

REDWOOD MOUNTAIN

By Harold Biswell
and Harold Weaver

John Muir explored Redwood Mountain in the summer of 1875. He found it covered with a most superb growth of Big Trees. “What a picture it made! In all my wide wanderings I had seen none so sublime. Every tree of all the mighty host seemed perfect in beauty and strength, and their majestic domed heads, rising above one another on the mountain slope, were most imposingly displayed, like a range of bossy, upswelling, cumulus clouds on a calm sky.”

Redwood Mountain, near King’s Canyon National Park, California, contains largest and purest stands of giant sequoia in existence



That same beautiful mountain may be burned some day by a huge wildfire. We need only to examine the fuels on its lower fringes to arrive at this conclusion. The mountain rises sharply, from woodland-grass ranges through the chaparral, debris-laden ponderosa pine, and mixed conifers, to giant sequoias (also called Big Trees) and the Sugar Bowl group at its top. The elevation changes from 2,500 to 7,000 feet, almost without a break, in only four of five miles.

Fire hazards on Redwood Mountain have increased in recent years as a result of debris accumulation and the increase of shade-tolerant trees in the understory. In the primitive forests, small fuel accumulations resulting from natural forest development were consumed by lightning fires. These reduced the fire danger to a tolerable level so that all-embracing fires were unknown. Thus, the feedback mechanism of natural forest fires prevented the complete destruction of the forest itself. In those early times, light fires must have been frequent on Redwood Mountain, which may account for its present fine grove of Big Trees.

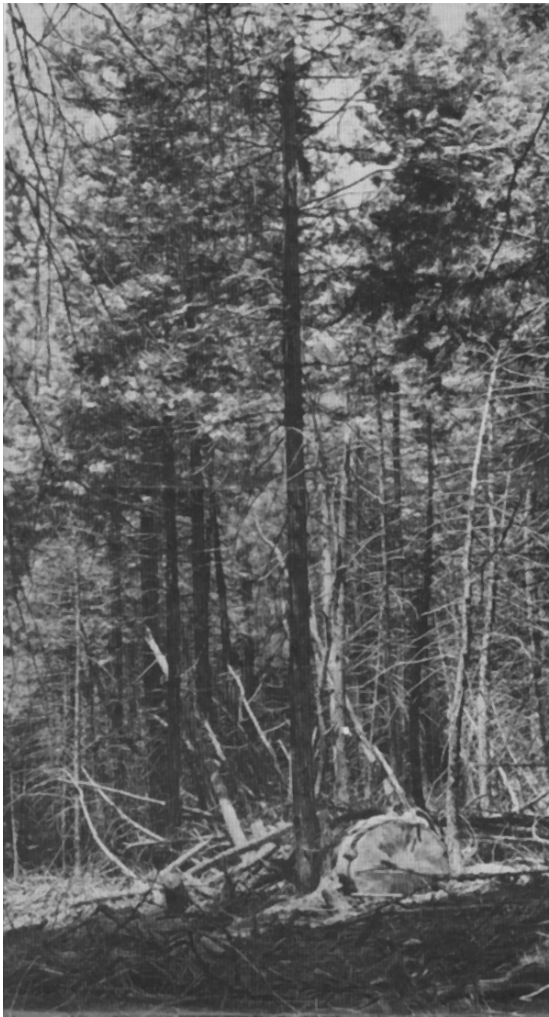
Sugar Bowl group of giant sequoias on the top of Redwood Mountain. Seldom seen because of inaccessibility.

Heavy Fuels and dense understory of shade tolerant trees in Whitaker's Forest near Sugar Bowl create fire hazard



After Muir left the Redwood Mountain area he traveled southward. Between the Middle and East Forks of the Kaweah River he saw a fire enter a grove of giant sequoia trees. This was in early September, about the driest time of the year. While John Muir was not a fire expert, he was a keen observer and his description is interesting and worthwhile:

“The fire came racing up the steep chaparral-covered slopes of the East Fork canyon with passionate enthusiasm in a broad cataract of flames.... But as soon as the deep forest was reached, the ungovernable flood became calm like a torrent entering a lake, creeping and spreading beneath the trees.... There was no danger of being chased and hemmed in, for the main forest belt of the Sierra, even when swift winds are blowing, fires seldom or never sweep over the trees in broad all-embracing sheets as they do in the dense rocky Mountain woods and in those of the Cascade Mountains of Oregon and Washington. Here they creep from tree to tree with tranquil deliberation, allowing close observation....”



