Fire Frequency, The Croy & Summit Fires

So far (where forestry is concerned), we have looked at thinning and fire (Cone Fire), post fire erosion (Warm Fire), subsequent weed infestations (Mesa Verde), and meadow encroachment, overstocking, and succession (Yosemite). This photo study is about the challenges of managing fire in complex plant communities on steep ground in the rural/suburban interface. The reason is simple**:** If it is going to take intimate relationships between people and the land to fix this mess, one has to wonder how that might work, particularly as urban people take advantage of telecommunications to live and work while in more rural areas. Hence is our discussion of the Croy Fire of 2002 followed by the Summit Fire of 2008 that came to within but a quarter mile of the prior burn.

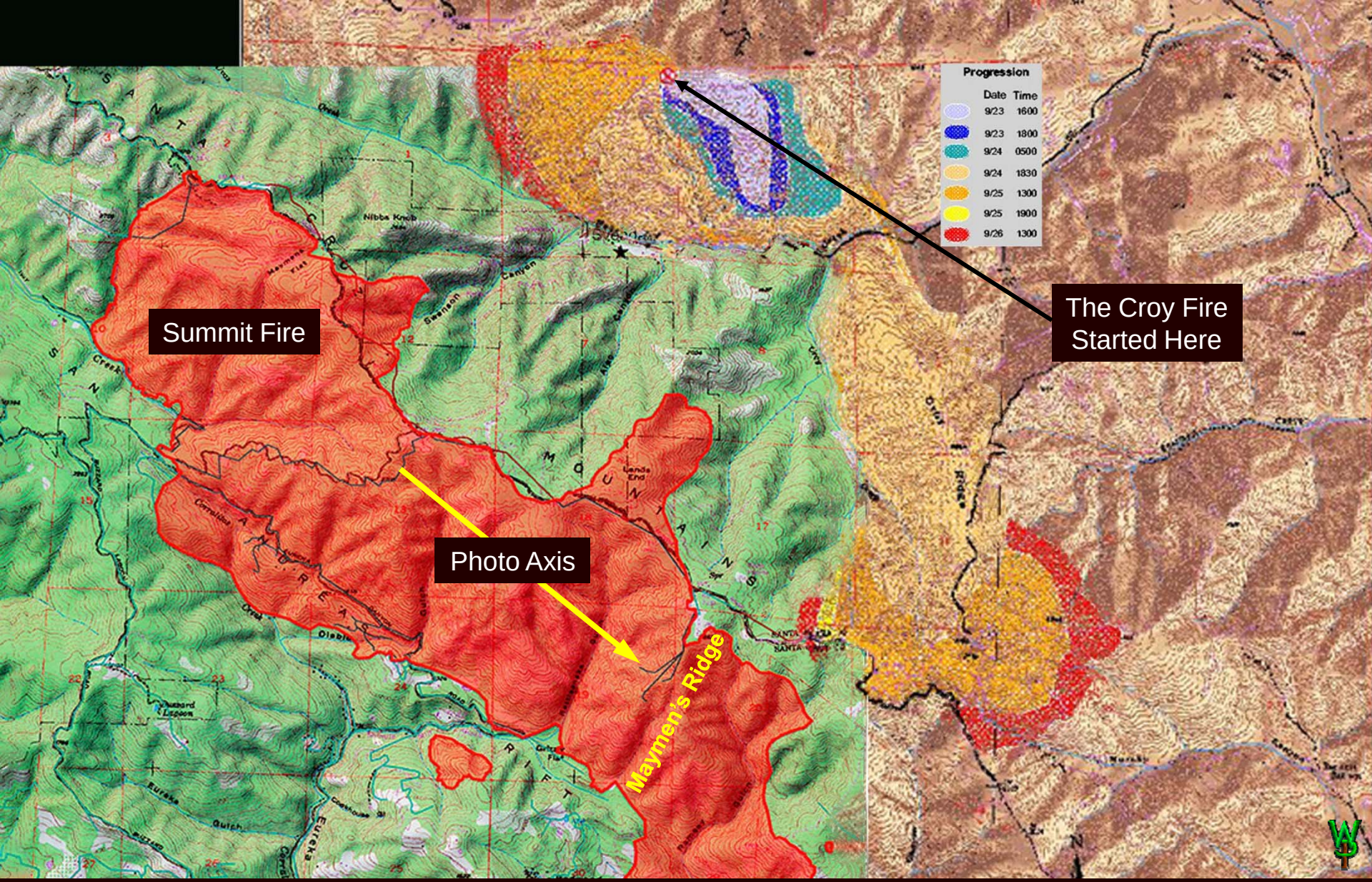
The Santa Cruz Mountains of California (where we live) are a particularly interesting place to study the complex interactions between a post-industrial society and a wide variety of habitat types. Silicon Valley is nearby. The mountains were once an agricultural area. There is also redwood timber, graduating through oak and pine woodland, chaparral of various sorts, and even an occasional grassland. Peppered among this variety are everything from borderline hovels to opulent mansions sporting everything from vineyards to horse pastures. Most of what is “wild” was once agricultural, long since abandoned and terribly overgrown.

