

# OUR SAND HILL ROAD A PROTOTYPE POST- DISTURBANCE SYSTEM

April 2010



This slope of fine sand was the area once overwhelmed with cat's ear. Before that it was broom. As the natives repopulated, the area became a complex mix of native groundcovers. In this spot, the more commonly represented are *Filago californica*, clovers (3), miner's lettuce (2), tarweeds (2), *Sagina* (2), miniature lupine, *Camissonia* (2), stonecrop, red maids, fairy mist, lotuses (3), cottonweed, popcorn flower, cudweeds (2), *Navarettia* (2), and not a few more, totaling about 26 natives and 15 weed species.

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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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June 2010

This is the same spot two months later. If you noted that the pattern of shrubs these photos keeps changing, your observation skills are excellent! Why? This sand hill system requires occasional disturbance or it eventually goes back to chaparral and then forest. For now, I am keeping this a sand hill, because I don't want a forest here. So, I pull the bushes, stab the trees, and burn them, constituting that disturbance. While doing so, I have noted hunks of amazing fibrous networks of mycorrhizae. Note also that the clovers seem to have disappeared, leaving bare sand! Where did it go? I am guessing that ants took a lot of it and stored the seed. Now that the clovers are done, we're getting slender tarweed (*Madia gracilis*), and various Navarretias.



February 2009

Over time, I came to conclude that the prior area was probably going to be too much trouble to maintain as a sand hill over the long run, partly because it is so steep that weeding it tears up the hillside a bit more than I would like and partly because nearby oak trees were loading it up with seedlings that are very troublesome to manage. Yet as a complex community on the property, I still wanted to have a sand community some place, so, I thought I would see if I could make one. On this spot about 100' away I pulled all the shrubs, put them in a pile, added tree branches, and lit it on fire. Voila! It started out as *Lupinus bicolor*, *Filago californica*, and of course weeds.



April 2009

Over time in comes *Cammissonia* (spp.), another known Indian staple for both roots and vegetable matter. They are common among rocks and sand here, but most are too small for food (although they grow big in road base-rock). They do better in rainy years.



*Sagina decumbens occidentalis*



*Pterostegia drymarioides*



*Camissonia contorta*



*Cryptantha micromeres*



*Filago claifornica*



*Calandrinia ciliata*



*Navarretia atractyloides*



This type of habitat often involves relatively small plants. The bar at the right side of each of these images is about 1".



Early May 2010

But one just can't appreciate "small" or how complex sand hills get until you see these plants together. To weed this area effectively and efficiently, lighting is critical. Side lighting illuminates the erect weeds, such as grasses, wall bedstraw, and *Filago gallica*. Vertical lighting is more important to detect weeds covered in the groundcover understory (cat's ear). Yet the leaves can't be more than two inches off the surface. So I hope you are wondering what I mean by "understory" when talking about low growing groundcovers.



1”



April 2012

Well, here it is: Stonecrop, *Acemipson parviflorus*, *Trifolium gracilentum*, a *Cammissonia*, *Navarretia*, and mosses. We do “small” here. Four leaved allseed (*Polycarphon tetraphyllum*, a weed found here but not in this photo) grows as small as the mosses in this sand as do wall bedstraw seedlings.



April 2010

That prior image came from the red spot in the background toward which the arrow on the next slide is directed. Variety and detail that intense occur on a scale like this.



View Toward  
Prior Slide  
Location



April 2010



This is the ridgeline 75' above the base of the sand hill. On the left is April 2009 and on the right is the same spot the next year. Although the bumper crop of lupine in the left slide bred successfully, their seedlings did not appear the next year. 2010 was not a good year for lupine in general, which seems to prefer a drier spring, but that is probably not the reason you see so little of it (of which there may be several we will discuss). 2010 was however a GREAT year for clover. Yet you don't see the clover up here, except in a few denser patches near the back (red outline). This distribution, plus the fact that I stirred up this patch with a hoe five years prior, is strong indication that the clover seed bank on this ridge was once totally exhausted. The dense clover patches in the red-outlined area are the scions of the colonizers up on top from recent years.

Sometimes "small" is a big challenge



February 2009



Do it for too long at any one time and you start seeing things.



It can take some time when you're doing it by hand.



March 2010





Filago  
gallica

Filago  
californica



February 2009

With enough disturbance, a site will revert to sand hill species. I burned this spot for about five years in a row and it now comes up with *Filago gallica* and *F. californica*. which forces me to remove the exotic, one by one. The exotic used to outnumber the native 50:1.



February 2009

A burn could also bring up lupine...



February 2009



A sand hill can be profoundly complicated...



February 2009



A rocky wall can bring up all kinds of things...



