Project Overview

March 2015 – *Trifolium gracilentum,* to me, the most beautiful clover on earth

This chapter, a contextual overview of this project, concludes Part I. Discussed are its rationale, setting, history, accomplishments, and goals. The actual project details are covered in Parts II, III, & IV. The book concludes with a contextual discussion in Part V.

Wildergarten 6.4

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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.

Revision History 1.0 2.0 3.0 3.1 3.2 3.3 3.4 3.5 4.0 4.1 4.2 4.3 4.4 4.5 4.7 5.2 5.3 5.4 5.8 6.4

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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

Articles at Wildergarten Press**:** collected writings on Constitutional history and regulatory racketeering by tax-exempt “charitable” foundations

Wildergarten Press
www.wildergarten.com
Send emails to comment@wildergarten.com

June 2015 – *Clarkia rubicunda, Agoseris grandiflora, Madia gracilis, Trifolium wildenovii, Bromus laevipes*, and others…

This Overview is to lay out the goals of our project, why it was undertaken, and how is organized in the 24 chapters to come in the next four parts: Forestry, Grasslands, Miscellaneous, and the Project Context.

What's the Point?

June 2011

Scents of Purposes

People keep asking me “What is the goal?” as if there really could be a fixed attainment target with known properties and specifications that would remain static once completed! How can one be “done” with a living changing thing? The best one could hope for is a sort of steady-state maintenance level, but even that must be interspersed with occasional disturbance, project, or experiment. Engineers suffer particularly from this latter malady, known among us as “creeping elegance.” It is an obsession with adding features and improving performance that has driven many a marketing manager and accountant to despair. Hence the joke: “Shoot the engineer and go into production.” So much for goals.

“Purposes” on the other hand are ongoing. Over time they have multiplied as one desperately searches for reasons to keep doing something so difficult for so little tangible reward. Thus, it should be no surprise that the purposes of this project have increased in scope over time, both as a matter of increased understanding and extending applicability.

1. Establish pure native cover at all successional stages across the entire property. We’re almost there.
2. Purge the non-native seed bank. This has been done in several places to an unknown degree.
3. Foster a wide variety of native seed dispersal, such that the land responds to disturbance with native germination, particularly with small post-disturbance forbs (please see our species list). This Is ongoing.
4. Produce a varied, dense, and beautiful groundcover that is productive for insects and wildlife. Ditto.
5. Mitigate erosion damage, reverse incised channels, and stabilize slopes. 80% complete with one BIG setback.
6. Observe native plant colonization and adaptation behavior. Ongoing.
7. Improve technology for native annual cover to be **cost-effective and attainable within 5 years**. Current focus.
8. Harmonize successional processes of “wildland” habitat with agro-urban land use given that modern demands upon the landscape differ from those of aboriginal tribes. People don’t want broadcast fire, and don’t eat many acorns, but perhaps they would have fewer allergies if they gnoshed on an acorn-tortilla upon occasion!
9. Return excess biomass to the soil system in a stable form while restoring original trace mineral balances.
10. Increase our knowledge of the relationships between migratory species and native foods, including insects.
11. Establish precedents in law for freedom of action in demonstrably-responsible habitat restoration research and process development toward establishing TRULY free-enterprise environmental management.
12. Initate a cultural transformation that invests the public in actively fostering the health and productivity of the land and sea around them as legitimate and prosperous industries.

You are free to judge how we are doing.

Each of these subjects developed over many years, therefore each involves overlapping timelines. Worse (from the standpoint of organizing a book), the subject matter overlaps as well; there were no grasslands to begin with, there are now grasses in forests, and trees found in grasslands. Hence, extracting the project into a linearly-organized book is a challenging matter. Designing an architecture such that the presentation can develop in the future without reconstructing it repeatedly was also a necessary challenge.

WHY??

