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# WILDERGARTEN 4.0

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There is a reason for this. This is a dynamic work that will be updated over time. I have no intention of defending conditions that no longer exist or explanations that have since been relieved of unintentional ambiguity or error.

Please, use a link. Thank you.

Revision History This book was originally produced under the name *The Responsible Party* for which there were two revisions, 1.0 & 2.0. Major revisions are for complete rewrites. Decimal revisions are for revised chapters or navigational changes and are not archived. Back revs are viewable by the numbered links below.

1.0 2.0 3.0 3.1 3.2 3.3 3.4 3.5 4.0

Vande Pol, Mark Edward, 1954 –

Other writings by Mark Edward Vande Pol:

Natural Process: That Environmental Laws May Serve the Laws of Nature, ©Wildergarten Press, 2001, 454pp, ISBN: 0-9711793-0-1, LOC Control #2001092201.

Shemitta: For the Land is Mine: ©Wildergarten Press, 2009. Contains: 217pp text, 980pp overall, 14 picture books, 2 tables, 963 photographs, 9 maps, 2 drawings, 2 charts, 145 footnotes, 358 citations, and 216 other source references, not including external Internet links. ISBN 978-0-9711793-1-8

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In 1988, a young man speculating in real estate bought our place and cleared the broom off the hilltop near the road for a "house site." The following November he showed it to us. This is from the north looking toward that hilltop that day. Note that the groundcovers disappear from the surface other than along the road. It is too dark in there to support understory vegetation.



This is about ¼ mile to the south at what is now the main entry. We will follow the cleared path toward that same hilltop. Even though it was a cloudy day with low contrast, it was impossible to photograph the brush to the right; it was too dark in there, still so thick with scraggly trees I had to crawl through it, leaving survey tape tied to branches to find my way. I got lost within 20 feet of the County road, finally realizing where I was when I heard a car. It was a disaster. It was for sale. The moment we saw it, we were in love.



Here is that same spot in 2010. I've thinned the stand on the left three times, slowly removing about 20 trees to keep them away from the County road (for erosion, biodiversity, and forestry reasons). I added the black oak (*Quercus kelloggii*) on the right and a valley oak (*Q. lobata*) behind it. There are now a few good young trees ready to replace their larger cohorts in the coming years. It is a long and slow process. The meadow on the right is heavy with small native forbs, now being invaded by native grasses.



When we started clearing, the seller had brush-whacked that bulldozed hilltop and immediately below it. The rest of the place was almost entirely forested and impacted with French broom. There were virtually no groundcovers left except for a little blackberry. The poison oak and honeysuckle had long since taken to the trees. I have no idea where this is for a repeat photo.



This is the slope up to the hilltop. The green stuff on the ground are French Broom seedlings. There was no other groundcover here.



Here it is in 2010. No broom, native grasses, deer-weed (on the left), lotuses, clovers, sedges, iris, grand mountain dandelions...





The hilltop was graded for an emergency evacuation helipad that was never used because the government doubled the size of the helicopters so that the pad was too small. They wanted a whole acre for it.



From the hilltop looking north (to the left of the prior image), note how the forest totally lacks groundcover. In the foreground the green is cut broom, which remains standing in the understory in the background to the right. The downed tree to the right is an acacia. Note also the fir trunk in the center. Conifers were invading the entire top half of the property. On this ridge, they were the third thing to go.



The forest on both sides of this ridge were thinned for the third time in the fall of 2013.



From the hilltop looking east. The green "groundcover" is French broom. Within four months it was far denser and 2-3 feet tall (3-4 feet in six months when I whacked it). Note the higher density around the edges of the burn spot in the foreground, a typical fire response for French broom. Sometimes it is hard to recognize the same spot after 20 years, but this is an easy one. Sort of.



I had already removed a few trees in the background, but one couldn't tell that from this photo. Instead of broom, the foreground is primarily Spanish lotus (*L. purshianus*) and needle grass (*Stipas pulchra and lepida*) from planted plugs. The grass was harvested, and the straw with seed still on it spread on top of a patch of small-flowered lotus (*Acmispon parviflorus*) in the mid-ground.



One of the things that happens when you do repeat photography is that you notice how much things have changed. Noting that my grassland was disappearing before my eyes I chose to take action, taking two or three trees on the right and doing a substantial thinning on the slope to the left (for several reasons we'll get to later). The flags in the foreground are part of an experiment we'll also discuss later. Removal of the small tree that was marked resulted in a predictable irruption of weeds, even after 20 years.