The County has become a battleground between owners of resource lands and more urban interests who want to use private property as “open space.” The culture clash in these hills that the fires expose is subtle, involving elements of everything from fanatical eco-religion to unconscious class-warfare. Each “side” in that struggle has no clue how they are virtually all acting as witless pawns of the local real estate business, one that has been pulling the strings of the local political class for over forty years.

I don’t despise these people (except for the willful manipulators and their craven “public servants”). What nags me is the way the system has them behaving in a needlessly destructive fashion, where they could be producing more of what they all seem to value so highly. Perhaps some day we can learn to do better than this.

This ridge just above Highland Way is a wealthy enclave of very expensive homes. There are small vineyards, horse corrals, swimming pools, etc. These people are among the elitist liberals who used zoning law to virtually kill timber harvesting on other people's property, "acquiring" a $2.5 billion forest playground without spending a dime. Someday, that forest will pay for their greed whether by fire, weeds, landslides, or all of the above. Now these folks are witlessly using the Mid-Peninsula Open Space District to clear similar riffraff from the ridge above them. What they don't know is that they're not far down the list.

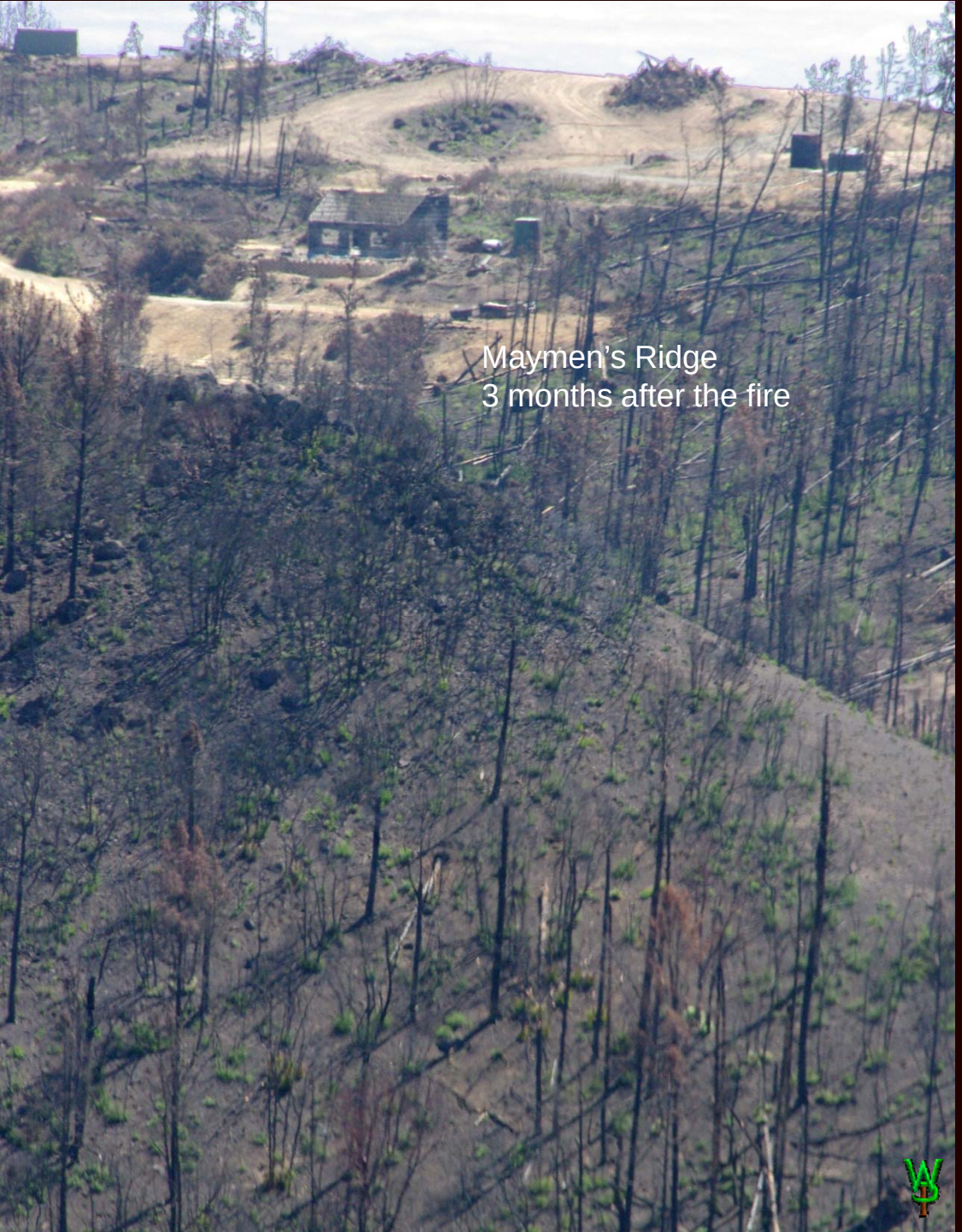
These properties hardly resemble a forest. The houses sit on weed patches amid stands of decadent brush, densely packed oak, and clumps of crowded redwood and fir. The owners moved here for a connection with “Nature,” but when they go on vacation, they usually go somewhere else to “get away.” Most spend little personal effort to care for any of it; indeed, they don’t know the plants they have around them. They install deer fences, sprinklers, and exotic landscape plants, often making their “wildland” homes look more appropriate to Silicon Valley. If you ask, virtually every one of them *says* they care about “The Environment.”