April 2014

If We Knew What We Were Doing…

The previous chapters suggest how little we know when it comes to the goals of "restoration" in the contemporary sense of a particular arrangement or successional state. Nobody knows how native annual plants and soil microflora work together as systems, nor is anybody EVER going to know unless we develop numerous sites, each fully populated purely with native plants and then run trials over a wide range of soil and micro-climate conditions over considerable periods of time under a variety of successive treatments. Such systems cannot be replicated in a lab. Our project is still in preliminary phases of asking the questions to develop methods and tools while stirring things up and observing how these systems work as the natives return. Then we move on to their symbiotes, parasites, etc. with a focus upon maintaining a multi-stage successional system. Another goal is to provide a refuge for reproducing native seed, because the stock of remaining viable native annual seeds is so severely depleted. In parallel with that is learning more about how to integrate people into the system to enhance their lives living on the land in order to care for it.

Observations here suggest that Indians once governed the land by frequent fire, but also harvesting and hunting. Bears were also a source of disturbance. If the patch was something the Indians liked, they'd tend and extend as appropriate to what they wanted. There may even have been successive crops taken from the same patches, such as bulbs first, then grasses, burn, tarweeds after a second fall burn, and then acorns. After each disturbance, the system went through primary succession until the next. Fires farther from settlements (such as "bear zones") were patchy mosaics (thus complicating fire archaeology). In these mountains, meadows were more common on ridges, with chaparral on the slopes succeeding downhill to oak woodland and then redwood in the gullies (or below wherever there was a spring, of which these mountains have many, even on ridges). The meadows and chaparral were probably patchy too because they'd burn off when a hot enough fire met a sufficient fuel load. Burn annually for thousands of years and there would be no trees.

Neither the Spanish journals, Indian middens, nor ethnographic records suggest that large game was a large fraction of the California Indian diet. A few do mention them wearing skins but most noted that they were from small animals such as rabbits. There are LOTS of shells in middens from snails and bivalves. My guess is that because of the grizzly hazard, hunting large game was communal and infrequent, with the harvest being distributed as soon as possible. Such practices are not unusual among hunter gatherers today with great prestige and better mates going to generous providers.

Yet even if we did know how things once were, there is still a more important question as regards "sustainability" today**: Is what the Indians did the best that *could* have been done?** I doubt it, at least around here. The tribes didn't have easily manageable animals with which to build deep organic soils. They burned so often that on steep ground like ours, most nutrients would wash off in heavy rains. The plants they used for food required VERY time and energy intensive harvesting and processing techniques. Having lost or extirpated so many large bodied animal species after the Pleistocene, the tribes had a very limited array of options compared to an agro-urban society.

…We Wouldn't Call it "Research"

That doesn't mean Europeans have done even a hot job. We have yet to deal with the legacy of resource extraction, exotic introductions (both witless and intentional), topsoil losses from agriculture and abandonment of marginal sites (such as ours), and subsequent complete neglect. We do have better tools. Indians would have killed for a good shovel, never mind a chainsaw, D8 cat, or a rifle. We also have horses, cows (bison), sheep (bighorn), and goats (antelope) – [each animal in parentheses was a controllable variety of the former]. Tools facilitate vegetation management, which once played a significant role in shaping these mountains and should consciously do so again (instead of pretending this will all will fix itself). Then there is the not-insignificant matter of keeping it all going under the continuing onslaught of new and historic exotic introductions, about which virtually nothing is done. Fire, a useful and powerful tool, is now expensive to control.

Native post-disturbance forbs are critical to insect life upon which birds and pollination depend. They are a critical source of protein in the animal food chain. We cannot simply install native perennials, crowd out all annuals, and call it 'restoration.' Yes, it is difficult to reestablish native post-disturbance annual cover, but this research must be done; else we will lose the foundation of the successional system, particularly insofar as soil microbiota, fungi, nematodes, and insects are concerned.