Moving down the ridge, the groundcover is all French broom. By February, with the addition of new seedlings, the broom had made an 18" carpet over the tops of our feet. By May, that carpet was a blanket, three feet tall. This spot was very hard to find again for a repeat photograph, but for the fact that I such strong memories of that little branch. Over 21 years, things had changed a bit.



The area looked so open in the prior picture that I was honestly unsure it was the same tree, even though it was seemingly in an obvious location. This tree had grown and the area had changed so much that for the first three major revisions of the book, I didn't notice that I had the scan of the original negative backwards! Yet there was a way to be sure I had the right tree.



I had done something "clever" when I removed that branch by leaving it there. It had bugged me for a long time as typical of the kind of horrible pruning done by people who clear land (and the guilt that I had not got there to fix it, yet). Year after year, I'd see it, while whacking or spraying broom, but I didn't have a saw at the moment and it wasn't an urgent matter. It had taken me so long to get a chainsaw up there that when I finally did the job it was a *very* pleasurable moment. The cut was tricky because the "wound-wood" was in there so deep. When finally I got it out, I left it there as a memento, the kind of thing that would mean nothing to anyone else.



had counted only those with a substantial presence (as opposed to isolated individuals), the total number falls to about 20, mostly trees, broom, and a few native shrubs. Once the broom was removed, there wasn't much else. This became our sand hill. If you look carefully, there is evidence from the breaks at the top and bottom of the slope on the left that this spot was once a sand quarry.



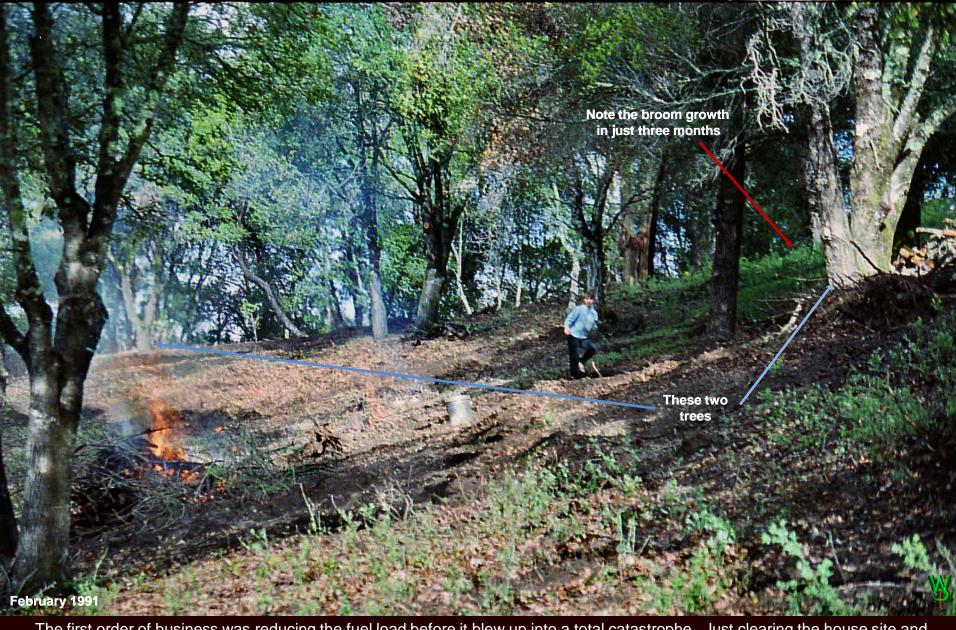
The Sand Hill Road I added was not optional; it was backup drainage for the driveway in case a culvert plugged, and to protect repairs below that would be subject to slope failure without it. I also needed the fill material. Today, I wouldn't call it picturesque but it is one of the most species-rich and complex parts of the property, supporting many plants that one would prefer not to have elsewhere.



