

# Thoughts on "Form Thinning" in California Redwoods

Jim Able

The "form thinning" concept probably most sums up my approach. This approach was first impressed upon me in 1968 when I went to work for then Georgia Pacific. They had been doing thinning trials on second growth redwood since 1955 and had a lot of good data from their thinning plots. Unfortunately, these plots have now been lost.

The essence of "form thinning" was that if you thinned no more than about one third of the volume during a 10 year period you replaced the harvest volume plus in 10 years. The focus was not on what tree to cut but what tree not to cut. That opens up a wide range of options.

It also gathers lots of criticism. So spacing does not become as important as it does in the traditional "mechanical thinning". I suppose because the better or more desirable trees have already expressed some sort of dominance or hierarchy. Harvest trees come from all size classes just as long as they are not the best formed trees. Sometimes the poorest trees are the largest as they may be the leave trees of a past "high grade". Redwood sprouts and the amount of energy from those sprouts is incredible.



I also think, based upon observations and the data from the old Georgia Pacific growth plots that I was able to salvage, that re-entry into a 30% or less harvested stand is optimal at 7 years. Probably 5 years would be the most frequent re-entry possible and might only be considered if one had a financial problem. In the Georgia Pacific plot, there was a 15 year interval and the change in ring count indicated about 80% of the growth occurred in the first 7 years and 20% in the last 8 years. I do not think that suppressed redwood recovers very well when exposed to light. It may have a lot of diameter growth but does not usually exhibit lots of heights growth. We often cut down small poor growing trees so that they will sprout. The sprout will often reach the height of say a 20 year old tree (suppressed) in a few years.

In Humboldt County, California, the two biggest problems when doing these thinnings is wind throw and bear damage. We get winds close to 90 miles per hour and stands that are opened up blow down (excess of 40% cut). Winds come from the South so trees in sprout clumps are initially harvested on the North side of the stump. Strongest rooted are on the South side of the stump.

Bears like the cambium layer in the spring and climb (mostly fast growing trees) as high up as they can climb and peel the bark off like a banana. The sap wood in redwood rots very easily. We have found that if one leaves a crown closure of over 50% then bears tend to stay away. A 30% cut using the "form thinning" almost never alters the crown canopy by more than 10% - 20%, and therefore keeps the bears off our client's trees.