The Croy Fire burned in 2002. It is shown on the right with each day's progression. Six years later, in May 2008, the Summit Fire (in orange) came to within four miles ESE of Highland Ridge. At first glance, with a ridge and only six years between the two burns, there appears to be an opportunity to study the response to fire after tweaking an array of conditions and variables unlike we have seen in this area for perhaps a century. It would seem the two recent burns have removed much historic fuel accumulation such that it might be safer to burn between them.

Here is a view of the typical vegetation ***before*** the Summit Fire (I had to push this image to make it visible; the "after" photo axis is shown on the prior map with an arrow). The conifers are mostly Knobcone Pine.

This was photographed from slightly southwest of the same location, three months after the Summit Fire. For the most part, the pine is gone. The little green you can see on the burned slope is probably either manzanita *(Arctostapylos sp.)* or scrub oak regenerating from their root crowns. It is a fire-adapted landscape.



To protect riparian areas, the County of Santa Cruz has confined development primarily to ridges. That means it takes pumps to fight fires, or in this case, a bulldozer tearing things up rather aggressively.

In but five years' time, this slope will be an explosive combination of dead standing trees and six-foot tall manzanita, which you will see in the results of the Croy Fire in a few more slides.

So, just because it has burned now does not mitigate the historically high fire risk. Quite the contrary, the second burn can be hotter because of all the dead dry wood.

In my experience, the correct treatment would be to lay those trees across the slope to hang up on the stumps, fill the gaps to the ground with branches, and slow down the flow of water until there is vegetative cover. Heck, they might even keep some of the wildflower seed on that slope that has not bloomed for decades.

BUT, "my experience" has never dealt with a slope that big, which could change everything. So despite my local knowledge, and deep experience with most of these native plants, I know just enough to be dangerous just a few miles away from home.

Of course, the likelihood of anybody *doing* any experiment is nearly nil. What we are more likely to see is nobody doing anything.

It's what one could call, "Willfully we never learn."

There is much standing fuel that remains. The dead stuff in the foreground is manzanita. It burns hot. In a chimney-like gully like this, manzanita can burn so hot as to produce a small tornado that can throw a 2" burning chunk over two miles, in other words, half-way to Highland Ridge. The thing to do to reduce that risk would be to get the standing material on the ground.

It is obvious from the re-sprout how well manzanita responds to fire. Without such removal of the dead material, the plant gets woody and eventually dies out.

