

Mechanical Thinning

DON'T TRY THIS AT HOME!



By Rachel Roberts



The author and her chainsaw in Arizona, 2005.

Photo courtesy of the author

Sawdust and gasoline filled my nose as I positioned my saw for the final cut. After three days of working with the chainsaw, I was finally getting the hang of it. The saw didn't seem as difficult to maneuver, it was taking less time to bring a tree down, and I was getting a better understanding of how to angle the cuts to get the tree to fall in the right direction.

I took a step closer to the tree and hit the throttle. As the saw cut into the wood, it made a strange whirring noise and then stopped suddenly. I looked down, following a thread from the saw's teeth to the protective covering on my right leg. I had broken the number one rule of saw crew: don't cut your chaps.

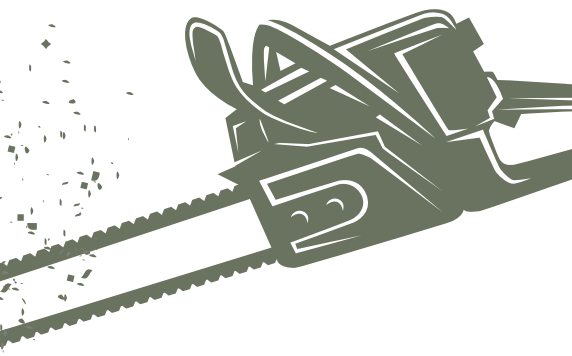
It was the summer of 2005 and I was working on what was going to be my last "fun" job before graduating from college and entering what I was sure would be a world of office-based drudgery. I had taken a job with the saw crew for the Coconino Rural Environmental Corps, based in Flagstaff, AZ. By the time I joined, half of the crew had been trail-building for three months and was accustomed to carrying heavy tools into the backcountry for days at a time—I was not.

Training consisted of a couple of weeks of learning fun outdoor skills that we

would never actually use—like orienteering with a map and compass—as well as classroom-based chainsaw training. Most of what I remember about chainsaw training came in the form of videos with instructions like “never position your saw above your shoulder” and gory photos of what happens to people who don't follow those instructions, which have stuck with me to this day.

Besides those gory lessons, we also learned a little about forestry. Flagstaff sits in the largest contiguous tract of ponderosa pine forest in the world. When white settlers first started to arrive, the forest was open and sparse, wide enough to drive wagons through. This was due to regular, smaller brush fires, which would burn up smaller growth while the larger trees survived the fire through adaptations such as fire-resistant bark. But a hundred years of fire suppression had led to forests choked with smaller trees and brush. These smaller trees and brush created a ladder into the forest's crown. Once a fire spread to the crown of one tree in a densely-packed forest, it was easy for it to jump to another, and soon the whole canopy would be engulfed.¹

Reducing fuel for the fire could be accomplished one of two ways: through prescribed burns, which become essentially



Saw crew clearing cut wood.

Photo courtesy of the author

a planned forest fire; and by removing smaller trees with chainsaws, a process known as “mechanical thinning.” Since people tend to dislike fires near their homes, mechanical thinning was the preferred option in the wildland-urban interface, where we would be working.

I learned during the first week of actual cutting that just because a tree is less than 12 inches in diameter, that doesn’t mean it’s easy to cut down. There are many factors to consider when deciding which direction to fell a tree: the slope, a safe escape route, sufficient space for the tree to fall, and lopsided growth that could make it fall in strangely—and dangerously—unpredictable ways. Although we covered these things in class, they were harder to account for in practice. What if there wasn’t any open space downslope? What if the ground around the tree was rocky? The actual cutting was also harder than I had expected. In particular, I was having trouble keeping the blade on my 15-pound saw straight as I made the precise 45-degree face cut that would determine the direction of the fall.

On the day that my chaps met the business end of my saw, I thought I’d actually gotten the cut right, until I wasn’t able to cut at all. Chaps have multiple layers of Kevlar thread that are designed to get caught in the blade and stop it from turning. This is especially

important during the back cut, when the saw is in close proximity to the inside of your back leg and your femoral artery: a major artery which, if cut, is a sure way to bleed out quickly. When I stepped into the saw, it was that Kevlar that made the chain stop.

The chaps changed what could have been a potentially fatal accident into a minor inconvenience. Nonetheless, cutting them was considered very bad form. I’d heard rumors about people being kicked off the crew for cutting their chaps twice. Some of the veterans advised me to avoid being the first person in the crew to cut my chaps, but by day three I had failed to meet that goal.

My supervisor told me I would be off the saw all day and instead would be picking up the pieces of debris—logs, brush, etc.—that littered the forest as we worked. It didn’t do much for fire reduction if we left it all on the ground, after all. He also explained all the things that were wrong with the cut I was attempting, and re-cut the tree to fall in the opposite direction. While my femoral artery was intact, my pride was not.

As I picked up logs, I brooded on my failure. I had always been good at work before. I followed directions and usually anticipated what someone needed on a project. But here, when tasks were accomplished not by manipulating a

spreadsheet but by using my hands to manipulate a dangerous object, I was the worst on the team. I considered quitting, but spending the summer at my parents’ house without a job seemed worse.


When we returned to work the following Monday, I was put on a smaller saw, something I could handle a little more easily, without feeling the need to get my leg under it. Although this saw was still a professional, heavy-duty chainsaw, my face reddened when one of my colleagues, a woman about my size, asked “is your saw smaller than mine?” Yes, yes it was.

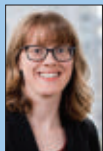
On our second week on the saws, two people on another team cut their chaps. One of them quit, in a dramatic scene that involved tears and loud swearing. My rather discrete chaps-cutting incident was soon forgotten, at least by the other members of my crew.

My supervisor, who had not forgotten my incident, spent additional time with me going over how to do cuts. My trees stopped leaning quite so far to the left when I cut them, and I started yelling “timber!” with a little more confidence. I started to enjoy the work more. There is, after all, something extremely satisfying about turning a tree into intentional, rather than accidental, firewood. But my confidence only extended so far—when people started bringing empty cans to work to see if they could get their tree to

land precisely on them, I did not join in.

Our work was not limited to thinning pine trees. We spent some time in the high desert clearing juniper along pronghorn antelope migration paths. Decades of fire suppression had also led to the desert becoming too choked with juniper for animals to move freely. Although juniper wood is very hard and dulls chains quickly, it also grows like a low bush and does not require nearly as much precision to fell safely as a pine tree does. For me, that meant it was more fun to cut.

The most satisfying part of the work was walking into a forest that was a tinderbox—full of brush and small trees—and at the end of the week looking back and seeing an open forest. It reminded me of a solo backpacking trip I had taken on the Mogollon Rim. Fire had come through a few years before, and the forest was open, much like the photos of a healthy forest we had seen in training. I'd lost the trail under a bed of pine needles, so I sat down to contemplate the map. As I tried to figure out which way to go, I heard a low rumble, and an entire herd of elk ran past me, maybe 50 yards away. Juveniles, then the cows, and finally the bull at the end, running through the open forest. 



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NOTES:

1. Northern Arizona University, Ecological Restoration Institute, Effects of Forest Thinning Treatments on Fire Behavior, <https://nau.edu/eri/resources/for-policymakers/effects-of-thinning/> (last accessed Oct. 26, 2018).

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