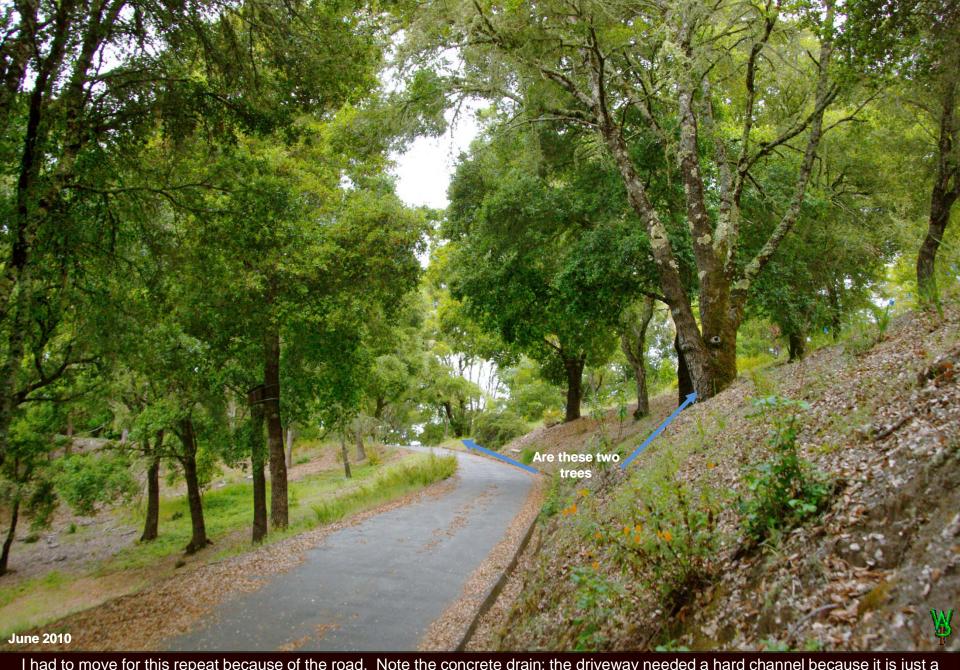
of the nearby eucalyptus were 4 foot diameter monsters (not shown here). The timbers on the right cover an old 30' old dug well that still produces water most of the summer. I may put a hand pump on it someday.



The channel cut into the left side transits water that comes down from our "Sand Hill Road" thus avoiding an eroding road cut I filled in that once ran up to this house site. Although I have had to dig out the sediment once in 20 years, it has required no other maintenance beyond weeding. The native groundcovers started as stonecrop and have succeeded to *Navarretia spp*, *Calandrinia ciliata*, and *Trichostema lanceolatum*. Now the grasses are coming in. There are many weed threats in a sunny spot like this.



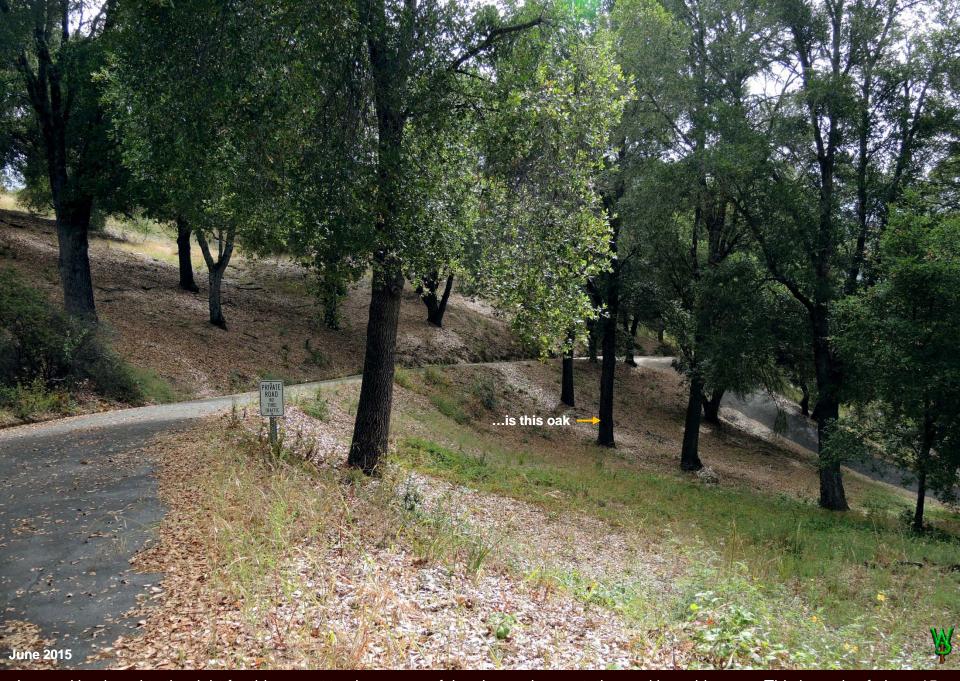
The first order of business was reducing the fuel load before it blew up into a total catastrophe. Just clearing the house site and thinning 2 acres thereabout generated 35 cords of firewood and the equivalent of thirty dump trucks worth of tree tops. **Note that there is no groundcover here other than French broom sprouts.** We gave away the firewood and burned most of the trimmings in some truly spectacular piles (one of which took a week for the coals to burn out). The fire captains of that time were more tolerant of such behavior; thank you Hank Epling, Steve Beechman, and Mike Biddle (all since retired).