These root crowns can just as easily produce fresh new shoots after mechanical disturbance as a fire (such as scraping it off with a tractor or dragging heavy metal objects over it). With a steep and erosive slope, cutting standing material is difficult to do without loosening even more soil. A chainsaw would be very slow going and keeping one's footing a challenge. Charcoal is very hard on the saw. Most folks would probably be tempted to use a bulldozer. That would be a mess on a slope this long, especially if it uprooted the bushes.

Unlike the mere 1-1/2" of rain that caused the massive flash flooding after the Warm Fire or the 0.5-0.8 in/hr rainfall that caused the erosion in the USGS photos, these hills can get 4in/hr and over 40" of rain per year. Given how steep it is, it is difficult to imagine how fast the water runs off. The potential for flooding, streambed down-cutting, and landslides is very serious.

It will be interesting to see how many of those oak trees actually make it. Fortunately, the winter of 2009 was very mild.

It is hard to appreciate how steep this slope really is until you orient by the conifers on the bottom and then follow the base of the slope toward the right. Can you imagine that fireball? (I don't want to.) Note how much the manzanita has grown in only three months. Some of that stuff is almost a foot long!

Vegetation types change radically in the Santa Cruz Mountains with different exposures to light. Just over the top of the ridge was a tight patch of pine. As you can see, these trees were ridiculously dense, more importantly, they were ridiculously dense right along the only access and evacuation route in the area.

These trees suffered “high mortality.”

To me, such dry technical language, while intended to remove hyperbole and encourage objective thinking, effectively excuses the stupidity of such a management policy. Had this stand been thinned, we would have a better chance of a wildflower bloom after a fire reduced erosion, and so on, but we would also have some trees left to develop better wildlife habitat, perches and food for birds, and more. This stand is useless for all but bugs while it still represents a threat to public safety.

What we have here was obviously a fairly uniform stand. Now, the interesting thing about the knobcone regeneration process after an event like this is that the results are so *non*-uniform. Each spot shows a need for a slightly different management style, especially if the owners were to adopt a more frequent prescribed fire regimen, but also depending upon the management goals.

My main objection to this that it is so dense as to be not at all diverse, there may not be much to take over as it decomposes. Meanwhile, it is an awful lot of standing dead fuel right next to a road.

To get a sense of what this portends, we’ll move on to the Croy Fire just six years prior to this one, just down the road.

The Croy Fire started on Loma Chiquita Ridge, a spur on the northeast side of the main Summit Ridge while the Summit fire faced Monterey Bay. The former gets more shade, but the latter gets the high dregs of the marine onshore flow. Accordingly, the vegetation is somewhat different on either side.

This is Loma Chiquita Ridge six years later. This is where the fire started and spread to the south.
Every time there is such a fire we hear all about fuel management. We heard all the same things after the Summit Fire as we did after the Lexington Fire, and then the Croy Fire. The behavior of the average homeowner in the area is not a great deal different today than it was then, but then neither has the behavior of the governing authorities changed much either.

This the is where the Croy Fire burned up to Summit Road near where the fire was finally controlled. Here there are not many remaining pine trunks, with a full tree in in the backdrop still in good form indicating a meandering burn (or possibly a well timed water drop). It is unlikely that the lack of poles was due to heat consuming them. There just weren't very many.

Yet for the most part, despite the lack of pine trees, the regeneration is primarily pine, a lot of it, with but few madrone and scrub oak, and NO manzanita from root crowns.

It should be fairly obvious that the stand density of these trees (should they be allowed to develop without intervention), will be every bit as high as the incinerated monoculture we just saw in the Summit Fire. So, is that a bad thing?

Lacking steel or good grazing animals, all the Indians *could* reasonably do was to burn it. We have more options, but with the temptation to get lazy and abuse the power of modern tools. Then there is the "small" matter of accountability**:** in a State as litigious as California, who would just light it on fire every now and then as the Indians did? So, we socialize the risk until the bureaucrats get the people out so that they can burn it. But is that the "right" thing to do?

This photo along with the last one enlarges the former slide into what seems to be an apparent paradox.

