

Forest Management

One day about fifty years ago, thinning east of Snow Lake, I dropped a tree and was lopping it up when I came upon a little spotted owl sitting on one of its branches. I put it in another tree and went back to work. I've always wondered how it handled the trauma. Terrifying from the owl's perspective. Later that year, working on a relatively small logging operation high up in the back country of the Sangre de Cristos, I was sitting on a log with virgin spruce forest and a beautiful dusting of snow behind me, watching the dust and devastation of an ongoing clearcut in front. At the other end of the log an ermine was sitting, watching with me.

Back in the '70s, when we thinned the Southwestern forests, I'd killed about a quarter million trees before I realized that we were doing more harm than good. In the short term we were reducing fuel load and ladder fuel and speeding up growth, but we were setting up a disaster in the future. We let in the sun. If there's water, sunlight, and a bit of nutrient, something's gonna grow. In a natural forest, where a fire has been hot enough to kill the grass, if seed drops are dense, competition for light forces vertical growth and trees grow straight and tall with no low branches. Until it eventually thins itself, doghair is quite vulnerable to fire and might have to start over many times, but when it finally gets a chance, it matures into a tall, fire resistant forest that can endure for many centuries. Selective logging and subsequent thinning lets the light in. Lacking competition for light, trees grow short and fat with lots of low branches and there's constant growth of new shrubs and trees at ground level, filling in the ground to canopy fuel ladder, especially if cattle have taken the grass. A selectively logged and thinned forest will never grow into a tall, mature, fire resistant forest until it burns and starts over. It will always be vulnerable to stand replacement fire unless it is constantly thinned, and will never produce anything but extremely poor quality lumber full of knots with a very high volume of logging slash. It will most likely end up as stand replacement burn scar.

Most types of forest are not steady state ecosystems. They have a distinct birth, life, and death, on a time scale of hundreds to thousands of years. Inappropriate thinning of young forest is like feeding growth hormones and steroids to children to make them grow up faster. You don't get what you're hoping for.

Most forest is born the morning after a fire. In the past, the common course of a forest fire was to crown during the afternoon and run on the ground in the night and morning. This resulted in a patchwork of clearings, varying in size from a few trees to thousands of acres, amidst a forest made much more resistant to fire. Every few centuries, an exceptionally hot, dry, windy season would come, and in places where the luck of the draw had kept fire away, massive crown fires would take hundreds of thousands of acres. This leaves a lot of burn scar far from any seed trees, so it might be centuries before it gradually fills in with new forest. As global temperatures rise, very few of the burn scars will return to what they were.

Where the fire has crowned, the intense heat has sterilized the soil. Mother Nature doesn't start a new forest with trees. Over the next few decades a progression of life stabilizes the soil. Bacteria, wildflowers, weeds, shrubs, bushes, grasses, deciduous trees, and finally conifers. Under certain conditions grasses will dominate and meadows will form. Under most conditions, dependent on proximity to seed trees, soil moisture, and

wind speed and direction, thickets of varying density eventually sprout and immediately begin to compete for light, water, and nutrients.

Thinning can be good for a forest, but not the way we're doing it now. Appropriate thinning of new forest is about taking out only the trees that have lost the light, but never let the light in. This frees up water and nutrients and covers the ground with a thin layer of mulch, which lessens forest flammability a bit and speeds up growth, shortening the age of vulnerability till they're tall enough to turn into a mature, fire resistant forest. Intensive thinning for fire control will be useful to protect communities and in places thinning can help reestablish the forest mosaic if we can keep the cattle out and bring back the grass, but the goal is to protect and nurture as much doghair as we can. Because they visualize clearcut as massive devastation, environmentalists have put a stop to most clearcut, when small, contour related clearcut where we start new forest, done in combination with fire and gentle, non-obtrusive logging where we start new forest is much closer to nature than selective logging.

The logging boom is over. We've taken almost all of the world's forests. It will be centuries before we have anything but tree farms and second and third generation logged forest pumping out pulpwood and extremely poor quality lumber. If we drop the timber yield by about 70%, small scale salvage logging done with unobtrusive methods would be much healthier for the forest than cutting new timber. We can't let mindless capitalism drive the final destruction of our forests. Steel, stone, adobe, plastic, and a lot of other materials are much stronger, more durable, and fire resistant building materials. Don't build with wood. We need to find other jobs for most of the logging industry. This is essential if we're to let Mother Nature regrow the forests. This will require a fundamental change from a mindset of growing trees to a mindset of growing forests.

Today's forests are nothing like they used to be. A tree too small to bother with a hundred years ago is a rare find today. We're cutting 2by4s out of six inch trees full of knots. Most of the lumber on the market today is twisted, crooked, and full of knots. By the time it gets to the construction site, much of it is only fit for the burn barrel. Some of it is finger-spliced together out of whatever short pieces they could get between the knots. The result is seriously sleazy construction. The purpose of logging today is no longer about building anything. It's about the massive mindless momentum of the drastically over-regulated construction industry and it's about jobs in our obsolete and ossified capitalist system of government.

First came massive clearcut along with sheep and cattle. Next came fire suppression and selective logging and thinning. Next came the urban interface. Now comes climate change on an inter-glacial scale. For many decades, all species over almost all of the planet have been moving uphill and towards the poles as the climate warms. Atmospheric and oceanic warming in combination with increased particulate smog are expanding the Hadley Cell, driving the deserts toward the poles. Here in the inland Southwest, contrary to the conventional forecast of drought, we are likely to be cyclically south of the desert zone and will be warmer and periodically wetter, but often without snow. This does not bode well for the mixed conifer forests, as they are dependent on a shaded snowpack to make it through the spring winds. Unfortunately, California will probably have more dry years, with a just enough wet ones to grow new fuel.

At some point in the not too distant future, we'll either get our shit together or this civilization will collapse. Either way, at that point, greenhouse gasses and particulate

smog will substantially decline, and the snows of the new Northern Climate Zone will expand into much of the Northern Hemisphere; shifting the climate quickly into cold. It would help if we could protect as much seed forest as we can until the climate is once again ready for fir and spruce.

It will take centuries for our forests to regrow if we let them and they won't be like they were. We need to change the focus of our efforts from controlling nature to helping nature. The challenge is how to reintroduce fire into a forest that is totally altered and has lost its ability to live with fire in the midst of a major warming trend. The only way for a forest to mature into a steady state, fire resistant forest is to let the doghair fight it out for the light. A young natural forest is extremely vulnerable to crown fire until it matures, but a selectively logged and subsequently thinned forest after forty years or so of new growth is even worse, and has no chance of ever becoming a tall, mature, fire resistant forest. Most of the big fires in the American Southwest have been in forests that had been selectively logged and thinned thirty to fifty years previous. Most of them have been overgrazed. Most of them have been subject to excessive fire suppression.

Mother Nature uses fire for fire control; we need to work with Mother Nature to better manage fire in order to help with the burn. Contour related strip clearcut where we start new forest, in combination with the big air tankers would limit the big fires, and a fleet of A10 Warthogs could stop most initial starts and spot fires before they get away.

We need to help with the return of the beavers in order to re-hydrate our forests. The current increase in storm intensity, in combination ever larger burn scars, makes it very difficult for them to get a foothold. There's a lot that we can do to slow the water down and let it soak in instead of flooding the lowlands and ending up in the ocean instead of our farmlands.