So, What Does It Feel Like to Be an Ax Murderer?*

October 2013 - * Text adapted from a section by the same name in *Natural Process,* ©2001

Our three stands of redwood total but three acres (laid flat) along the sides and bottoms of ridges, some on slopes of nearly 200% (60°) nearly 100 feet high. All told, it's about sixty thousand board feet of timber. Above is the area that I logged the most heavily.

October 2013
Not our property

In the first logging jobs from 1860-1910, they didn't cut trees low to the ground, but it didn't matter much in that when they were done they burned the slash so hot that it killed the buds on the stump itself. That way, new trees sprouted from the root crown instead, with a better opportunity to develop structural support around their bases. You can infer from the hump how much soil was lost.

Accordingly, the State banned the practice of slash burning. Redwoods that were not cut low enough, then sprouted shoots out of the side of the stump, bending upward in search of light, growing away from each other while hanging from a rotting foundation.

The burned stump holding these unstable trees is eight feet across. Fixing these old problems typically consumes 20% of the total revenue from a timber harvest. Worse, the wood from gravitationally stressed logs like these is apt to curl when it is milled.

Off this single stump, I have 10 trees over 100 feet in height within a 12-foot circle perched atop a minor cliff about 15 feet high. The leverage against this steep slope of loose fluff on hard sandstone is such that it will eventually fail. It will be very tricky to log without damaging the uphill trees. The reason I have not fixed this problem yet is that I can't afford it. I could if I could sell the logs.

Competition among the shoots makes them bolt for light. When the wind blows, these spindly trees sway big distances at the top. They slap into each other. Sometimes the trunk breaks off entirely. Shearing and collision breaks off branches between trees while a lack of light starves branches toward the middle of the cluster. The branches they retain are either at the very top or directed away from the center of the original tree in the same direction in which they lean. The right thing to do was to thin them.

November 1989

It takes clearing the junky trees out of the understory to see the others well enough to make choices. There is also more room to drop them without getting them hung up or crunching into anything you want not to injure. These are usually either unbalanced, within five to ten feet of a larger, straighter competing relative, or severely kinked higher up. Some lost their central leader and elected a branch for the job. Some of were infected with rot at the junction of the kink (It really makes you think as you feel the flexure while climbing the top section). Some tops are spilt in two (though less often than Douglas fir), especially when poking out of an oak canopy atop the ridge.

The trick was to remove the less desirable trees in a manner that minimized injury to the keepers. This often involves putting on spikes and a cable-belt, climbing 80 to 100 feet up on one of these weak spindly beasts, and cutting the top off in a way that is safest for the other trees. They say that topping it higher is safer (they say that when they are standing on the ground). You see, there is this little matter of Newton's Third Law**:** When the top starts to fall, its center of mass shifts to one side. The trunk responds to that lateral load, bending like a big leaf spring (pun intended). Once fully loaded up, it whips back, and tosses off the top with the perpetrator waving around like a flag on what's left. The Doppler-shifted warble of miscellaneous expletives echoes through the forest…

Then you clamber down (shaking) and get out the trusty felling saw. Now drop the trunk where you can get it out and not hurt anything. Often that process involves pulling it over center, and bless you if you can keep it from sliding back down the hill (oh, and don't get crushed if it does)! Rather than harm a good tree, at times you drop it in such a way that you know it will shatter. For your trouble and personal risk it is not unusual to get a kinked log, with lots of knots and… a rotten core inside that tree you just climbed. It really gives you a warm feeling about the risk you just took and gets you all jacked up for swinging around on top of the next one!

April 2000 * This was estimated before the 'bear zone' hypothesis

By that time, 3-5% of the wood was down or about 1/3 of the trees by number. Count the rings. One was 90 years old and seven inches in diameter, bark and all. These were simply cut up on the forest floor laid across the slope to slow the rainwater and build some topsoil. Those that were sound were carried out in 12' pieces, maybe to become fence posts. It was steep.

Those “next ones” are usually bigger. Please look carefully at this image. The lower stump is almost four feet across. I want you to think about wielding a saw that big felling a log that big on a slope this steep. I let a professional cut these two.

The purpose for this work was not to get logs; it was to improve the forest. There was no plan to use the wood. Now that the logs were on the ground, before they were bucked off into lengths, the next job was to come up with a legal set of uses. You can’t sell the logs, not even in trade for labor; the State holds that as illegal commercial logging. It used to be that one could get a permit and *then* sell the logs, but the $60,000 (2010) cost of the permit exceeded the proceeds from legal limit of what I could have logged. Of course, that point is now moot because the way my property is now zoned, it is illegal for me to sell a single log off my property.