I had to move for this repeat because of the road. Note the concrete drain; the driveway needed a hard channel because it is just a skin of extra fine chips on base-rock sealed with oil (oil works well here on a hard base, if one maintains it). The County road, although of poor original construction, has been there for 150 years, paved for the last 40 with but 3/4" of oil and screens on bare dirt.



The areas outlined in red were burn piles. The one in the foreground was a pile 60' long that a bulldozer had made out of broom eight years prior. The hillside behind is all broom sprouts because it had been cleared the prior summer and the seeds had germinated in the fall. We cleared this draw in the winter. We had some monster fires in here.



I moved back and to the right for this repeat to show more of the change in vegetation and less driveway. This is a mix of about 15-20 different groundcovers, about 25% of them annual. Some of the best soil on the property is down the middle of this draw.



This is from roughly the same spot panning to the right. This is what I will call a "Phase 1 thinning" in which I am simply making the area passable. It was still too dark to support groundcovers. This stand had encroaching conifers and very few decent oaks left. The fir tree had a split top some 40 feet in length with a rotting crotch immediately adjacent to high voltage power transmission lines.



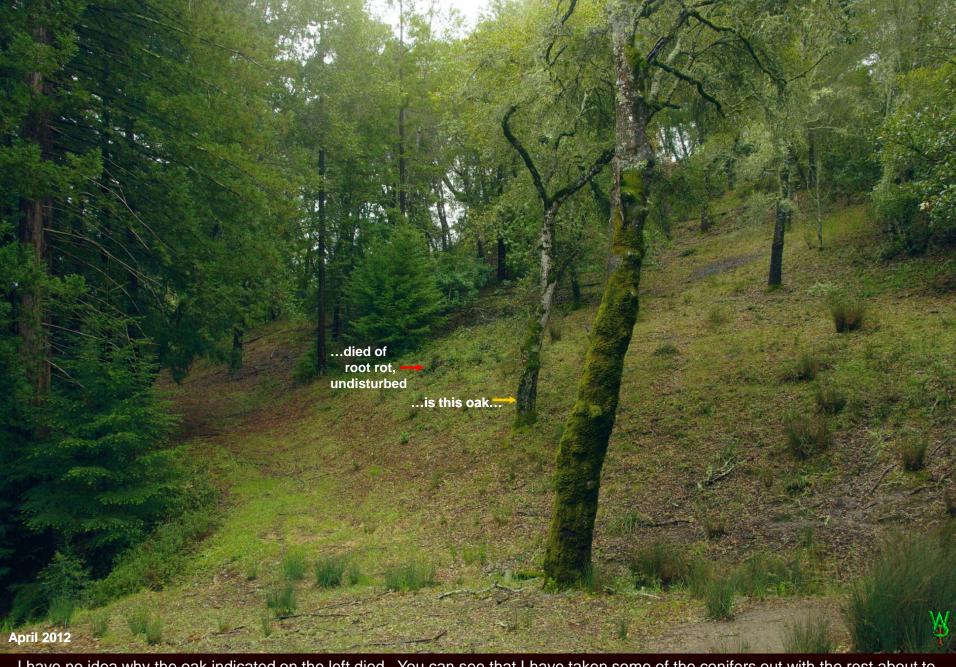
The third time I thinned here was 2013, removing the last conifers. Here you see recovering groundcovers and shrubs along with a young oak I'm trying to save suffering from "sun scald" due to thinning. Deciduous oak seedlings have been planted in baskets.



Here you see what is as close to a natural opening as we had on the property when we got here. Why there were so few trees and brush here I do not know, but it might be fungal. I had hopes for the oak noted on the left but it died, for reasons I cannot discern, as the soil went barely touched for 30 feet. There is no groundcover farther under the trees, although there were a few dead manzanita and Ceanothus shrubs. Note too the invading redwoods on the left. There was broom here, but it was barely getting started.