Here we had a stand that was clearly of such high pine density as to exclude dense populations of other trees. My guess (lacking more time to look or years to watch) would be that the oak and manzanita sprouting below were not yet completely dead under the pine and had regenerated from stumps. So this fire was for them a new lease on life. They do look vigorous, yet somehow, with all that burning vegetation, airborne terpenoid, and dead cellulose, the fire did not burn the pines completely! This spot is right along the fire line, possibly where there was a back fire that didn't yet have much draft to get into the canopy. That and/or water drops? As to the lack of pine seedlings like we saw in the last photo, although pine was dominant here, you'll note that there are hardly any pine seedlings here relative to the oak and manzanita. Why?

Knobcone pine is a fire adapted species. Their cones must have heat to open and do not last long after the cone has opened (rodents eat cones on the ground even if they dropped). Typically, a stand of knobcone pine does not have a good cone crop every year; it is more usual for these trees to develop their cone crops in patches, whether because of pollination, swarms of pests, whatever. So it is possible this stand had a good cone crop, or even that soil acidity might have abetted a "damping off" fungus. It's too complex to know without detailed study of each location, for years.

It takes "knowing your own land."

This third example is similar to the second, in that despite the presence of mature pines there are no apparent pine seedlings underneath them, although the fire was hot enough here to kill the conifer.

Note that there had been no apparent historic encroachment of the manzanita patch by the pine despite a good many years of clear opportunity. It's not like there would not have been bare soil, as the ground usually has a mineral surface under a manzanita bush.

So, does this represent a different soil pocket, different mycorrhizae? Soils are complex here, varying from sand to shale. To be certain would take lab tests.

Where there *was* pine is primarily oak and *not* manzanita (although there is one madrone on the left, which is related to manzanita). Where there is manzanita it probably regenerated from root crowns (it usually needs a fire to scarify its seed, but even then germination is usually poor). Manzanita seedling growth is usually fairly slow so it is unlikely one would be prominent in these photos even after six years.

Further up the slope it appears that a few of these oaks survived the Croy fire. So, it was hot enough to kill the pine, but not the oak despite the manzanita below it! Does that mean the fire came down the hill? Dunno!

It would be nice to have people here to observe both burn and recovery with a long-term stake in correlating methods with outcomes, wouldn't it?

Just down the road we see a similar slope, but with no manzanita at all. The fire killed all the trees in the foreground, but didn't faze the conifers uphill!?!? Despite obvious former pine dominance we do not see as many seedlings (except on the left). No, the slope is covered with other chaparral shrubs, Monkey-flower *(Mimulus sp.)* and Golden-bush *(Ericameria arborescens)* neither of which, curiously, require fire to reproduce despite the fact that they are both post-disturbance shrubs. The Monkey-flower is usually carried by water, birds, or muddy feet while Golden-bush seeds blow in on the wind.

Just down and still along the road, the situation is entirely different, again. It is almost all densely packed pine, in other words, a future fuel bomb. So… Graze it or raze it? Goats? Bulldozer? Fire? Who owns that risk? Plant something else? All of the above? Where would the people who do this work live? Isn't it better that they live nearby if somebody needs to weed it after the disturbance? How many would it take to do the work?

There are people who used to live nearby, some with both the energy and interest to do the work, but lacking capital and training. Most of them are not well-to-do.

This house was constructed of concrete block and had a metal roof. It burned anyway.
What does that say for the prospects of the mansions along Highland Way?

The reality is that this land needs regular disturbance, both to manage the risk AND for the good of the vegetation, whether fire or otherwise. If you ask the agency, they don't have the money for that. Even if they did, who will be there every day to detect and stop those first weeds that establish in an open system before they spread?

Six years ago, the Croy Fire burned here too. The California Department of Forestry and Fire Protection (CDF) was successful in saving most of the homes, which, for the most part, are just as overgrown and weed-infested as Highland Ridge. I waited at the gate at Loma Chiquita and requested permission to enter, which was readily granted with a proviso not to go too far because people "down there" take a seriously dim view of strangers, especially botanists.

Before I drove in, I asked if I could photograph the regeneration after the fire. I was told in no uncertain terms, "No pictures," which is a good indication of the climate of fear and adversity. The manzanita is over eight feet high already. It is primed to burn again.

CDF may have saved the neighborhood, but from what I saw of the vegetation, the neighborhood has yet to save itself.

Weeds and fuel don't care if anybody lives here or not; they'll just spread anyway. For the weeds, it is life and death. To us, they are just an annoyance. It is time we all learned to help each other deal with it.