Roadside logging debris in mixed conifer forest only two miles below Sugar Bowl group of giant sequoias



Brush debris with pine needles creates extreme fire hazard

Heavy debris of ponderosa pine and incense-cedar is on the roadside toward Redwood Mountain at the base of a steep slope



From this statement, we might ask whether John Muir knew of a single case of crown fire in the Sierra Nevada. It is clear, however, that he knew about such fires in the Rocky Mountain woods and Cascade Mountains of Oregon and Washington. In 1964 the University of California at Berkeley, in cooperation with the California Division of Forestry and its Miramonte Conservation Camp, started studies of fuel reduction on Whitaker's Forest. This forest is on the western slope of Redwood Mountain, about one mile from the Sugar Bowl group. Fuels are removed by cutting and piling small, crowded understory trees, and burning this material, together with flammable debris accumulated on the forest floor. No pruning is done, so that the end result is a "natural" appearance. The cost of hazard reduction is high, but it should be borne in mind that such measures remove 90 years' accumulation of debris, and created low fire-hazard conditions that will last for many years. No monetary value can be placed on a giant sequoia forest. It is a priceless heritage to be preserved at any cost.

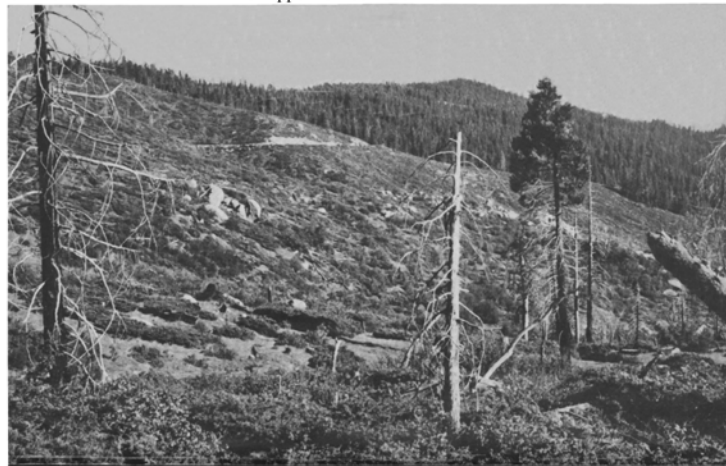
Whitaker's Forest after removal of thousands of pounds of dead material



Portions of Whitaker's Forest logged between 1873 and 1879 were seeded to giant sequoia to create this dense stand.



Photo shows the result of a wildfire in 1955 only a few miles north of Redwood Mountain. Will this happen to Redwood Mountain?



Prescribed burning will be tested later in Whitaker's Forest, as a means of maintaining low fire-hazard conditions. This process involves the skillful application of fire to natural fuels under conditions of weather, fuel, soil moisture, and the like that will allow confinement of the fire to a predetermined area and at the same time produce enough heat to accomplish the objectives of the firing. The flames of such fires may not be higher than a foot or two. A prescription for this type of burning is concerned with such questions as why, where, when, and how to burn. The proposed fires will simulate the natural fires that functioned so well in the primitive forests and kept the fire hazards at a low level.

Today there is a growing concern that protection against wildlife, while important and essential, is not of itself a substitute for natural habitat conditions. Many biologists now realize that before the arrival of the white man, fires were a natural and recurring event in the forest environment. One of the first to realize this was Dr. Willis Linn Jepson, who, in describing the Sierran forest in his *Trees of California*, stated that "Indeed the main silvical features, that is density, reproductive power and dominance of types, are in great part expressions of the periodic fire status." The giant Sequoia and the entire Sierran forest were well adapted to fire. Protection from fire, therefore, was an "unnatural" event, one which has initiated far-reaching changes in the plant and animal communities of the Sierran forests.

The present fuel modification at Whitaker's Forest not only reduces fuels to lessen the chance of a holocaust from wildlife, but it also opens up vistas of the Big Trees and removes competing vegetation. Such treatments could have wide application in forest preservation and management, and in the prevention of totally destructive wildfires.

Redwood Mountain has been recognized as a "powder keg" area for some time, and although the situation remains virtually the same, a few fire defenses have been built up recently that may reduce the odds of the mountain's being destroyed by wildfire. A continuous fuel break a few hundred feet wide has been built in the foothill country to keep any fires starting in the lower country from reaching the higher timber. Also, a lookout has been established with direct visibility into Redwood Mountain, and facilities for initial fire-fighting attack by air have been improved. All of these must be considered minimum. More needs to be done *now* to save Redwood Mountain with its superb Big Trees. These have been growing pretty much according to nature for about 3,500 years, but in the past 75 years, fuels have built up to extremely dangerous levels.

The question is: Will we really act in time, with sufficient measures to save Redwood Mountain from wildfire?