I believe that the best we can do for now as an attainable goal is to organize distributed arrays of small properties similar to ours, developing remnant cohorts of locally adapted plants with which to produce fresh seed, learn how those systems work, and what might be done with them. In my opinion, "preserving" huge landscapes for large predators (popular with environmental groups), is a disastrous policy of ill-informed and wishful thinking. Besides the policy's obvious potential for unrestricted contagion, no animal survives without food. For the food system to work it needs a foundation, soil, the base of the biological food pyramid upon which predators depend too. That starts with bacterial and fungal relationships with post-disturbance plants, herbivores, and insect life. Large predators such as bears and wolves come ***after*** **we have a food chain that works.** Meanwhile, there is little a predator can do that hunters will not *pay* to do. Large predators make the job of restoration unnecessarily hazardous, both for people and for the animals that can help pay for the work. Yes, predators can be useful, particularly in rugged and remote locations where anthropogenic animal management is more costly. Yet from crows eating sage grouse eggs, bull frogs eating endangered red-legged frogs, sea lions snarfing down endangered salmon, coyotes and mountain lions hammering big horned sheep, striped bass eating Delta Smelt, and goodness knows how many other similar cases, it is predation run amok under the watchful eye of complicit government agencies that has driven many endangered species to the brink, possibly more so than destruction of habitat by human development. All it takes to understand that is to look down next time you fly over the American West to see how little of it has been developed, even in California. As you saw in the site history chapter, many areas currently thought to be undeveloped were once under intensive use and have since been abandoned, which is perhaps the real reason things aren't working so swimmingly.

We've been had, deliberately misinformed by those with everything to gain.

The Wrong Way Rub

This project began out of aesthetic considerations; I just wanted to save a little piece of the California I had loved as a child, with a home for my children perhaps to inherit. I had no idea that what we would accomplish had never been done before.

It wasn't long after I finished building the house that I was roped into supporting friends in their futile battle with the aggressive and destructive agenda of our local anti-logging community. These families have lived in these mountains for over 140 years, making a living with heavy equipment. They had helped the County and their neighbors, repeatedly, to recover from disasters such as the Loma Prieta Earthquake or loss of badly maintained roads after heavy rains. From what I knew of the condition of our land when we arrived and its surroundings, it was clear that the laws the activists advocated were destined to ruin the forests they were supposedly intended to protect. In 1994, I joined the United Nations' Santa Cruz County Local Agenda 21 Biodiversity and Ecosystem Management Roundtable with the intent to engage similar activists (such as Earth First!) primarily in the importance of weed control and thinning overgrown forests as a growing fire-bomb. Unfortunately, the product of the process was not the open consensus promised. The leaders accepted the document we'd written and then unidentified people who had not attended a single meeting rewrote it in secret. Despite my refusal to sign it, the organizers published that I had agreed to it (the promised "consensus"). Appallingly, that document became statutory law!

I realized right then that this *political* process not only posed a terrible threat to representative and accountable government, more importantly, it is destructive to the environment that is its principle justification! The more I studied, the more I learned that using government to "protect" the environment gives politicians, courts, and bureaucrats the power to pick winners and losers in the marketplace, usually in the interest of the politically dominant and not its supposed purpose. Regulatory bureaucracy is a direct threat to private property and free enterprise, without which the private economy that *funds* environmental restoration will eventually collapse. I saw this systematic threat as so grave I quit my engineering career to write a book to stem the damage.

As research for the book progressed, it turned out that our local "anti-logging" activists were being used to support the agenda of a closed group of local developers and residential real estate interests. Over time, it became obvious that this was but a microcosm of a corporate "charitable" foundation-government-university "environmental" juggernaut with global reach, its agents dependant upon continued and growing problems. This was what finally explained why so many supposedly well-intentioned but eventually-destructive regulations seemed virtually inevitable. Yet the system is worse than merely corrupt; it is also structurally maladaptive. Land is both temporally and spatially varied, while government regulations are uniform, supposedly dedicated to equal treatment. Yet if everyone is forced to do everything the same way, no one could prove that the rules are dysfunctional much less have the latitude to demonstrate a better way of doing things. The environment is too dynamic, complex, and varied for one set of rules to take everything into account, much less produce a just and efficient product. There is too much money to be made calling the shots on who gets to control access to resources. To make such a system global is to assure the ecological ruin the system is supposed to prevent. These findings became the antithesis in *Natural Process*.

As an engineer by training, I *had* to find a solution (the thesis of the book). I went on to obtain the first patent for a free-market environmental management business method, primarily as a means to keep said corporate-sponsored government juggernaut from deriving monopoly profits by doing it first (it constitutes "prior art" against the carbon trading patent, now owned by Fannie Mae… yes, your electric power bill is to be used to bail out the mortgage meltdown).