Mayman's Ridge (not to mention Loma Chiquita) is almost an hour from the nearest store or gas station. Unfortunately, the likes of the folks in Highland Ridge, only fifteen minutes closer, are trying to get rid of them, by proxy.

The Mid-Peninsula Open-Space District (aka MidPen) has designs upon this entire area (with the exception of Highland Ridge, of course). They do not even want people believing that they can even drive here, so there's an even more obnoxious sign down the road.

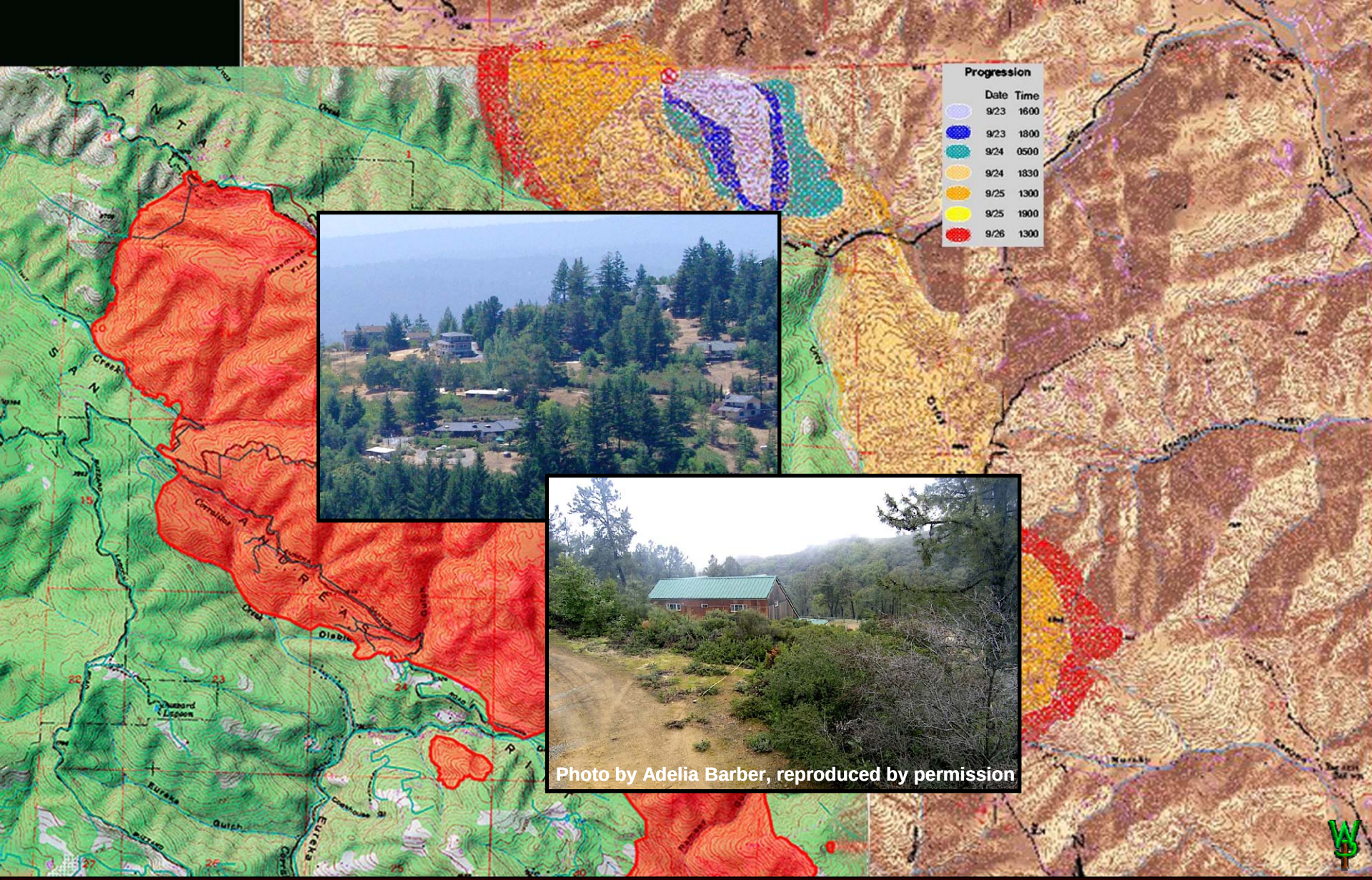
Summit Road is a State highway. Who gave MidPen legislative and administrative authority over State and County roads? Isn't that a violation of the Separation of Powers principle? To whom is the MidPen Board responsible?

