

## **FRESNO BEE**

THOMAS M. BONNICKSEN: Removing excess trees would save forest

MARCH 2, 2005

John Muir called the giant sequoia "the noblest of a noble race." These massive trees, the largest in the world, only grow in the Sierra Nevada. Huge sugar pine and other large trees surround them. "They are giants among giants," wrote Berkeley Professor Joseph Le Conte when he saw the giant sequoia forest for the first time in 1870.

Today seven times more trees than is natural crowd this irreplaceable forest and each year it becomes denser. The forest is unhealthy and the fire hazard is extreme, yet we have done little to solve the problem.

Now extremists are suing to block a plan by the Forest Service to deal with the wildfire crisis in the Giant Sequoia National Monument. This modest plan calls for removing too few trees to offset even the number of new trees that grow each year. To be effective, the plan should remove more trees to halt excess growth and substantially reduce the number of existing trees.

It seems some people have forgotten the McNally Fire of 2002 that burned 151,000 acres and came within less than a mile of the sequoia groves. Jim Paxon, speaking for firefighters, said, "If fire does get in the Trail of 100 Giants, we won't be putting firefighters in there to try to stop it."

I know this forest better than most people do. I began in the late 1960's as a ranger in Kings Canyon National Park working on the first prescribed fires and interpreting them to the public. I also conducted research with my colleague the late Dr. Edward C. Stone (UC-Berkeley Professor) on this forest over the next three decades. Our work forms the basis for the Forest Service plan to restore the Monument.

In the 1960s, the Park Service cut intermediate size trees before using prescribed fire. They knew that prescribed fire is a crude tool that can cause more collateral damage to a forest than good. The most recent example is the damage it caused to the George Washington Tree. However, a chainsaw in the hands of an expert is surgically precise. As the late Dr. A. Starker Leopold, Professor and former Chief Scientist of the National Park Service, said, "A chain-saw would do wonders."

Unfortunately, extremists stopped the Park Service from cutting trees and decades of destruction by prescribed fire followed. They would rather see forests burn than cut individual trees to save whole forests.

There are twice as many intermediate size trees (up to 30 inches in diameter) today as

there were in the historic forest because of 125 years of excluding fire. Prescribed fire cannot reduce the number of trees this size without severely damaging the forest.

In addition, few people realize that unnaturally thick litter that now covers the ground generates so much heat when it burns that even a small fire can kill large trees by cooking their roots. The loss of thousands of huge trees from prescribed fire has become rampant in national parks.

Dr. Stone and I warned the Park Service about this terrible loss in 1976. The Park Service conducted a study that shows we were correct. Nevertheless, the destruction continues because they ignored their own study and us.

Now the Park Service has added the 3000-year old Washington Tree to the list of casualties from their prescribed fires. This is the second largest tree in the world named after the father of our country. Even so, the Park Service refused to protect it from a fire they deliberately let burn.

The fire took six weeks to reach the Washington Tree. The Park Service had plenty of time to act. Instead, they chose to stand back and watch the fire destroy its top and largest branch. This weakened the tree so much that a recent storm broke it in half. It will probably die.

How could the Park Service let their own prescribed fire destroy a national treasure and many other giant trees? They could have saved all of them. It only takes a few minutes and a garden rake to clear thick litter from around a tree to keep fire away.

I cannot speculate on why some people would rather see huge trees and whole forests killed by fire rather than use 21st century knowledge and tools to prevent the destruction. I just know that anti-management philosophy is no justification for sacrificing national treasures.

Let's use common sense and the best available science to make decisions about our forests. Our nation will lose too much by acting irrationally. Let Forest Service professionals restore the Giant Sequoia National Monument to its former glory. This is not about politics. This is about protecting our national heritage.

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# The Fresno Bee

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March 11, 2005, Friday FINAL EDITION

## **Fires vital for long-term health of sequoia forests**

BY RUSSEL J. WILSON

On behalf of Sequoia and Kings Canyon National Parks, I would like to respond to Thomas Bonnicksen's recent opinion piece.

Bonnicksen spent only two summers, nearly 30 years ago, collecting data in sequoia forests. The state of scientific and empirical knowledge regarding giant sequoia forests has grown exponentially since Dr. Bonnicksen collected his data. As a result, his ideas, though once in vogue, have been superseded by a more comprehensive and sophisticated picture of forest structure and fire ecology.

Sound data

The information that I'd like to share is based on current science, decades of field fire operations and a long-term monitoring program in our parks. The information has been collected, validated and published by the National Park Service, the United States Geological Survey and members of the academic community.

Giant sequoia trees have a close relationship with fire. By studying the fire scars on their growth rings, scientists know that over the last few thousand years sequoias experienced naturally caused fires an average of every five to 20 years. Therefore, a 1,000-year-old specimen could have burned approximately 60 times. To survive, and ultimately thrive, in this fire-prone environment, sequoias develop a thick layer of bark to insulate themselves from heat. Most importantly, fire allows these trees to reproduce by clearing the forest floor, creating sunlit forest gaps, adding nutrients to the soil and opening cones to release seeds.

Given this close natural relationship, the National Park Service initiated a prescribed burning program in 1969 to reverse the harmful effects that a century of fire suppression had caused, choking our forests with excess trees. Bonnicksen claims that this program has resulted in "decades of destruction" and "the loss of thousands of huge trees." Are things really this bad?

Park Service monitoring of prescribed fires in sequoia forests has shown that five years after a fire, the number of large trees (mostly pines and firs) is reduced by approximately 9%, which is still within the natural range. If the parks had never suppressed natural fires over the last century, these few large pine and fir trees and many excess small trees would have been cleared away long ago. Their removal makes space for other new, young trees and rejuvenates forest conditions for all kinds of species.

Not practical

Bonnicksen points out that chain saws can be a valuable tool for forest management. Indeed, the Park Service sometimes uses chain saws to thin forests around developments to protect public safety. So why not use saws much more extensively -- or even as a replacement for prescribed fire -- in national parks?

First, much of the forested land in national parks is too steep or remote to be thinned with chain saws and building expensive road networks to complete this work defies laws passed by Congress to establish national parks. Secondly, it is not cost-effective over large areas (\$2,000 per acre for mechanical removal vs. \$130 per acre for prescribed fire). Thirdly, no amount of mechanical removal will replace the role of fire in a giant sequoia forest. Chain saws do not replace nutrients or stimulate the production of seedlings.

Bonnicksen implies that the Washington sequoia could have been saved from fire simply by raking around the tree. He does not mention that the tree was hollow from past fires, or that the fire in the tree's crown most likely started from a blowing ember landing in the opening to the hollow, 200 feet above the ground. No amount of raking would have changed that outcome.

But why was the fire that produced the fateful ember allowed to burn in the first place? It was allowed to burn to restore resilience to a forest from which all fire, human or natural, has been excluded for more than a century. We cannot continue this exclusion. It is not possible, nor desirable.

### **Plan that works**

The efficiency of the National Park Service program has been proven over time. The public overwhelmingly supported our new Fire and Fuels Management Plan. This plan is balanced and scientifically sound based on the current level of knowledge (not information from a generation ago).

We have an integrated, multi-strategy program that consists of many different tools: fire suppression, wildland fire use (the management of lightning-caused fires), prescribed fire, and, yes, even mechanical fuel reduction around structures. We use each tool at the right time and in the right place to safeguard the public and preserve park resources.

***Russel J. Wilson is acting superintendent of Sequoia and Kings Canyon National Parks.***