June 2011

These guys don't care what they grow. Native or exotic, it's all good. In sand hills, they play a major role in what comes up from year to year. Yet there are other factors involved, in that with a recovering native seed bank, not all of the plants are yet well distributed.



March 2010



*Calandrinia ciliata*



*Crassula connata*



*Acmispon americanus*



*A. strigosus*



*A. parviflorus*

All this variety has its consequences when one is making decisions about what to keep and what to weed. This area is entirely native forbs: red maids (*Calandrinia sp.*), stonecrop (*Crassula connata*), skunkweeds (2), and 3 lotuses (insets). It is a considerable difference from what was here before...





April 2014

The red maids can be spectacular. At this time they were just getting established. If we get some rain, this will be amazing.



January 2003

Then there are the *Navarretias*, in particular *N. attractyloides*, aka “skunk weed.” I wish to impart a word on *Navarretias*, as it has become “hip” to express one’s love for such an unlovely plant. It has its’ uses (as I will mention in [the chapter on bees](#)), but I have no idea why anybody would “love” it, unless it was to posture as being such a “Nature Lover,” so attuned, so special, so smart... as to love the unlovable. It stinks when bruised. It makes for very unpleasant weeding. The spines hurt. They break off in your skin. They’re barbed. About the only sane time to weed in it is after a soaking series of rains. I have no doubt why an Indian would light it on fire.



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There are several inarguably sand hill species once found in this area that are now extinct here, in particular Scotts Valley Spine-flower (*Chorizanthe robusta* var. *hartwegii*) and Ben Lomond Wallflower (*Erysimum teretifolium*). I would be willing to host them up here, but only if their “protectors” would please leave me alone. Of course, that would make the plants less endangered and there would be less need for the protection (probably can’t have that). G\_d forbid that we should GROW them.



The should-be-obvious-by-now point about sand hills as a model post-disturbance landscape is that the key for these annual plants is inherently **disturbance**, as without lighting it on fire every year or two this system is very quickly overgrown (as will become more evident in **the concluding chapter on succession**). Such accounts for the variety, complexity, and seasonal variability we see in sand hills.

Yet nearly every post-disturbance weed in creation wants to germinate in them. That makes maintaining a sand hill technically-demanding, risky, and potentially a lot of work.

Yet the very idea that I could light this place on fire every October amid all these expensive homes wrapped in flammable vegetation is beyond unlikely. It is that very contradiction in demands that makes process development, such that these plants can continue to express their seed, necessary for their survival.

Really? Aren't there other places that have them, parks, open space preserves, conservancies, and land trusts? Can't we trust the professionals? I suggest you hold that thought until you are done with the book. Their record is not exactly stellar.

Even if the public did supply all the "funding" these land management service personnel are demanding and took every draconian measure their bureaucratic sponsors demand that together have been shown cumulatively catastrophic to the economy, what if either they, the simply curious enthusiast tramping in those "preserves," or even a random animal introduces a soil pathogen? Is it not more likely that these species will survive if they are maintained in an array of isolated refugia?

Then why are those "protectors" making that so difficult?

So perhaps these otherwise seemingly nasty implications on my part really are warranted. Whose survival are we talking about?

# TABLE OF CONTENT

## Part I - Introduction

1. This is Wildergarten
2. Going "Native"?
3. "Native" Is Not Enough
4. A Site History Like No Other
5. Repeat Photography, Before & After
6. Proof: Pure Germination of Native Annuals
7. Project Overview

## Part II – Forestry

1. Phased Thinning of Broadleaf Forest
2. Conifer Forestry – Thinking Really Big
3. Drainage – When Hill Goes Downhill
4. Roads – From Curse to Blessing
5. Making WOW! - Restoration of Forest Understory
6. Aerial Photography over 25 Years

## Part III - Grasslands

1. "The Onion": Weed Management by Species
2. Colonization Behavior of Native Annual Forbs
3. Sand Hills: A Model Post-Disturbance Habitat
4. Grassland Variety in Meadows & Forests
5. Grassland Restoration and Soils Rehab
6. Comprehensive Weed Management
7. Vegetative Identification & Weeding Technique
8. Pre-Emergence Selection for Native Germination
9. Drought Tolerance in a Pure Native Grassland

Next

## Part IV - Miscellaneous

1. The Vegetable Garden as a Research Tool
2. Pollinators and Native Forbs
3. Fungi (not yet)
4. Specialized Tool Development

## Part V – Project Context

1. Periodic Disturbance and Feed-Forward Stability
2. Weeds: A Tragedy of the Commons
3. Control Boundaries: Fragmentation Is Your Friend
4. Central Planning
5. Our "Ownerless" Backyard

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](#)