Day weekend. A few dozen citizens some of them now without homes threw away their holiday and showed up to volunteer to fill sandbags for the mitigation of flooding when the annual monsoon rains arrived early. One week later, the first Saturday in June, almost 500 volunteers showed up to do watershed stabilization work within the burned area.

An unanticipated synergy developed between a contagion of good will and the challenge to rehabilitate the community. It was a classic example of if people thought good things, then good things could happen. Fire fighting professionals from a multitude of agencies on local, state, and federal levels displayed an unprecedented creativity and constructivism to organize, operationally and logistically, such a mass undertaking. It is no easy task to handle 500 volunteers in a day! Tools, meals, transportation, and safety were just a fraction of the planning process. Volunteers arrived from not only the local area, but from as far away as Tennessee. Regardless of their origin, every single person contributed to a sense of caring, love and compassion for the community of Los Alamos and the landscape of the Jemez Mountains. By the end of the summer these Saturday morning work parties produced in excess of 13,000 hours of labor on tasks such as raking, seeding and mulching the perimeters of the town in hopes of mitigating any further damage from the nearing monsoon rains.

It was my great fortune to remain Incident Commander for the volunteer projects throughout the summer and early fall of 2000. I was eventually placed on detached service to the United States Forest Service and transferred to the Bitterroot Fires in the Montana rehabilitation project before retiring from the Los Alamos Police Department in January 2001.

By mid-summer, the overwhelming success of MAVTF was no surprise. From the community groundswell, a host of dedicated and sincere people joined the team.

John Hogan, a United States Geological Survey biologist assigned to the Jemez Mountains, was in on the volunteer effort from the start. Through the initial stages of the fire, John worked fighting spots fires and assisting where needed. At the start of the second week, he called me to ask where he could be of better use. I had known John for almost fifteen years and knew from the moment he became engaged that his knowledge and expertise of fire ecology would be of huge benefit to the community.

John recognized that rehabilitation would continue for years and that the most solid response to wildfire would be community-based. He freely gave his enthusiasm and relentless energy to the continuation of the volunteer efforts. Without his contributions, the volunteer rehabilitation effort would not have taken on such a broad outlook.

Craig Martin, a naturalist and author of seventeen books, is the other key founder of the VTF. Although the two had never met, John knew of Craig's devotion to the ecology and recreational potential of the Jemez Mountains and realized MAVTF might benefit from Craig's input. Involved in the weekend projects as a volunteer and writing on fire issues for the local newspaper, Craig ignored several messages on his answering machine from a John Hogan. John's persistent attempts paid off. The community and mountain are extremely glad he did. Craig's leadership, intensity, and demeanor have been a cornerstone for the VTF's success.

Laura Patterson also had a serendipitous invitation to this adventure. Laura is an elementary school teacher, and, like me, a martial artist. While working out one evening I asked her if she was free the following day to attend a MAVTF meeting regarding Cerro Grande Fire rehabilitation. Laura jumped at the offer. Always searching for ways to actively engage her students in learning, she was searching for a way to involve her 6th graders in post-fire activities. Laura was leading with her heart: 30% of the student body of her school lost their homes to the Cerro Grande Fire. Laura and fellow teacher and innovator Gerry Washburn made it part of their classroom routine to take students on the mountain to rebuild the Quemazon Nature Trail. Both physically reconstructing the trail and rejuvenating it were educational experiences. Through Laura's and Gerry's commitment and love of teaching, their students accomplished a feat few 6th grade classes can take credit for. As a team, Laura, Craig, and John promoted and developed the curriculum project that drove this publication.

When I think back on those first few meetings of the Multi-Agency Volunteer Task Force, one conversation stands out. John Hogan and I agreed that there was only one rule that attendees had to abide by: Make sure you leave your ego hanging at the door before entering, because we have a lot of work to do and we don't have time to waste. Each of us involved in this evolving endeavor has tried to keep our focus on future generations and how we might help them to be a little more knowledgeable about fire ecology. This entire experience has been more rewarding than we could possibly appreciate or comprehend. We only encourage each of our readers to take a risk, and when you think you have an opportunity to help, please do not hesitate, but act.

☛ Al Toth, Retired LAPD, former Incident Commander for the MAVTF

THE VOLUNTEER TASK FORCE

The Volunteer Task Force (VTF) is a community-based group focused on environmental education and ecological restoration. Formed as a multi-agency coordinating committee to handle the outpouring of volunteers in the wake of the Cerro Grande fire in Los Alamos, New Mexico, VTF evolved into a non-profit corporation that continues to provide educational and community service opportunities to students and adults in Los Alamos and throughout northern New Mexico. VTF mixes service learning with ecological monitoring to provide students the opportunity to generate real data that can be used as a management tool. Utilizing the Cerro Grande burned area as a natural laboratory, VTF supervises student projects on post-fire recovery in the areas of ground cover regeneration, planted seedling mortality, geomorphic changes to stream channels, and other monitoring. VTF specializes in hands-on projects that illustrate the importance of fire in ponderosa pine ecosystems, and that deal with issues of forest health and ecological stewardship in the Southwest. By combining science and service, VTF generates student ownership in the surrounding landscape.