Here we are a decade later. We have native groundcovers recovering from my having killed hedge parsley that came up when I thinned the canopy. The red line indicates what I once called a "dark barrier" between the opening in the foreground and one I had made behind it. I had also graded a road that had once crossed the drainage but had washed out long ago. In doing so, I knew that the oak in the foreground would get root rot and die, but it was already old and we were able to enjoy it for quite a few more years.



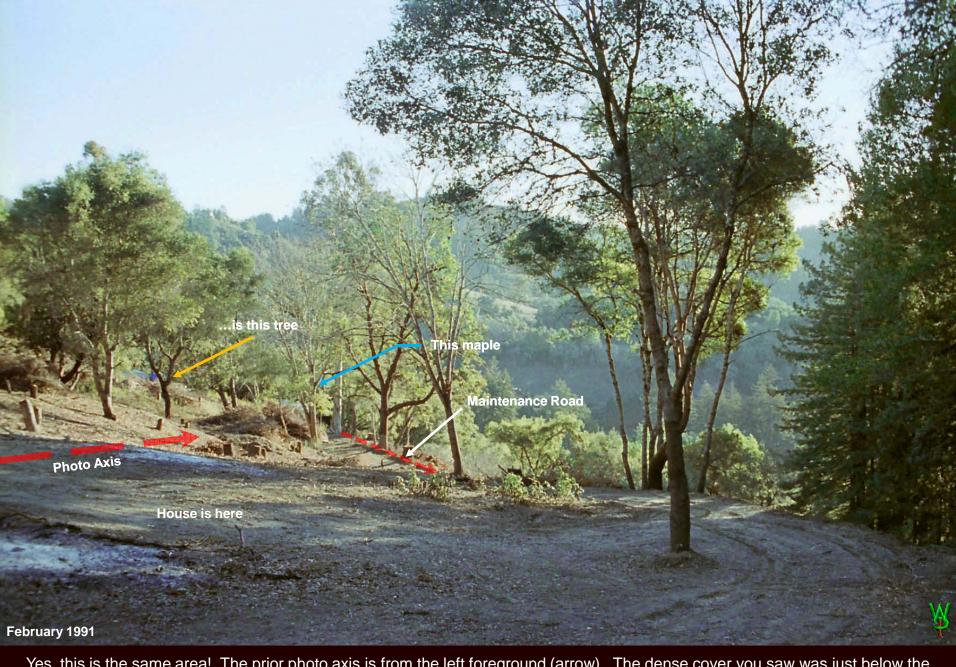
I have no idea why the oak indicated on the left died. You can see that I have taken some of the conifers out with the rest about to go. This photo was taken just before thinning our the stand in the background and killing the sprouting redwood stumps. By this time the oak in the foreground had a large *Tramete* at its foot.



Sometimes you get really lucky, as I didn't plan this series at all. The groundcover response to this thinning should be tremendous. What the trees will do is far less certain. This is the fifth time I have entered this area to thin, first to make it passable, second to get some groundcovers going, third to remove the large firs, then I thinned to the upper right, and now this. I plan to use the area to thin the redwood to the left and will then remove a few more that I have left in back to reduce the shock of a sudden increase in sunlight.