Once *Natural Process* was in print (a monster of a read), I knew that since I was claiming to have a better way to manage the environment, our property had to be such an inarguable paragon that I could never be regarded as a hypocrite, hidden threat, aspiring profiteer or corporate agent… by anyone. At the time, I had no idea how demanding detailed restoration work would be (particularly in grasslands). I honestly thought lots of other people were doing this kind of work and hoped to learn from or occasionally commiserate with them. I had no idea that our family would achieve results that are apparently unprecedented, but that is what I am being told by people who know much more about these things than I do. Yet even that standard is far from what I think we should be pursuing.

This was and is a "lives, fortunes, and sacred honor" sort of commitment, the kind of thing from which there is no turning back in life. The aesthetic project became an investigation to develop the expertise and evidence to support the claim that a free-enterprise alternative to regulatory government should be given the latitude to provide superior stewardship without regulating it to death, as at least a competitive alternative to the existing bureaucratic system. Needless to say, this commitment forced me to develop means to deliver upon that promise. Altogether, over the 26 years since I quit my career, this has probably cost me at least $3.5 million dollars in lost income. No matter how many disappointments there have been, no matter how futile the effort seemed to be, no matter how miserable things got out there weeding in the rain or heat, the mandate was inescapable**:** I would succeed or face failure, then to watch both the land I love and my country die, knowing that I had quit, not because it was wrong to try, but because it was "too hard." One can't do that when one has children watching.

The results have been gratifying albeit I am far from "done." I have met some amazing people in many walks of life and have had the privilege of raising two more, some of whom have become friends. Yet there was little to no advice upon which I could rely, never mind any accolades. I have a few supporters among the academic community, but the more common response has been to ignore what has been accomplished here, my guess is out of fear. Even the California Native Plant Society denied my offer to share our results at their convention. Literally, academics have been told by their superiors *not* to visit here. So, I have decided to share our accomplishments and challenges in this picture book, free to anyone who cares enough to read it.

By contrast, when one takes a closer look at similar (and worse) conditions in National Parks, conservancies, open space districts, greenbelts, land trusts, conservation easements… they all suffer from the same problem**:** lack of detailed management. It just doesn't occur to most people that many "Natural" places need regular disturbance and a LOT of work. The cause of the problem is not as much technical or financial as it is a cultural archetype that holds people as inherently harmful to Nature.

Really? All of us? No matter what we do it is bound to be destructive?

The belief defies reason.

Its corollary is worse: 'Nature, if left alone, will recover its former glory... eventually, but only if left alone.' Really? From anything? No matter how bad? Then does it really matter how much destruction we inflict? Given this obviously dysfunctional paradigm, how did we get here?

This premise of "Nature" as alien from people, is a creation of 16-18th Century intellectuals, urban elitists who neither worked the land nor wanted to. Theirs was a precept born from philosophical theory, not personal experience. It was the source of the popular (and racist) delusions of the American conquest: the "New World," the "empty continent" (that wasn't), and "manifest destiny." These ideas allowed Europeans to discount the PEOPLE who *made* the glorious landscapes Europeans wanted to conquer. Indians imposed regular disturbances on the land over thousands of years: burning, hunting, harvesting, and habitation. From bushes, to bugs, to bears… every life system in the hemisphere had adapted to and therefore depended upon the regularity of those anthropogenic inputs.

European settlers were so enamored with their projected ideals about "Nature" they couldn't even see the Indian as elemental to the landscapes with which they fell in love and not surprisingly assumed to possess and "tame." In most cases, before they even encountered the tribes, their diseases had preceded them. Not long thereafter civilization had converted and assimilated remnant Indian cultures so completely, most ancient Indian knowledge of land management was lost. Fire-exclusion, deforestation, overgrazing, farming, exotic introductions, and abandonment have since distorted most pre-colonial habitats so far beyond recognition that much of that ancient knowledge is inadequate to manage the situation today. Yet somehow, most Americans still hold this psychotic idea that "Nature" will be just dandy if only we bring back large predators, or light it on fire and institute a policy of mandated neglect! That same belief in a primal "Eden" that never was, a "balance of Nature" that in fact was maintained by people, blinds us today, even as it did our forebears.

