



Fire & Fuels Information 2008

Making History in Sequoia & Kings Canyon National Parks

In the summer of 1965, a young researcher named Richard Hartesveldt completed experiments to study the effects of fire exclusion on giant sequoias at Redwood Mountain Grove in Kings Canyon National Park. By today's standards, it was an exercise on a small scale: 12 acres were treated with fire. This first experiment in the parks showed that sequoia seedlings flourished after a fire.



*A prescribed fire conducted in 1969 at Redwood Mountain Grove.
NPS photo by Bruce Kilgore.*

In 1968, Sequoia & Kings Canyon National Parks policy shifted fire management strategies from full suppression to include prescribed fire and managed lightning fires that achieved vegetation and wildlife management objectives. The parks completed the 800-acre Rattlesnake Creek Prescribed Fire and managed the first lightning fire in National Park Service history on Kennedy Ridge that year.

Four decades have passed since then. As the parks reflect upon 40 years of

fire management policy, it's an appropriate time to consider the significance of the decisions made here in the 1960s.

Although the attitudes towards fire were changing, the managers of the parks and the researchers were making history for fire management in the United States. These decisions were not easy. After all, the general public, the fire community at large, and the neighboring communities still believed that wildland fire was nothing but destructive and deadly.

The concept that wildland fire was a natural event like rain or snow, that it could improve the beauty and health of an ecosystem, that the parks' very reason for existence—the giant sequoia—may actually thrive with a natural fire cycle, was a radical departure in thought.

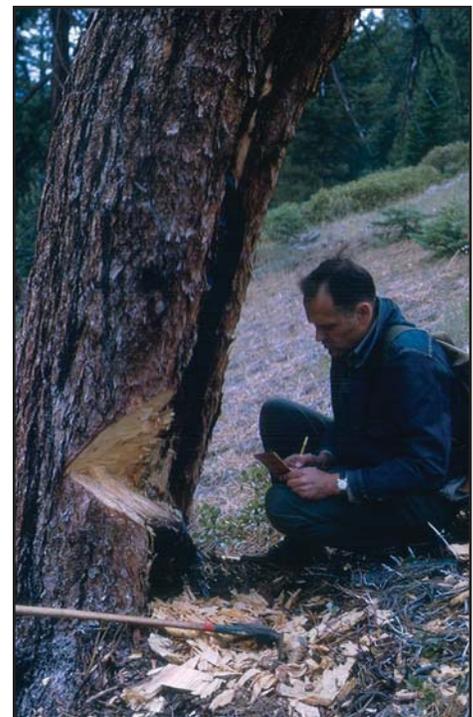
Many years of fire exclusion policy and committed fire prevention programs that promoted this belief were still firmly in place. The efforts of researchers and fire managers demonstrated resolve. Policy suddenly contradicted conventional wisdom. The conviction that fire belonged in the ecosystem and the willingness to act on that conviction is commendable and earned the parks a place in history. Today, fires in national parks are part of the experience.

In an effort to honor and learn from those who implemented these changes, the parks have invited these early researchers and fire managers back to discuss what they accomplished, what they did not, how, and why.

Fire managers look forward to their thoughts on today's management program.

However, we also recognize that this program, based on sound science, must be assessed for management into the future. This meeting will also ask the scientists and managers of today to discuss issues including global climate change and the results of fire exclusion on fire behavior. The parks' fire management program must adapt to these new environmental realities.

It is critical, as we review the historic decisions of 40 years ago, that we challenge ourselves to be environmental leaders in the next 40 years.