You guess. I've never seen a ballot. As to detailed attention to the land, the nearest MidPen office is 90 minutes away, over two hours in traffic.

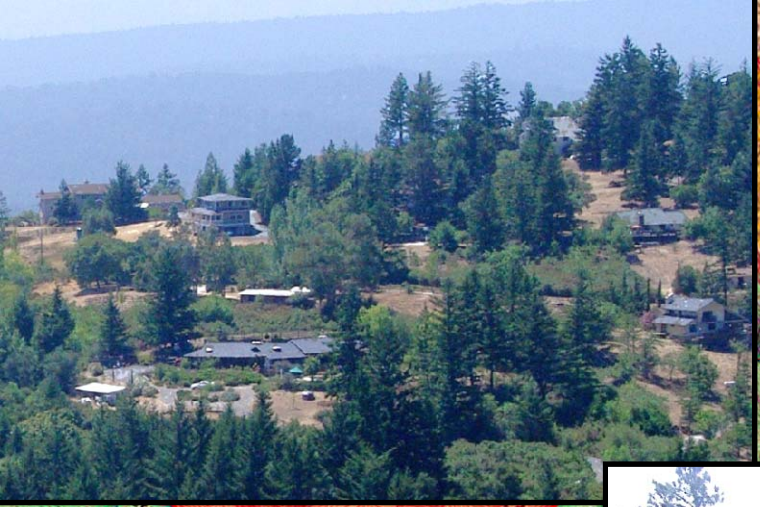
MidPen does real estate deals. They have acquired the land across the only access the landowners in this neighborhood have to their property. Many of the people who live here hate MidPen (as should be fairly obvious from how they treat the sign). If the bureaucrats end up being successful in turning the residents into "willing sellers" they'll simply shut the entire area down and probably just light it on fire every once in a while, as if that is all the Indians ever did.

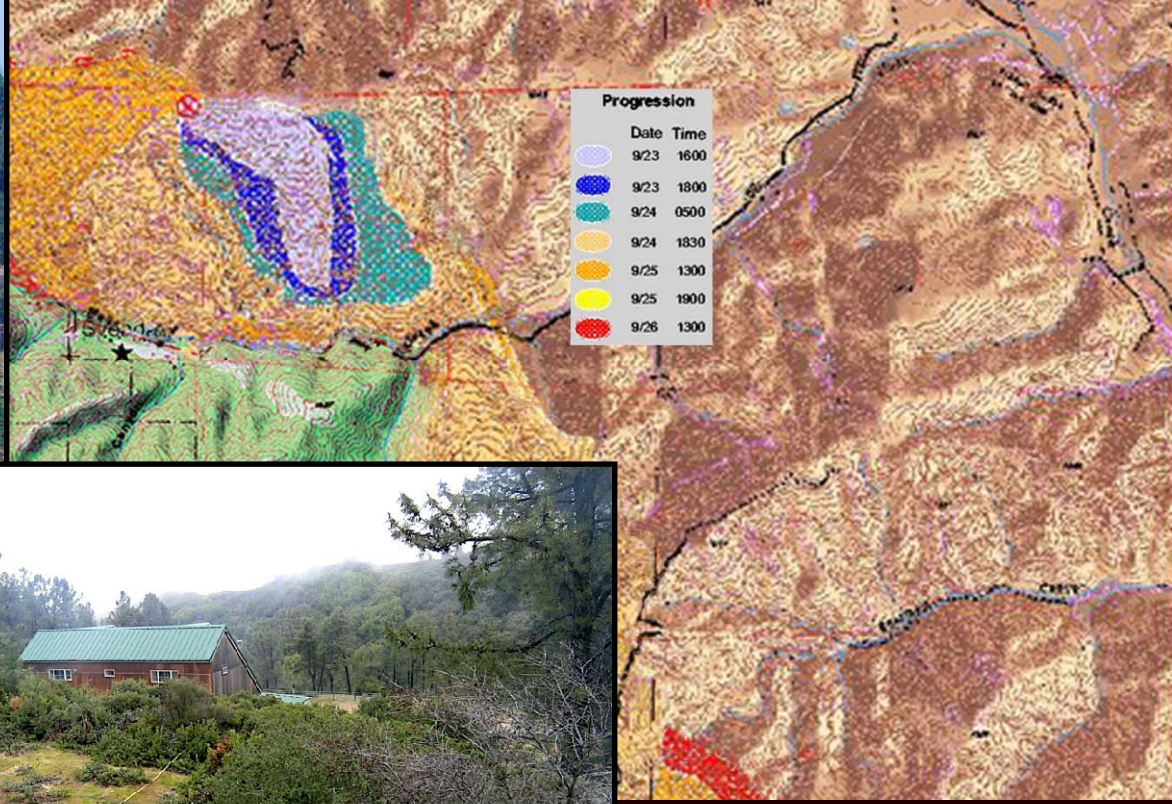
It is just as condescending a view of the sophistication of native tribal horticulture as was manifest destiny.

