



THE WOODS HOLE RESEARCH CENTER

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Giant Sequoia National Monument

One if by Fire; Two if by Axe

George M. Woodwell

The risk of wildfire in the Sierra Nevada is substantial. Decades of cutting large, fire-resistant trees for timber and suppressing fire have left forest stands with abundant fuel in the lower canopy and near the ground that is ideal for propagating fire. Logging the largest and tallest trees has allowed the sun to reach to the forest floor, made the forest warmer and drier, caused a younger forest with branches low on tree trunks, and opened the forest to air movement, all of which has increased fire danger. Fire suppression caused fuels to accumulate that would have otherwise burned in small ground fires and encouraged shrubs and small trees to grow into thickets, making future fires hotter and higher in the canopy.

How can our fire-resistant forests be restored? The approach favored by the current US administration, and implemented through the Forest Service, is to log more trees to reduce the possibility of losing them to fire. Others argue that the harvest of timber is what has made forests more flammable because logging is focused not on the flammable materials low in the forest, such as the shrubs and smaller trees, but on the larger trees that have greater value and are also resistant to fire.

The problem comes into focus especially acutely in the Giant Sequoia National Monument which was set aside by executive order of President Clinton, culminating many years of efforts by conservationists. The Monument embraces more than 50 percent of the groves of giant Sequoia. Most, but not all, of the remainder are on National Park Service lands in Kings Canyon and Sequoia National Parks. The Monument is managed by the Forest Service with its logging mandate. Therein lies the problem.

The Executive Order establishing the Monument strongly discourages logging. But the Forest Service plan is to reduce the fire hazard by continuing to log commercial timber in the Monument. While there is truth in the assertion that harvesting logs would prevent those trees from burning, that is about the limit of truth in this plan. The purpose of the Monument is to restore and protect the Sequoia groves and other features of interest in the Monument, including magnificent trees of other species characteristic of the region. That mission is jeopardized by Forest Service plans to allow increased logging of healthy, fire-resistant trees on Giant Sequoia National Monument instead of cutting large trees only as a last resort in a few specific instances.

This argument lies at the core of the lawsuit filed by the State of California against the Forest Service over management in the Monument. Logging leaves flammable debris on the forest floor, and the loss of overstory canopy not only encourages the growth of thickets of white fir and shrubs but also warms and dries the ground cover, thereby increasing flammability.

The Scientific Advisory Board established under the Executive Order accepted the challenges of managing the monument as defined by the Forest Service and suggested that if mechanical thinning were used, the thinning be followed by controlled fires as has been done over many years on the Park Service lands next to the Monument. Logging was not



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seen as a better choice than controlled burns for reducing flammability. In fact, the reduction in flammability by mechanical means was seen as of questionable value. Mechanical thinning was also seen as sufficiently complicated and expensive to limit its application to special areas that require protection such as the areas immediately surrounding housing and other structures.

The responsibilities of the Forest Service in the Monument require a commitment to land management to realize diverse purposes in land use, as well as to forest management. But attempting to manage the forest by cutting trees commercially will defeat all other objectives and assure the very losses that the Monument has been established to avoid. More information on the issues can be found at the **Forest Service** web site and at the web site of **Sequoia ForestKeeper** - then scroll down to Giant Sequoia National Monument Appeal. A plan that works will be comprehensive and will require restoring a fire regime that is consistent with the evolutionary history of that region. It will be expensive and difficult, but such a regime and the techniques for re-establishing and maintaining it are what is required.

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