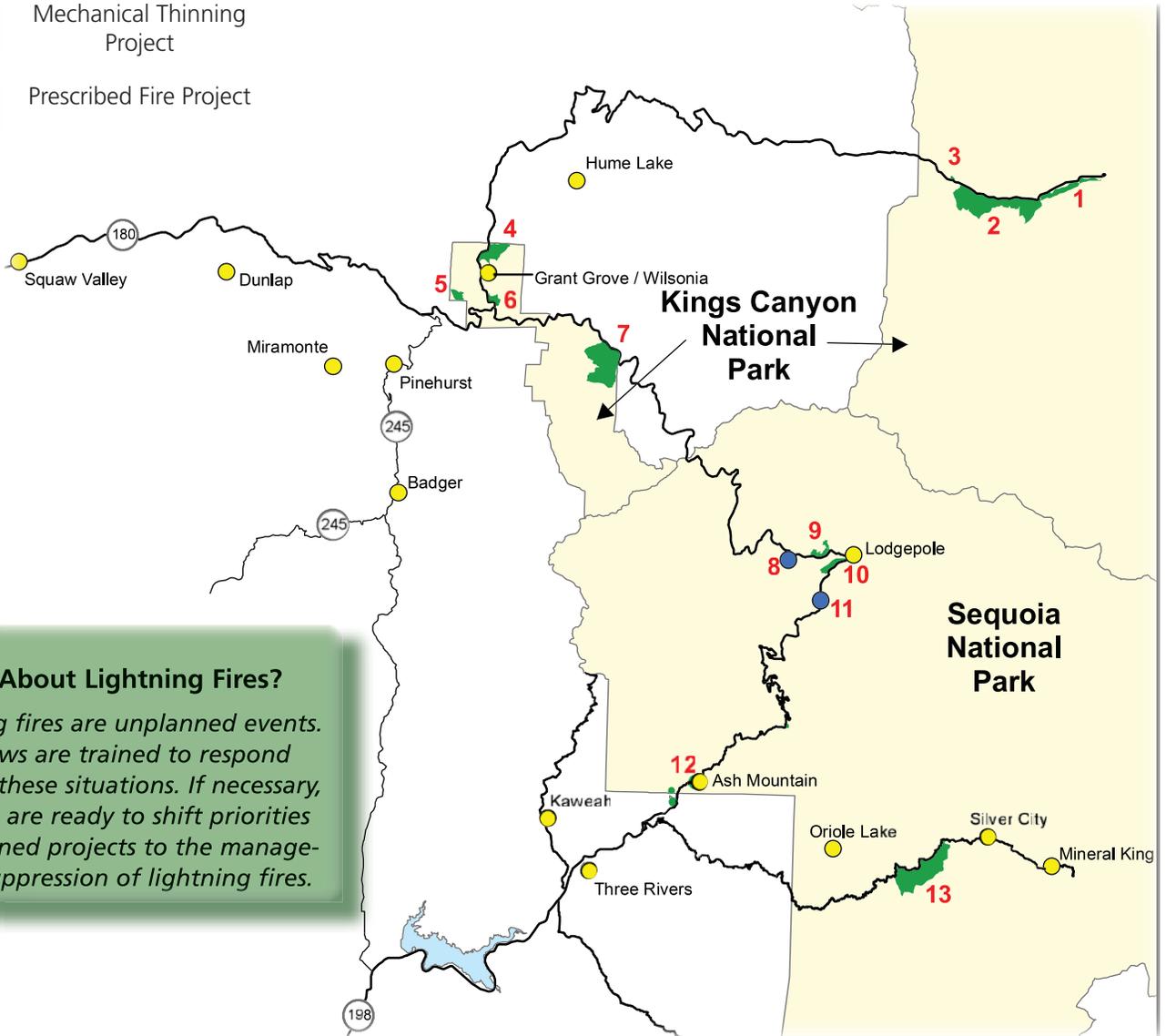


*NPS researcher Bruce Kilgore examines fire scar history on this Jeffrey pine near Rattlesnake Creek in Kings Canyon National Park.
NPS photo by Harold Weaver, 1968.*

Project Locations for 2008

The parks are planning **13 projects** this year totaling up to **3,486 acres** designed to provide community protection and re-restore forest health. Remember, the ultimate timing of burns depends on air quality, local fire activity, fuel moistures, and weather.

- Mechanical Thinning Project
- Prescribed Fire Project



What About Lightning Fires?
Lightning fires are unplanned events. NPS crews are trained to respond quickly in these situations. If necessary, the parks are ready to shift priorities from planned projects to the management or suppression of lightning fires.

1	Zumwalt (187 acres) Early summer prescribed fire	6	Azalea (64 acres) Fall prescribed fire	11	Quarry (10 acres*) Mechanical treatment
2	Cedar Bluffs (1006 acres) Fall prescribed fire	7	Hart (802 acres) Fall prescribed fire	12	Ash Mountain/Hospital Rock (25 acres) Spring/early summer prescribed fire
3	Sheep Creek (14 acres) Early summer prescribed fire	8	Halstead (15 acres*) Mechanical treatment	13	Davenport (858 acres) Fall prescribed fire
4	North Boundary (248 acres) Summer or fall prescribed fire	9	Wuksachi (89 acres) Summer prescribed fire		
5	Ella (70 acres) Fall prescribed fire	10	Silliman Creek (98 acres) Summer prescribed fire		

* Mechanical projects will be completed if funding is available.

Global Climate Change and Wildland Fire



NPS Photos of Darwin Glacier in Kings Canyon National Park taken by G.K. Gilbert on August 14, 1908 (Left) and by H. Basagic on August 2, 2003 (Right). This is one of many glaciers that are shrinking throughout the western United States.

Climate and weather affect fire profoundly, so climate change will have a huge impact on fire management in the parks and throughout the United States.

Wildland fire and its management are influenced by multiple environmental and human stressors including change of fire regime, fire exclusion that has led to an unnatural abundance of fuels for fire, more homes in wilderness settings, and non-native species that can influence fire regimes.

Exactly how global climate change will affect this already complicated dynamic is hard to quantify. Research suggests the following:

Longer Fire Seasons

This has been evidenced throughout the west with fire seasons starting earlier and lasting longer. Many areas are seeing fire seasons extend and season ending events (rain or snow that ultimately extinguishes fires) come later.

In the Sierra Nevada, precipitation in the mountains comes more often in the form of rain than snow and snowpack is melting earlier than in the past. This dries out the forests and makes them ready for fire earlier in the season.