Today, "preservation" and "protection" are the prescription for lands choking with weeds and decrepit vegetation that have suppressed native germination for so long that dormant native seed is going bad. Hence, even if the land does blow up in a catastrophic fire, the dominance of weeds assures that some native plants will have little chance to germinate, mature, and breed. Lose that seed, and the foundation of productive soil: microbial relationships between bacteria, fungi, and annual plants, many of them specific, will be unrecoverable. Yet that same belief maintains us oblivious to the damage being done.

Public education and mass media feed this sentiment, that everything will be just fine… if we leave it all alone. At that point, one need not even attempt to teach our children how to care for anything. "We" get to visit "Nature" occasionally, or see glowy propaganda about it on TV, and force landowners to "protect our environment" on their dime. Yet if people are so destructive, why does anyone think *they* know how to fix it? So perhaps it is really not so radical that some iconoclastic engineer would

want to try something different. The Wildergarten is intentionally not "Natural." It is a laboratory, testing ground, and art project. You can be the judge as to how we are doing compared to the competition.

What we have before us is a massive opportunity, the genesis of a new industry, one in which a substantial fraction of people live on the land to care for it. Now, that doesn't mean there would be roads and houses everywhere, because if the product is functional habitat or scenic restoration, permanent development is counter-indicated. In fact, I'd bet that the same people who recoil at the sight of development on the land don't feel the same about a tent and wouldn't feel the same about a walking house. It's the knowledge that people are there to do good that transforms how we perceive human presence. In the process, we in the developed world would do well to perhaps rescue remnant hunter gatherers to learn from them. The knowledge gained then could then be applied to restoration work in our world, but care must be taken not to damage their cultural knowledge and continuity.

This industry will require new technology, if only to bring under control so many exotic species and to understand how to apply and test the limits of knowledge such as we have learned here as combined with ancient knowledge to management goals of working in harmony with a developed world. Our first step is to retain and restore functioning reserves of the developed world's remaining genetic constituents, learning how they work, and what safely and productively might be done with them. This is a type of work requiring creative intelligence, intense multidisciplinary education, acute vision, dexterity, strength, agility, ruggedness, and endurance, operating on challenging terrain hostile to machinery. There is also need for both minimal physical impact and/or to operate with minimal need for external supplies.

These demands would defeat economically any robot I can envision in the next hundred years. It is a job for people. To make it happen, we must find a way to value it economically (that book upon which I embarked almost 20 years ago) if and only if operated under limited government with respect for private property and the rule of law. There are too many unknowns, the conditions are too varied and dynamic, and government is too rigid, uniform, and corruptible to attempt otherwise. It's doable both technically and legally, but there are enormous mercantilist interests standing in the way. One thing for certain, as is becoming increasingly evident: the "park" model, as functioning without human intervention, is failing.

This book and site are a work in progress, as I have more chapters to add, and a LOT more detail yet to communicate. Although I have over 20,000 photographs, that is the limitation, particularly as regards demonstrating technique (it is my intention to add video to that end). It may seem like these are needlessly detailed distinctions, but when you are removing a million or more weeds per year by hand, small differences in detection and the time and motion for removal add up to substantial differences in productivity, yield, and repetitive motion injury.

It is long past time to get past our past, and get to work, rebuilding a better world.

March 2016 – *Ceanothus cuneatis*

Project Overview

Variations on the graph on the next page will be offered occasionally in this book. It is not quantitative in nature. It is meant to show the relative time commitment amid the constraints shown in the colored bars in the background. The point is to impart both how I arrived at various decisions and how physical reality governed those choices. Actual time spent on any one project is constrained by the "commitment" line at the bottom governing each line. Engineers call the combined result a "convolution"! Obviously, one can only devote parts of weekends or vacation time to this kind of work when one is an engineering R&D project manager with responsibilities on multiple continents. The pink bars on that line represent the seasonal contributions of my two daughters, who for several years weeded in the spring instead of getting a summer vacation. They were educated here. Included in those responsibilities were the usual time commitments to commuting, daycare, and childrearing. Effectively, the first decade of project time here was devoted to those commitments: kids, French broom, forestry, kids, infrastructure, house, broom, and writing *Natural Process*.