People get all worried that thinning these trees on steep slopes can cause landslides. It’s a theory. It’s wrong too. In fact, careful logging of a second growth redwood forest may help to *prevent* landslides. Consider the example at left:

I am guessing 250* years ago, a single redwood on this slope became large enough to break loose and impale itself at the bottom of the ravine below. It was buried by the landslide that came down with, and probably after it. The log sprouted and grew into two full-sized trees, each about 24” dbh.

About 120 years ago, white guys with steel tools came along and whacked them both. Another landslide buried the stumps. Torn roots in the landslide medium sprouted 31 trees in a 20 ft diameter circle.

When I got there, a third were dead, 16 were over 6” and nine over 20.” There were three to five in the process of fusing together that were undercut by a drainage channel through the alluvial substrate. It was a wall of wood with half a foundation.

What did I do with this mess? In 2000, (7 years after the initial logging), I got some help from my friend, Steve, whose family has been working these trees for fifty years. Steve needed a low-key practice job to help figure out if he had a career left after some serious back surgery. After I whacked out the runts, the two of us set up to fell about a third of the larger trees. We planned to drop them all through a fifteen-foot gap between two trunks 40 and 60 feet away. One of those two would have been snagged and broken by the ones we were felling through the gap, so I climbed it to where it was about five inches across (twice) to set a rope. Then Steve bent it about 25' out of the way. I climbed each of the others in turn and set the chokers. Steve pulled them back over center through the gap on a 300-foot-long, 5/8" high-lead cable over a snatch block in a fir on the ridge that we used as a gin-pole.

Once the trees were down, I got to climb that slope, buck the tangled logs, and set chokers. There was no winching or skidding because Steve could back the loader down the ridge as a counterweight with the cable over the block in the fir. Once the logs were out, then came the hard part: a week spent digging out that old double stump. There were two trees perched on its twin tops: one held with but a few cable-like roots winding through rotting wood and the other was perched on top of the solid half of the old stump held by an arc of roots grown together down one side. I removed four feet of dirt with a hand shovel and a Pulaski (a combo ax and adz) with which to cut the roots, redirecting the water away from the unsupported alluvium into the middle of the cluster (where all the roots are). Then we sucked out the stump with a double purchase gun-tackle on said 5/8" cable, and popped out a dozen or more root suckers the same way. I set a choker 40' up a tree with a block on the end and we swung the stump out of the cluster.

October 1999, The Wall of Wood (Before)

April 2000 , The Wall of Wood (After)

Now, how did I know about that 250-year history starting with the landslide? How did I know how these trees ended up where they did and why did I think that the action I was taking had a good chance of preventing a problem? When that stump popped out, **I found that old log** from that original landslide still under the alluvium, dead, but still sound. I dug out that old stump and learned that history while I was doing the job. That is how I know what happened 250 years ago.

From what I have seen, the environmentalists have it dead wrong. They demand no logging on steep slopes because the soils would be disturbed, which might cause a little sluffing that they fear will release sediment. That may be true, but the real question is, how much erosion is caused by thinning compared to not thinning? If we don't log those slopes, the trees get large and heavy enough to apply sufficient load to the slope to break loose, just like that tree 250 years ago on my place. Landslides like that are all over these mountains (you'll see one later, with a log underneath just like this one). They choke with weeds and weep silt for years. Nor are they all stable. By contrast, a redwood stump cut to the ground line will sprout, thus making a living retaining wall. In other words, the biggest risk of sedimentation in streams from redwood is if we DON'T log big trees on steep slopes.

On the other hand, because I thinned that cluster that grew from that old stump, with the weaker trees removed, those that remained sprouted new branches into the gaps on the side that needs the weight. They thickened and straightened. The bark will continue to thicken to protect the trees from future fires. They will be more capable of forcing roots around their perimeter. It looks like this…

This is the same cluster from above (this second photo was taken from about 75 feet farther down the ridge to the right). One of the six trees is behind one of the two trees in the foreground that are not part of the sprouted cluster in the story.

Yes, this is the same cluster looking up (taken with different lenses) showing the recovery. In 2001, I wrote in *Natural Process* that these trees would sprout branches and straighten, but in 2009 I could hardly believe the change! They even realigned themselves to a degree in their race for light. In another decade or two, this cluster should be thinned down to three but at that time I can also allow a few of the sprouts to develop. Then it can probably go for another hundred. Slower growth makes better trees and better lumber.

Another consequence of stupid rules and regulations is that it is difficult to remove infested trees in time to save the others around them. This Douglas fir (left) was infested with bark beetles which then induced sap rot *(Cryptoporous volvatus*- inset). I should just be able to call the mill and have them come get the logs while they are still sound as they drive by from some other job (that doesn't exist because we have killed the local timber industry). As it is, to save the other trees myself would cost me probably $2,000 per log. You can thank the environmental activists and ask them who gets to log their trees instead for a fatter profit as a result.

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