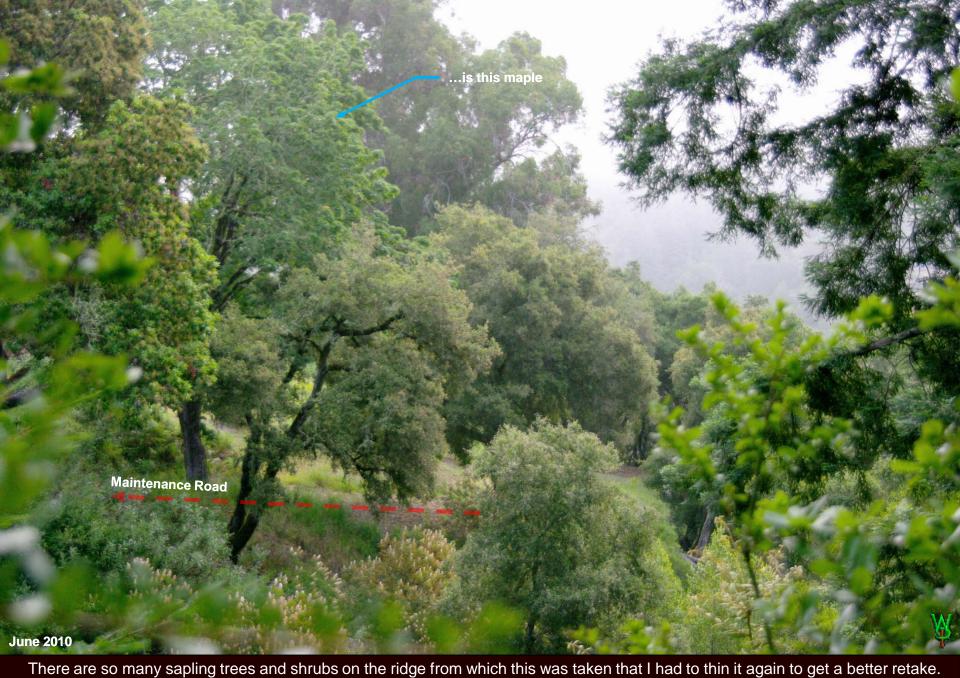
Due to succession and fire suppression, there were quite a few large Douglas firs. We removed them on steep slopes, in oak forest, and on higher ridges. We kept them on the edges of redwood stands. As chance would have it, at least three of these firs had split tops, all over 30 feet long and adjacent to power lines (the power company does not trim more than ten feet away from wires). "Forked top" trees eventually split and the tops could then have fallen on the lines (disastrous in summer). This area doesn't look terribly steep, does it? Keep that in mind noting how dense that vegetation is on the right, as you look at the next photo.



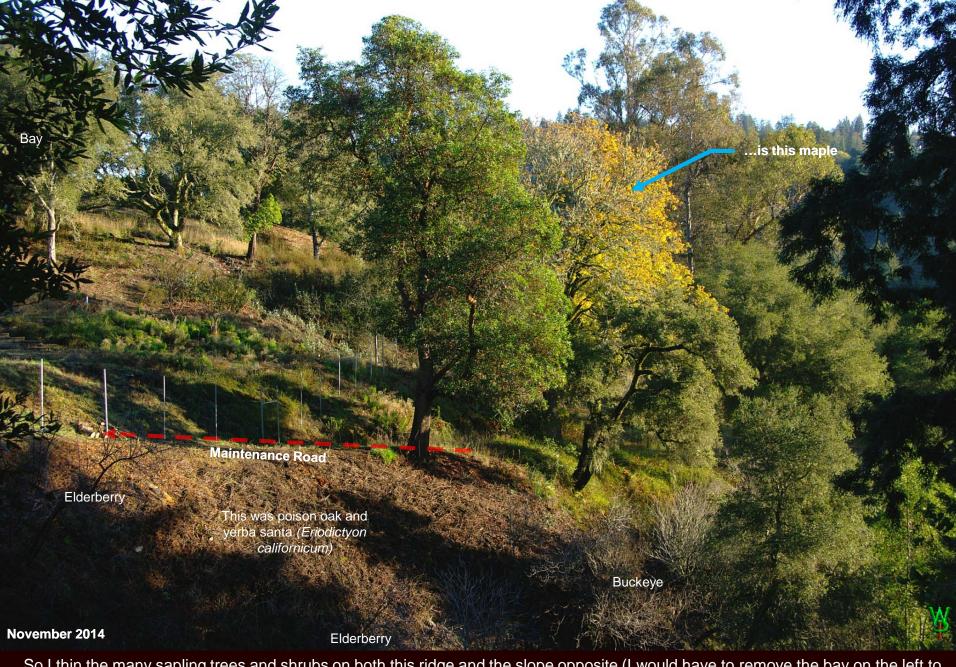
Yes, this is the same area! The prior photo axis is from the left foreground (arrow). The dense cover you saw was just below the "maintenance road." The slopes to the left average 15-25% (rise over run). About 6' to the right of the road, it drops off at well over100%. Our house is in the way of repeating this photo. The burn piles in the background were the third or fourth round that winter.



It gets just a bit steeper as you move down the slope (this photo was taken from about a 100' to the right of the one prior). That dense vegetation (mostly fir and acacia) went all the way down, all of it over 45°. Some of it is vertical sandstone wall about 18-20' tall. Imagine the kind of fire that would have come up this slope with that much fuel (I don't want to). The 160 foot tall eucalyptus just to the right of the text box is now gone, as you will see in a few more slides. We lived in the trailer.