The subjects were encountered more or less sequentially because the reality of this kind of work is that when one starts, things are usually so far gone that conditions which developed long ago dictate the course of action. When we bought the place, it was a fuel bomb, so I started with reducing fuels. There were no grasslands to manage. Instead, there were 10 acres of broom, occasional huge eucalyptus trees, and monoculture stands of acacia trees. Effectively, "weed removal" started as clear-cutting whole stands of exotic trees and brush. It was a twofer, weeds that were fuels! Yet to do anything with weeds as big as eucalyptus I had to fix roads, etc. Once that was done or close to it, I had to deal with what comes up after a clear-cut and pushing dirt around, which at first was primarily broom. Get rid of broom and up came rip-gut brome grass. So from the perspective of deriving priorities, the way it started out, while it may have been a big job, it was very simple to prioritize, but harder to organize as a book.

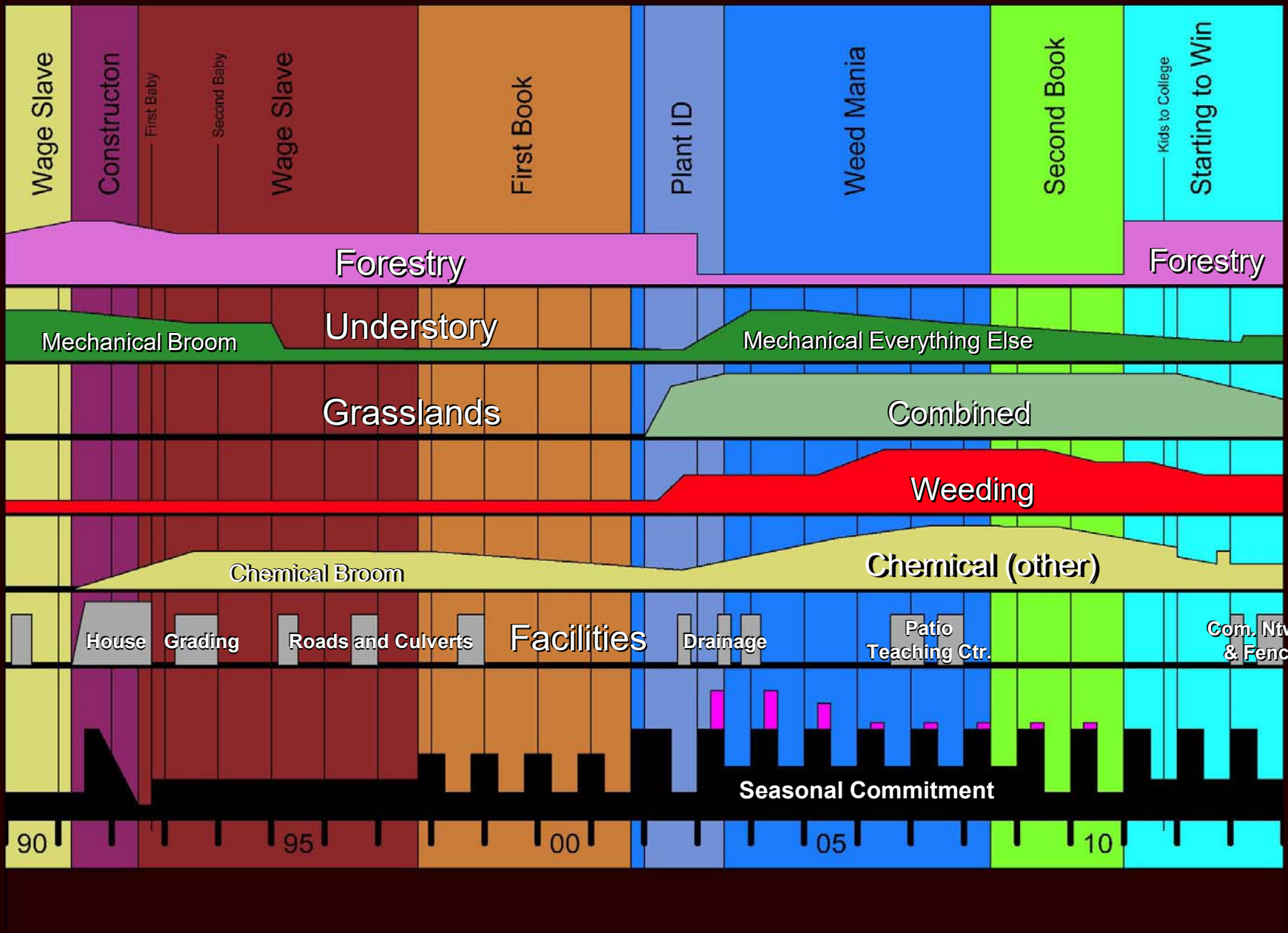
Once I had the house built, I wanted to build a garden etc. for which redwood was an obvious material. Yet I never logged with the idea of what I needed. I did what the forest needed and took what I could get from that. There has always been more than I could use. The rest I gave away because I could not legally sell it.