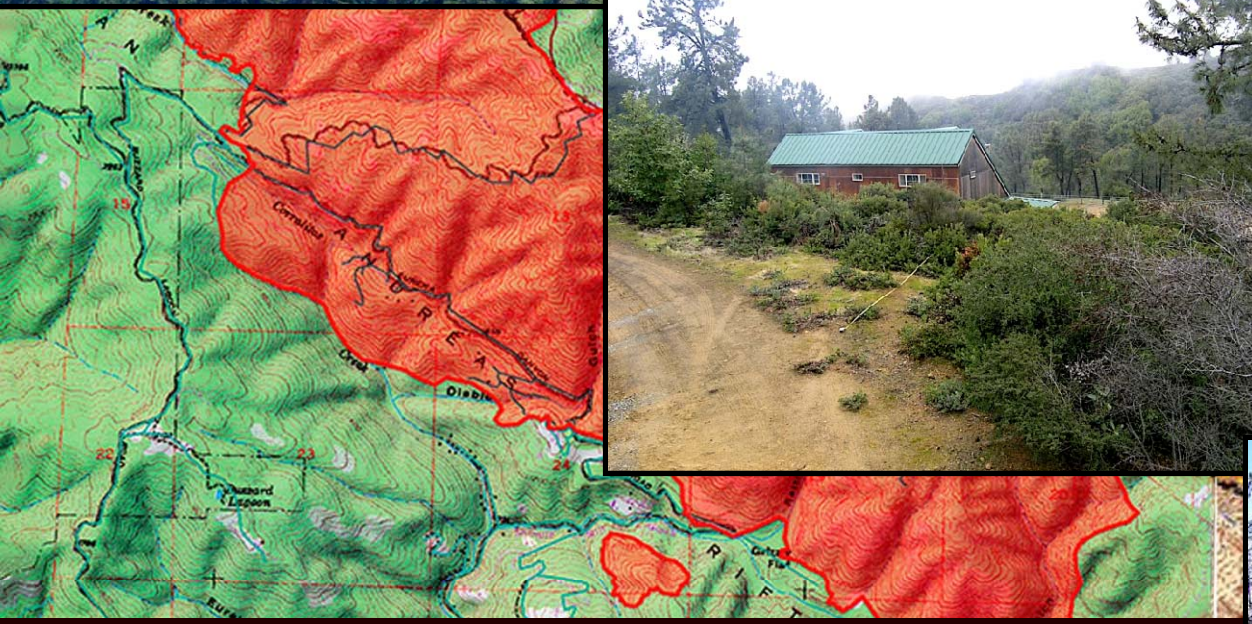
I used to see such things as technical and policy problems. Then I graduated to the idea that it was an economic and political problem. Now it looks more like a moral and spiritual problem. I guess that's life.



If you ask them, ALL of these folks will tell you they know they live in a fire-adapted habitat, but they either don't have the education to understand the implications or don't have the resources to prepare an effective defense. If they did, they might even get the bureaucrats out of their way to exchange services and save their homes. They might even care for each other in a crisis. On the other hand, the bureaucrats want it "Natural" and do not care about limits. Thus, these people need each other, even if they don't know it yet. If they don't learn to help each other, because the land will lack close attention, it will lose, and so, eventually, will they.







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The fire maps were obtained from the California Department of Forestry and Fire Protection; the Croy Fire is **HERE**. CDF has moved the Summit Fire map to goodness knows **WHERE**?

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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.
http://www.naturalprocess.net

Shemitta: For the Land is Mine,

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