From a fire management point of view, this is a great concern for many reasons. One is that the majority of firefighting positions throughout the federal government are seasonal in nature, just like wildland fire used to be. Fire managers struggle to provide adequate

coverage in early and late segments of fire seasons.

More Intense Fires

Climate plays a central role in shaping fire regimes and the weather that drives fire events. Fire managers are more commonly witnessing fire conditions, such as extreme fire events, that once were rare. Firefighter and public safety are always the number one priority of any fire. That means firefighters are more often seeing fire behavior that they can not safely respond to.

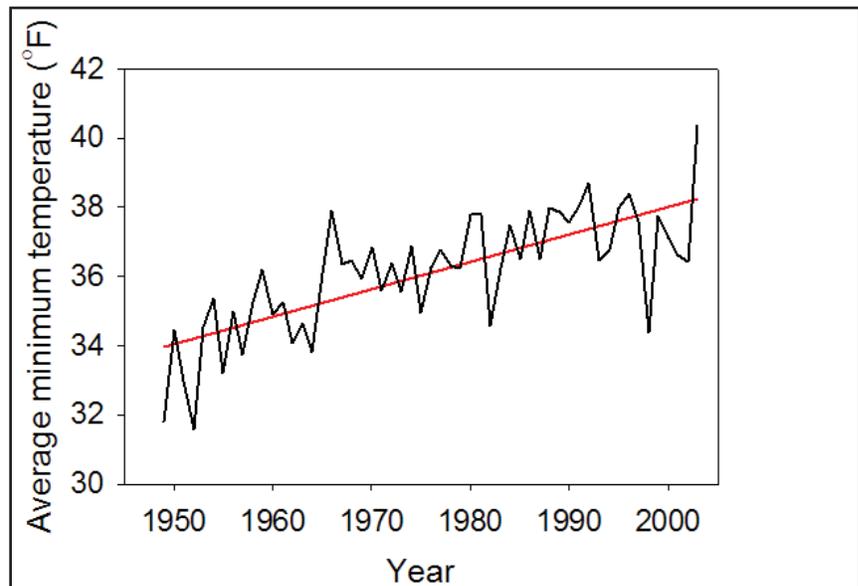
Harder to Manage

This more intense fire behavior makes fire management problematic. More often, traditional firefighting methods will be unable to control these large fires. Using methods like prescribed

fire to pre-treat known problem areas are also difficult since the weather conditions that meet the prescription parameter are less frequent. This is a catch 22. More than ever, fire managers are looking for tools to reduce fire hazards. However, our ability to safely do so is narrowing.

More Acres Burned

Faced with this increased fire severity and concerns for firefighter safety, it is not surprising that the number of acres burning in wildland fire each year is increasing. According to the National Interagency Fire Center, six of the ten largest fire seasons have occurred in the last 10 years (2007 included). Prescribed fire and wildland fire use are acres not included in these numbers.



50 years of weather data collected at Grant Grove show that the average minimum temperature has increased by almost 4° F. This brings earlier snowmelt and earlier fire seasons.



National Park Service
U.S. Department of the Interior

Sequoia and Kings Canyon National Parks
47050 Generals Highway
Three Rivers, CA 93271-9651

Standard Mail G-83
U.S. Postage and Fees Paid
U.S. Department of the Interior

INSIDE

List of Fire Projects for 2008

EXPERIENCE YOUR AMERICA



National Park Service
U.S. Department of the Interior

Writer / Editor
Deb Schweizer
(559) 565-3703
debra_schweizer@nps.gov

Park Superintendent
Craig C. Axtell

Fire Management Officer
David Bartlett

For More Information
[www.nps.gov/seki/naturescience/
fire.htm](http://www.nps.gov/seki/naturescience/fire.htm)

Postal Customer



Reducing Your Exposure to Smoke

In the foothill communities here in the southern Sierra Nevada, smoke is our reality. Whether it is present from a wildfire or a planned prescribed burn, here are a few simple actions that you can take to reduce your exposure:

Stop outdoor activity when smoke is present. Avoid physical exertion. Stay indoors as much as possible, especially seniors and children.

Close windows, doors, and outside vents when it is smoky. Set your air conditioner to re-circulate. Ventilate your home and work place when it is not smoky.

Drink lots of water, eat a balanced diet, and get adequate rest. A healthy immune system is the best protection against the effects of smoke.

Be diligent about taking any medicines prescribed by your doctor. People with pre-existing respiratory problems like heart or lung disease, asthma, or emphysema are at greater risk from smoke.

Don't bother wearing paper masks. These masks generally will not protect your lungs from wildland fire smoke, and they may make it harder for you to breathe.

Consult the local Air Quality Index (AQI) on TV or in newspapers for assistance in planning your daily activities. The higher the AQI value, the greater the level of air pollution and the greater the health danger.

Pay attention to your symptoms. Some people have undiagnosed respiratory problems that can be triggered by exposure to smoke. Adhere to the guidelines above. Consult your healthcare provider for further guidance.