The decision to focus on grasslands was a fundamental one. Between the horror of our experience with cat's ear, hedge parsley and bedstraw and the commitment I had made in *Natural Process*, there was no other choice. Yet grasslands required so much time that I had to dial back forestry to thinning a series of annual of +/- 1 acre patches, during which I learned a great deal about how the system responded. "Phased Forestry of broadleaf stands (two chapters hence) grew out of that learning process. So in essence, the project was about forests first, then grasses, and then returned to forestry.

As the grassland restoration came to fruition and I learned that no one had ever got this far before, I realized that I had a responsibility to discharge upon having acquired unique research experience. Hence a new commitment was writing and photography for this book. So it goes.

Project Overview

Further explanation is on the next slide



Discussion of the Graphic (Prior Slide)

To recap: the first priority was a fire-safer place to live and fixing roads and drainage to maintain the land while I worked at an engineering career. A simultaneous second goal was eliminating French broom. The third was exotic trees. As I was writing *Natural Process*, (unknown to me) cat's ear destroyed what native grassland had begun to develop after I took out the broom while bedstraw and then hedge parsley made a mess of my forests. Yet the situation was a lot worse than that primarily because of my own botanical ignorance.

Starting out, I was working from my childhood recollection of "what belongs here." My biggest problem was uncertainty re what was native and what was not. I bought books, took pictures, and studied photographs online (which were pretty sparse back then). Once I had done what I regarded as due diligence, I asked for help and got it from Dr. Grey Hayes of the Elkhorn Slough Coastal Training Program. He came, I pointed, he told me what it was, and I took notes, saying things like "it's dead," or "good, I don't have to worry about that any more." Over the ensuing years, I sent dozens of photographs to botanists by email, bought more botany books, and started to get grip on what's what. The species list grew to what it is today. Yet even the experts have been wrong upon occasion, as you may have learned in the third chapter, and in my opinion, bitter cress took that cake.

The graph shows that although the whole restoration process encompassed 34 years (2023), it was only maxed out for 7-10 months per year for about 7-9 years from about 2003-11. As the grasslands have come under control, I had more time to do other work, particularly research and writing (including this book). As I introduce more disturbance into the system by bringing the forest to where it can support more understory life, that has changed, but things were clearly getting easier until late spring 2014 when I first learned that the botanists at the universities and the State had made such a huge mistake with bitter cress *(Cardamine hirsuta)*. Even so, I now believe that what we accomplished could have been done in half the man-hours I put in. It might even require significantly less than that if the experiments upon which I am now embarked prove out.

Needless to say, that does not mean I believe one could do this in three or four years. The way weeds suppress germination of others governs how fast one can purge that "weed bank" which, for now, must be done a "layer "at a time on a post-emergence basis (there may be ways to accelerate that). With new efficiencies, one could do other work, handle more acreage, or some combination of the two, which is the "good news" message in this book.

The central role played by herbicides is obviously glaring. Does it mean I sprayed a lot of material? No. It means that it was a big part of our success. Was it necessary? At this point I must say, yes, it absolutely was. Does this mean you should worry that a bunch of people will follow my lead and go out hosing the landscape with tons of chemicals? If that's all they do, then they will fail. **In every case I have always followed spraying with rigorous hand-weeding.** Weeding is so much work and takes so long that you should have no worry at all about large numbers of people following my lead. So I ask that for now readers suspend their condemnations about chemicals until having seen the photographic evidence.


But Before Tearing
Off Into the Rest
Of the Book...