A month after the Cerro Grande fire, teachers from Mountain Elementary School in Los Alamos where 30 percent of the students lost their homes in the blaze joined the VTF in developing a trail rebuilding project for sixth grade students. With the support of the National Park Service, VTF and Mountain School staff and students began the reconstruction of the Quemazon Nature Trail in September 2000. The program included presentations, activities, and outdoor classroom experiences to provide students with an overall understanding of the past and future of the forest along the trail. In 2001 and 2002, the program expanded into all the schools in Los Alamos and to schools throughout northern New Mexico. Continuing support from the National Park Service, the United States Geological Survey, and local businesses has brought this program to more than 4,000 students

VTF continues to design and implement ecological and recreational restoration projects in northern New Mexico. In the group's first three years, it amassed more than 44,000 hours of volunteer time from regional communities.





THE NATIONAL PARK SERVICE

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

Experience Your America

On August 25, 1916, President Woodrow Wilson signed the act creating the National Park Service, a new federal bureau in the Department of the Interior responsible for protecting the 40 national parks and monuments then in existence and those yet to be established.

This Organic Act of 1916 states that the Service thus established shall promote and regulate the use of Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.



Bandelier National Monument



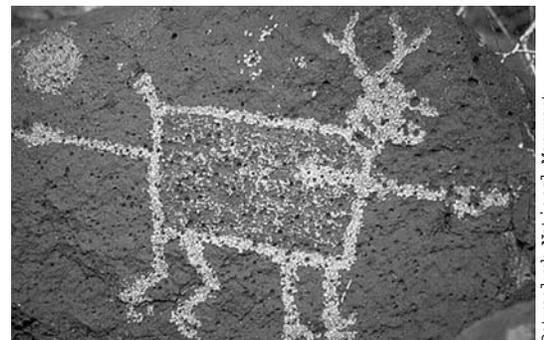
Pecos National Historic Park

The National Park Service still strives to meet these original goals, while filling many other roles as well: guardian of our diverse cultural and recreational resources; environmental advocate; world leader in the parks and preservation community; and pioneer in the drive to protect America's open space.

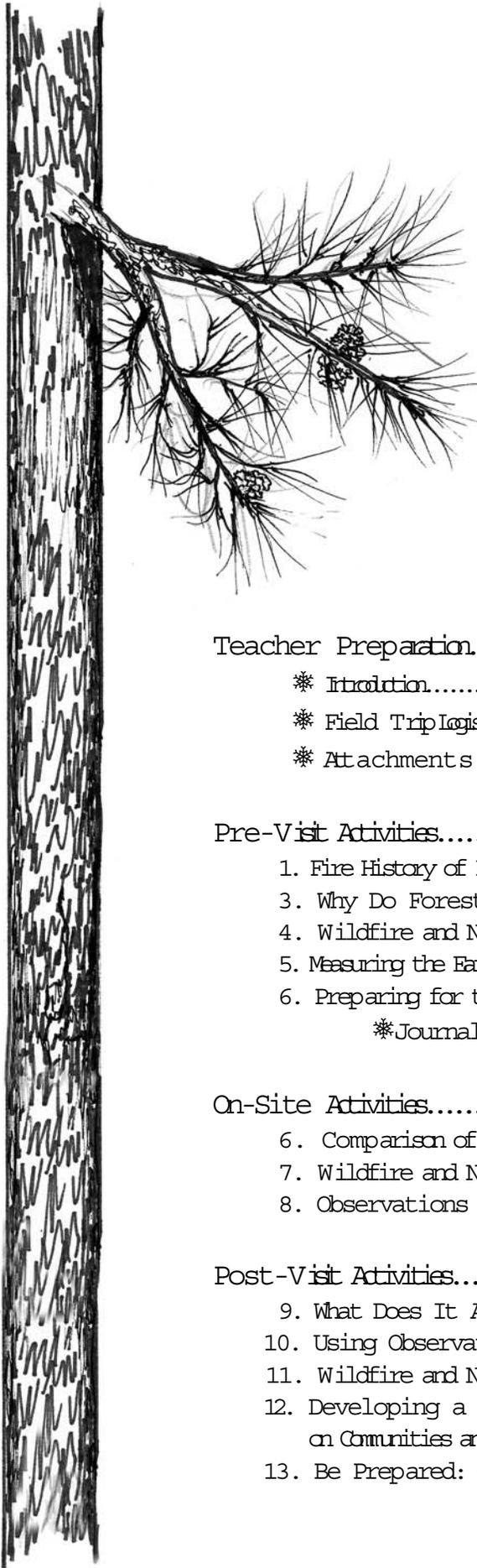
The National Park System of the United States comprises over 380 areas covering more than 83 million acres in 49 states, the District of Columbia, American Samoa, Guam, Puerto Rico, Saipan, and the

Virgin Islands. Although not all parks are as well known as the Grand Canyon and Yellowstone, all are areas of such national significance that they have been included in the National Park Service—ancient pueblos, battlefields, birthplaces, memorials, recreation areas, and countless other wonders.

The future of the National Park System lies in understanding and protecting its meanings, values, and resources. Each part of the system represents the United States and a part of our heritage. Preservation of individual sites and the entire system will ensure the essence of quality remains in our lives and the lives of all future generations.



Petroglyph National Monument



Investigating Fire Ecology

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