There are so many sapling trees and shrubs on the ridge from which this was taken that I had to thin it again to get a better retake. The remaining eucalyptus, are on our neighbor's land, planted to hold up the road. Note the buckeye that moved in (in flower at the bottom). They store water in their tissue, lack fuel value, shade out grasses, and allow broadleaved groundcovers.



So I thin the many sapling trees and shrubs on both this ridge and the slope opposite (I would have to remove the bay on the left to get the original angle, which is in the plan). You will learn more about how this kind of programmatic disturbance and species selection may stabilize this system later in the book.



This being an environmental book, a few words on clearing in principle are necessary. A lot of people believe forests should remain unbroken. Others argue that wildlife benefits from "edge effects," with chaparral cover near openings containing forbs as a source of food (I belong to the latter camp). There are a couple of related points I want to make about clearing this place, one of which is subtle to some people.

First, some of this forest was composed of exotic trees that had to be removed before they spread any further. I "clear cut" them. You don't get your choice as to where those "clearings" will be.

Second, every system needs its full compliment of plant and insect constituents or it loses those species which historically responded first to events, whether fire, flood, massive pest attack, or catastrophic climate change (super-volcanoes, asteroid collisions...). Periodic clearings maintain the viability of those constituents by reproducing fresh seed.

Third, given this history of this site, the fuel all around it, and the weeds present, both surrounding it and in the seed bank, if anybody wants an original compliment of plant and insect life to continue to express itself, SOMEBODY familiar with it must disturb small areas periodically or those plants and insects will eventually lose the opportunity to express themselves. The area will succeed to the weeds that infested it before. Guaranteed.



Here is that area in 2010 (from lower down to avoid the tree tops). The groundcovers on this ridge are all new (even more extensive behind the redwood saplings on the right), primarily native blackberry (*Rubus ursinus*), yerba buena (*Satureja douglasiana*), Torrey's melic grass (*M. torreyana*), *Melica imperfecta*, and poison oak (*Toxicodendron diversilobum*; it's fine here as long as it stays on the ground), with a single tiny patch of skullcap (*Scuttelaria tuberosa*) to the left that I am now propagating by tubers at home. The shrubs are occasional ferns, roses, pitcher sage, and hazelnuts, with the toyon and manzanita having large burls, indicating that this was once a site subject to occasional fires. Down the middle are mostly clovers and lotus. Although (now) very clean and seemingly remote, this site requires vigilant weeding because it is so close to our neighbors. If the Ceanothus on the end of this ridge burns, there would be no protection from blowing seed or wandering animals loaded with weedy burs. Note also how the canopy is closing.



This spur serves several purposes: It is a fuel break, a place to turn the truck around, a safe place to burn, and a place to process logs. It is important therefore that it not become overpopulated with trees and the canopy stays open for a minimum width. So, given that we must remove some fir trees dying from beetle attack and fungal diseases, I needed room to fell the trees and process the logs. So I opened it out this year. I love this spot, despite that this is some of the worst soil on the whole property.



As you read this story, you will see the twin requirements for (1) an enormous amount of site-specific knowledge and (2) an equally enormous labor input over a long period of time. Importantly, the number of immediate decisions to be made is way too great for someone in a remote office to manage without making a mess of it, even if the weed seed bank is successfully purged. Efficient remote control is an impossibility. Detailed knowledge can only be acquired and the work done efficiently on by living on site.

As a direct result of that reality, there is one other ecological reason for a small clear-cut, one that occurs to almost no one: The people who care for the land need a place to live. I could go on and on about how banks and building codes must change to reduce wildland impact (I've long dreamed of designing mobile houses for rough terrain), but no matter what, for the foreseeable future, there will remain a need for residential proximity with which to develop that knowledge and respond to numerous and rapidly changing conditions. Then there is the not infinitesimal matter of paying for it all, and it is not cheap.

I am the keystone species on this land (one that, without it, the system fails). Sometimes it feels like a burden, others like a privilege. I hope to record, teach, and impart as much as I can of what I have learned, but the fact remains: If I stop doing this work, things will deteriorate very quickly. The Wildergarten is not and should never have been "Natural" (at least the way we define the term).

I know, your brain is probably pounding with what you think are exceptions, but in my, now long-experienced opinion, it is invariably true.

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Each line in the TOC is a link that opens the corresponding chapter in a new file

These are LARGE files; they do take time to load

Please offer suggestions and comments **HERE** 