Photographic Standards

Users of digital cameras use software to adjust their images. To fail to do so is to present what the camera sensor recorded, and not what the photographer saw. Digital cameras have difficulty with high contrast lighting. The sensors lack the dynamic range to gather color data on both bright and shaded elements simultaneously. Averaging algorithms do not work to correct that problem (even if the land would stay still while the wind is blowing). They average everything, not just patches in shade the software cannot distinguish. Yet taking photos in low contrast lighting (under cloud cover or with the sun behind a hill) is a disservice to representing what is there to see because one loses color saturation illuminated by a filtered sunlight spectrum.

So, what do I do? Am I “Photoshopping” these images?

Of course.

To correct those problems I typically take photos under high cloud cover to reduce the contrast problem. I tend to under-expose the image to keep highlights from going to white. I shoot in RAW. I go to either Photoshop or GIMP depending upon what I am trying to do. I bring up the exposure back to a representative level, adjust the white balance to bring back the color, push the highlights and shade to bring back the contrasts and emphasize texture, and occasionally run the “unsharp mask” in feathered selections to increase the apparent depth of field. The result is more pleasing because it looks more like what I was trying to capture. I do resist the temptation to “whore up” the color beyond what is real. I hate that kind of photography.

When shooting redwoods, for example, I also adjust perspective to reduce the keystone effects of the lens.

On very rare occasions when contrast is high or if the depth of field I am seeking is unattainable in a single capture, I will shoot multiple exposures and grab feathered sections from the extremes of multiple images to paste into one composite image that better represents what I saw.

I do use a calibrated monitor.

Obviously, with tools like these, there is a temptation to make the image “pretty” but I do tend to use pretty images After all, I am trying to get people to change their perspective. I am however unwilling to betray their trust that I am doing the best I can to impart an objective truth. Such is simply the challenge of working with powerful communications tools. I do hope you enjoy the product. But I care more about being trusted than being liked or impressing people.

The land I love is impressive all on its own.

Legal Disclaimer

This is has been a multidisciplinary project encompassing botany, biology, horticulture, arboriculture, road and drainage construction, and the skills to build and maintain specialized equipment involving carpentry, plumbing, welding, masonry, electrical, and electronic manual skills. Toss in metrology, diagnostic, statistical, written, and visual communications and it becomes a discipline demanding a very broad range of intellectual, manual, and technical abilities. In other words, habitat restoration is a profession where one must know a great deal about many things, but is by no means an expert in any one of them. Importantly, those skills must be acquired when one is young enough to accomplish something within the life of a project spanning 30-50 years.

Accordingly, I wish to add this caveat: This is a report, not a series of recommendations. This is about what I did, what I learned, what I face, and what I am trying to do about it, not what I am suggesting *you* do. I am not providing specifications or advocating any particular approach or method, although I will certainly tell you my preferences for what I did. Every situation is unique. The degree to which what we did here is applicable to you and or your situation is your own conclusion and responsibility.

OK, enough of the legal disclaimer. Let's get to discussing what this took and how it was done.

The End of the Beginning

You have just completed all of Part I, the introductory part of this book!

From here, this picture book suggests two alternative paths:

1. Read this book linearly, going through the remaining 24 chapters, OR
2. Jump to Part V, the Project Context, indicated with the "Globe" icon on the last page. These are five chapters discuss contextual issues regarding how this project survives while inundated with weeds resulting from the current public preference for politically-determined "environmental protection."

This project progressed through time while the book's chapters are arranged by topic. When possible, the topics in the detailed section are arranged in temporal order because our emphases changed over time according to what was learned and progress that was made. To avoid redundancy, the detailed path presumes that you have read each chapter in order.

Navigation

1. There is a "Table of Content" the end of every chapter (next page).
2. Each line in the Table of Content is a link that opens the corresponding chapter in a new file.
3. The Wildergarten Press logo  on any page is a link that takes you to the Table of Content at the end of that chapter.

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Fire Aftermath: Mesa Verde National Park (weeds)

The Croy and Summit Fires (the wildland urban interface)

Socio-Ecological Paradigms

Environmental Consequences

Meadow Encroachment in Yosemite Valley

Why we can't accept how the original forest as it once was got that way

Living Sheepishly

Why we need a culture of animal husbandry

Sustained Development

Cities are becoming prisons

Katrina: What Did You Expect?

Environmental bureaucracy can be deadly

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: ©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. http://www.shemitta.com

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